

English for Engineers

English for Engineers

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Preface

English for Engineers is designed as a textbook for first year students of Engineering, Science and Technology. It covers the syllabi requirements of most universities and has its focus on the essentials of English Grammar, Usage and Composition.

A major part of the book deals with fundamentals of grammar. It contains copious illustrative examples and specimens of all types of functional grammar and correct usage. Every attempt has been made to make the study of Grammar appealing and interesting.

All the important branches of English composition have been fully covered. The numerous exercises given are intended to provoke students' thought and develop their creativity.

A separate chapter is devoted to pronunciation of English words. The symbols to represent the individual sounds of English are adapted from *Everyman's English Pronouncing Dictionary* by Daniel Jones. Phonetic symbols are explained and examples are given for easy understanding.

The book covers all the major forms of writing useful in real life. Each unit contains a model and a detailed analysis which highlights the characteristic features and the sub-skills involved in that particular kind of writing. Such detailed analysis of the model will be of great help especially to those trying to develop their writing skills.

The book provides special guidance and support for weak students. It includes many question papers for reference.

I take this opportunity to thank all those who have helped me in the completion of this project.

I express my gratitude to our beloved Correspondent, Udyog Ratan Thiru J Sudhanandhen, a great lover of English language, for having so magnanimously encouraged me to write this book. The book owes its very existence to him. His whole-hearted support has been of immense help to me.

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I would like to thank and acknowledge the following sources, which, among others, have been helpful to me in the preparation of this book.

1. English for Engineers and Technologists – Volume 2, Division of Humanities and Social Sciences, Anna University.
2. Learning to Communicate – A Resource Book for Scientists and Technologists – Dr V Chellammal, Anna University.
3. English for Engineers and Technologists – Teachers' Book.
4. The Structure of Technical English – A J Herbert.
5. English Pronouncing Dictionary – Daniel Jones.
6. Speaking English Effectively – Krishna Mohan and N P Singh.
7. Developing Communication Skills – Krishna Mohan and Meera Bannerji.
8. Written English for You – G.Radhakrishna Pillai, K Rajeevan and P Bhaskaran Nair.

I appreciate the valuable suggestions and guidance given by our Principal, Dr T Shanmugam.

I am grateful to Miss J Malini and Mrs Kavitha Mohan, my colleagues who cheerfully rendered all possible help in writing this book.

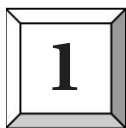
Mr M Murali and Miss K Jeyanthi of Aryaa Infostat Technologies, Erode deserve all appreciation for their excellent computing.

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Suggestions for the improvement of the book will be gratefully acknowledged.

Dr S Sumant

CHAPTER



Words and Meanings (Synonyms)

A *Synonym* is a word that has the same meaning as another word.

E.g: 'scared' is the synonym for 'afraid'.

Examples

I. Match the words in column A with their meanings in column B.

A

- (a) amalgamation
- (b) chip
- (c) radiation
- (d) depletion

B

- giving out rays
- bringing together
- getting completely exhausted
- device composed of silicon

Answer

- (a) amalgamation
- (b) chip
- (c) radiation
- (d) depletion

- bringing together
- device composed of silicon
- giving out rays
- getting completely exhausted

II. Match the words in column A with their meanings in column B.

A

- (a) contamination
- (b) fission
- (c) aggravate
- (d) abuse

B

- intensify
- misuse
- division of the atom
- pollution

Answer

- (a) contamination
- (b) fission
- (c) aggravate
- (d) abuse

- pollution
- division of the atom
- intensify
- misuse

III. Match the words in column A with their meanings in column B.

A

- (a) countless
- (b) tranquil
- (c) produce
- (d) trekking

B

- generate
- extended walking
- numerous
- calm; peaceful

Answer

- (a) countless
- (b) tranquil
- (c) produce
- (d) trekking

- numerous
- calm; peaceful
- generate
- extended walking

(Nov./ Dec. 2002)

(Apr. / May 2003)

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IV. Match the words in column A with their meanings in column B.

(Nov./Dec. 2003)

A

- (a) hazard
- (b) core
- (c) stimulus
- (d) option

B

- something that rouses people to activity
- choice
- innermost part
- danger

Answer

- (a) hazard
- (b) core
- (c) stimulus
- (d) option

- danger
- innermost part
- something that rouses people to activity
- choice

V. Match the words in column A with their meanings in column B.

(Apr./May 2004)

A

- (a) breeder
- (b) drawback
- (c) tranquil
- (d) stringent

B

- calm; peaceful
- severe
- producer
- disadvantage

Answer

- (a) breeder
- (b) drawback
- (c) tranquil
- (d) stringent

- producer
- disadvantage
- calm; peaceful
- severe

VI. Match the words in column A with their meanings in column B.

(Jan. 2005)

A

- (a) objective
- (b) hazard
- (c) spell
- (d) stringent

B

- severe
- aim
- danger
- a condition caused by magical powers

Answer

- (a) objective
- (b) hazard
- (c) spell
- (d) stringent

- aim
- danger
- a condition caused by magical powers
- severe

VII. Match the words in column A with their meanings in column B.

A

- (a) renowned
- (b) globe
- (c) maintenance
- (d) option

B

- world
- upkeep
- choice
- famous

Answer

- (a) renowned
- (b) globe
- (c) maintenance
- (d) option

- famous
- world
- upkeep
- choice

VIII. Match the words in column A with their meanings in column B.

A

- (a) jargon
- (b) equilibrium
- (c) target
- (d) ascribe

B

- objective
- attribute
- state of being balanced
- highly technical expressions

Answer

- (a) jargon
- (b) equilibrium
- (c) target
- (d) ascribe

- highly technical expressions
- state of being balanced
- objective
- attribute

IX. Match the words in column A with their meanings in column B.

(Apr./May 2003)

A

- (a) inedible
- (b) afforestation
- (c) regimen
- (d) primacy

B

- schedule
- importance
- unfit to eat
- expansion of forests

Answer

- (a) inedible
- (b) afforestation
- (c) regimen
- (d) primacy

- unfit to eat
- expansion of forests
- schedule
- importance

X. Match the words in column A with their meanings in column B.

(Apr./May 2004)

A

- (a) nutrition
- (b) indigenous
- (c) target
- (d) preservation

B

- native
- objective, result aimed at
- conservation
- nourishment

Answer

- (a) nutrition
- (b) indigenous
- (c) target
- (d) preservation

- nourishment
- native
- objective, result aimed at
- conservation

XI. Match the words in column A with their meanings in column B.

(Nov./Dec. 2004)

A

- (a) conservation
- (b) layout

B

- the make up of a book, newspaper, etc.
- preservation

Answer

- (a) conservation
- (b) layout

- preservation
- the make up of a book, newspaper, etc.

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Additional Examples

I	(a) vicissitudes	misfortunes
	(b) constraint	limitation
	(c) improvise	change or modify
	(d) nuances	finer aspects
II	(a) type	reading-matter, as distinct from illustrations
	(b) celebrated	famous
	(c) dictate	to state or order something with the force of authority
III	(a) cumulative	gradually increasing in amount, force, etc., by adding one after another
	(b) accelerate	increase speed rapidly
	(c) simultaneously	happening or done at the same time
	(d) viable	possible
IV	(a) prohibitive	preventing or intending to prevent people from using or buying something
	(b) alien	foreign
	(c) perpetuating	continuing
	(d) discarding	throwing something out or away
V	(a) archaeology	the study of ancient cultures, peoples and periods of history
	(b) dynasty	a series of rulers all belonging to the same family
	(c) excavate	to reveal or take out something that has been buried in the ground
	(d) manuscript	a handwritten or typed first copy of a book before it is printed
VI	(a) myth	a story to justify religious beliefs and social customs
	(b) offering	something that is given especially to god
	(c) perpetual	never ends or changes
	(d) portrait	a drawing, painting or photograph of a person
VII	(a) subsequent	following
	(b) flourish	succeed
	(c) culminate	end
	(d) illustrate	explain
VIII	(a) resemble	similar
	(b) distribute	to separate something into parts and supply the parts to various people or places
	(c) proliferate	to reproduce rapidly
	(d) aquatic	growing or living in or near water

EXERCISE

Match the words in column A with their meanings in column B.

- | A | B |
|--|---|
| 1. (i) abnormal | (a) wrong use |
| (ii) abuse (Nov./Dec. 2002) | (b) abundant; rich |
| (iii) accumulated | (c) different in an undesirable way from what is normal |
| (iv) affluent | (d) stored up |
| 2. (i) afforestation (Apr.'97, Oct.'97) | (a) make worse or more serious |
| (ii) deforestation (Apr.'97) | (b) growing old |
| (iii) ageing | (c) clearing of forests |
| (iv) aggravate (Nov./Dec. 2002) | (d) expansion of forests, planting of trees |
| 3. (i) amalgamation (Nov.'96, M.Q.P.) | (a) choice between two things |
| (ii) alternate | (b) bringing together; mixture |
| (iii) alternative | (c) organism able to live both on land and in water |
| (iv) amphibian | (d) one of every two; every second one |
| 4. (i) anticipate (Apr.'96, Oct.'96, Nov.'96, Nov.'97) | (a) arrangement; order |
| (ii) apparent | (b) suitable |
| (iii) appropriate (Apr.'96) | (c) consider before hand; see before hand |
| (iv) array | (d) obvious; clearly seen or understood |
| 5. (i) artificial intelligence | (a) beautiful |
| (ii) artistic | (b) property |
| (iii) assets | (c) make use of |
| (iv) avail | (d) the capacity of a computer for learning and decision taking |
| 6. (i) ballast | (a) combined performance of professional dancers on the stage |
| (ii) ballet | (b) crushed rock or gravel |
| (iii) benevolent (M.Q.P.) | (c) producer |
| (iv) breeder (Apr.'95, Apr./May 2004) | (d) kind and helpful |
| 7. (i) casually (Nov.'98) | (a) magical appeal |
| (ii) informal (Nov.'98) | (b) reservoir, a place where water is stored and collected |
| (iii) catchment | (c) in an unplanned, careless manner |
| (iv) charisma | (d) unmethodical; unconventional |
| 8. (i) chip (M.Q.P.) | (a) arranged according to dates |
| (ii) choreography | (b) refined; of ancient Greek and Roman art and literature of ancient times |
| (iii) chronological | (c) designing of dance |
| (iv) classical | (d) device composed of silicon |
| 9. (i) coagulum (Nov.'98) | (a) the act of binding oneself to do something |
| (ii) collateral | (b) thick; sticky; solid mass |
| (iii) commitment (Apr.'98) | (c) complete |
| (iv) comprehensive | (d) property pledged by a borrower |

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10. (i) congestion
(ii) conservation (Apr.'97, Nov.'97)
(iii) consumption
(iv) contamination (Apr.'94, Apr.'97, Apr.'98, Nov./Dec. 2002)
 - (a) preservation
 - (b) pollution
 - (c) abnormal accumulation of people, traffic
 - (d) use
11. (i) conventional
(ii) convoy
(iii) coolant
(iv) core (Apr.'98, Nov./Dec. 2003)
 - (a) the innermost part
 - (b) traditional
 - (c) group
 - (d) cooling fluid
12. (i) countless (Apr./May 2003)
(ii) cramped (Dec. 2001)
(iii) criminal
(iv) crux
 - (a) confined within narrow limits or space
 - (b) the most important or difficult part of a problem, an issue, etc.
 - (c) numerous
 - (d) law breaker
13. (i) cyanidation
(ii) delightful
(iii) density
(iv) depletion (M.Q.P.)
 - (a) thickness; solidity and compactness
 - (b) process of treating something with a cyanide compound
 - (c) getting completely exhausted
 - (d) giving delight; very pleasant
14. (i) deposits (Oct. 2000)
(ii) device
(iii) disaster
(iv) disease
 - (a) tool; instrument; implement
 - (b) illness; sickness; ailment
 - (c) accumulation
 - (d) misfortune
15. (i) disposal (Nov.'94)
(ii) distress (Nov.'96)
(iii) diversity (Apr.'96, Apr.'97)
(iv) drawback (Apr./May 2004)
 - (a) suffering;
 - (b) variety; having differences; variation
 - (c) impediment; obstacle; hindrance; handicap
 - (d) getting rid of; elimination; removal
16. (i) durable
(ii) ecology (Nov.'97)
(iii) efficiency
(iv) enclosure
 - (a) something put inside a container
 - (b) long lasting
 - (c) biology dealing with mutual relations between organisms and their environment
 - (d) degree of performance
17. (i) effluent
(ii) affluent
(iii) enhance
(iv) enforce (Nov.'94)
 - (a) abundant; rich
 - (b) insist on
 - (c) liquid waste matter; sewage
 - (d) increase
18. (i) ensemble
(ii) enterprise (Apr.'94, Apr.'97)
(iii) estimate
(iv) excellent
 - (a) very good; of very high quality
 - (b) group of artistes; something viewed as a whole; general effect
 - (c) costly; high priced; venture
 - (d) calculate

19. (i) exceptional
(ii) excite
(iii) exotic (Apr.'96)
(iv) expensive
 20. (i) exploitation
(ii) export
(iii) import

(iv) exquisite
 21. (i) extraction (Apr.'96, Nov.'96, Apr.'98)
(ii) extraterrestrial (Apr.'95)
(iii) facilitate
(iv) fantasy (Apr.'95)
 22. (i) fatal (Nov.'96, Apr.2001)
(ii) feasible
(iii) feedback (Apr.'96, Oct.'96, Nov.'96, Apr.'97)
(iv) felling
 23. (i) ferment
(ii) fettered

(iii) fiction (Apr.'95)
(iv) fission (Apr.'94, Apr.'97, Nov./Dec.2002)
 24. (i) flotation
(ii) folk
(iii) frequent
(iv) frescoes
 25. (i) genetics

(ii) genius
(iii) globe
(iv) glorious (Apr.'97)
 26. (i) grab

(ii) haggard
(iii) hazard (Apr.'94, Nov./Dec. 2003, Jan.2005)
(iv) heritage (Apr.'97)
 27. (i) hoarding
(ii) holistic
(iii) hue and cry
(iv) husk
- (a) stimulate
(b) strange; unusual and attractive
(c) costly; highly priced
(d) extraordinary; remarkable; wonderful
 - (a) to sell and transport goods to a foreign country
(b) utilisation; usually unfairly; for one's own benefit
(c) extremely beautiful or delicate; finely or skilfully made or done
(d) bring into a country—people, goods, etc., from foreign countries
 - (a) from outside the planet Earth and its atmosphere
(b) wild imagination
(c) obtaining juices by crushing; boiling
(d) make easy
 - (a) practicable; attainable; procurable; securable
(b) response
(c) cutting down
(d) resulting in death
 - (a) division of the atom
(b) to change or make something by means of a chemical reaction involving yeast or bacteria
(c) chained
(d) fantasy; not factual
 - (a) often
(b) paintings on walls or ceilings
(c) people in general
(d) remaining on the surface
 - (a) a person having a great and exceptional capacity of mind
(b) splendid; magnificent
(c) pertaining to plant and animal breeding
(d) world; sphere
 - (a) something which is passed down over many years within a family or nation
(b) to take something firmly and suddenly
(c) looking very tired and unhappy
(d) danger; peril
 - (a) dry, outer covering of grain, seed, etc.
(b) loud protest
(c) carefully saving and guarding
(d) as a whole and not in parts; total

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28. (i) iconography
(ii) impediment
(iii) import (Dec. 2000)
(iv) export
29. (i) inadvertent
(ii) indigenous (Nov.'98, May 2002)
(iii) indestructible
(iv) indispensable (Apr.'98)
30. (i) indology
(ii) inedible (Apr.'96, Apr.'97, Oct.'97, Oct.'98)
(iii) informal (Oct.'96, Nov.'98)
(iv) casually (Oct.'96, Nov.'98)
31. (i) infrastructure (Apr.'96, Nov.'97)
(ii) initiative

(iii) innovative (Apr.'96, Apr.'97, Apr.'98)
(iv) instantly (Oct.'95)
32. (i) innovations
(ii) intact
(iii) intaglio
(iv) inventory
33. (i) jeopardy

(ii) letterpress

(iii) levitate

(iv) lithography
34. (i) lubrication

(ii) lush (M.Q.P.)
(iii) maintenance
(iv) malleable
35. (i) malevolent
(ii) benevolent
(iii) microprocessor
(iv) migrant
- (a) to sell and transport goods to a foreign country
(b) illustration or drawing of ancient figures
(c) obstacle; hindrance
(d) bring into a country—people, goods, etc., from foreign countries
- (a) undestroyable; imperishable
(b) necessary
(c) negligent; inattentive; careless; unheeding
(d) native
- (a) unfit to eat
(b) the study of India
(c) in an unplanned; careless manner
(d) unmethodical; unconventional
- (a) immediately; suddenly; abruptly; quickly
(b) having the quality of introducing new things; making changes
(c) system of services forming a basis
(d) enterprise
- (a) whole; unaffected; unchanged
(b) detailed list of goods with the estimated worth
(c) introduction of new things or changes
(d) an engraving on stone with a greasy substance, and producing a printed impression therefrom
- (a) contents of an illustrated book other than the pictures
(b) to rise and float in the air, especially by means of magical or spiritual powers
(c) process of printing from the parts of a flat stone or metal surface
(d) in danger; in peril; endangered
- (a) that which can be beaten or pressed into different shapes easily
(b) upkeep; preservation; conservation
(c) oiling; greasing
(d) growing thickly
- (a) one who moves from one place to another
(b) doing evil or causing harm to others
(c) kind; helpful; generous
(d) a very small computer, or a unit of one, consisting of one or more microchips

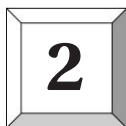
36. (i) miniature (Oct.'98)
 (ii) natural
 (iii) natural language
 (iv) nucleus
37. (i) nutrition
 (ii) objective (Jan. 2005)
 (iii) obsolescence (Apr.'97)
 (iv) offset
38. (i) option (Oct.'98, Nov./Dec.2003)
 (ii) panorama
 (iii) parameter
 (iv) paucity
39. (i) pedestrian
 (ii) penetrate
 (iii) persistent
 (iv) perspective
40. (i) plying (Nov.'96)
 (ii) pollute
 (iii) porridge
 (iv) precious
41. (i) prevalent
 (ii) primacy (Apr./May 2003)
 (iii) priority
 (iv) produce (Apr./May 2003)
42. (i) projection
 (ii) propel
 (iii) proposition
 (iv) prospect
43. (i) protectionism
 (ii) provocative
 (iii) radiation (M.Q.P., Apr.'98)
 (iv) rare
44. (i) react
 (ii) recruit
 (iii) regimen (May 2000, Apr./May 2003)
 (iv) regulations (Nov.'96)
- (a) normal; typical; realistic
 (b) the faculty of verbal expression and the use of words in human communication
 (c) central part of an atom
 (d) very small painting
- (a) method of printing in which the ink is transferred from a plate to a rubber surface and then on to paper
 (b) being out of date
 (c) nourishment
 (d) aim
- (a) limit
 (b) choice
 (c) a small amount
 (d) a complete view of a wide stretch of land, a continually changing view or scene
- (a) to make a way into or through something
 (b) continuing firmly; lasting; long standing
 (c) view
 (d) one who walks
- (a) valuable; costly; worthy; high-priced
 (b) moving between places
 (c) contaminate
 (d) soft food made by boiling a cereal in water or milk
- (a) regarded as more important
 (b) existent
 (c) generate
 (d) important
- (a) push forward
 (b) a plan or scheme suggested
 (c) possible or probable customer; objective; result aimed at
 (d) shooting forward; planning
- (a) unusual
 (b) giving out rays
 (c) system of defending home industries
 (d) intentionally annoying
- (a) rules
 (b) schedule; a set of instructions; a systematic course of action
 (c) change
 (d) take people into service on contract

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45. (i) relate
(ii) reliable
(iii) remote
(iv) renewable
46. (i) renowned
(ii) repercussion
(iii) replenish (May 2000)
(iv) repository
47. (i) retract
(ii) robot
(iii) rural (Oct. 2000)
(iv) urban (Oct. 2000)
48. (i) salvage (Nov.'96, Oct.'98, Apr.'99)
(ii) sanctuary
(iii) semiconductor
(iv) sensitive
49. (i) sensor
(ii) sequence
(iii) sophistication
(iv) spectacular (Apr.'96)
50. (i) spell (Jan. 2005)
(ii) statistics
(iii) stationary (Oct. 2000)
(iv) stationery (Oct. 2000)
51. (i) stagnant (Nov.'96, Oct.'98)
(ii) statutory (Apr.'96)
(iii) stimulus (Dec. 2000, Nov./Dec.2003)
(iv) stray
52. (i) streamline
(ii) stringent (Nov.'94, Apr.'98, Apr./May 2004, Jan. 2005)
(iii) submergence (Apr.'97, Oct.'97)
(iv) suburb
53. (i) support price
(ii) survival
(iii) suspension
(iv) tailored
- (a) distant; far away in space or time
(b) tell
(c) convertible; transformable; modifiable
(d) trustworthy; dependable; faithful
- (a) a reciprocal action or effect
(b) to fill again
(c) a place where things are stored
(d) famous; distinguished; notable; well-known
- (a) relating to the country side
(b) relating to towns and cities
(c) mechanical man; a machine that can perform the actions of a person
(d) withdraw
- (a) an area for wild birds or animals
(b) quickly or easily receiving impressions
(c) rescue; protect; save
(d) that which conducts electricity partially
- (a) of grand appearance, attracting public attention
(b) complexity; having the latest improvements or advanced methods
(c) a device that detects light, heat, pressure, etc.
(d) connected line of events
- (a) writing materials
(b) attraction exercised by a person on others
(c) numerical facts systematically arranged
(d) not moving or changing in condition or quantity
- (a) wandering
(b) something that rouses people to activity
(c) required by written law or legislation
(d) not moving or changing
- (a) severe; strict; stern
(b) a district away from the centre of a town or city, especially where people live
(c) make more efficient and effective
(d) being placed under water
- (a) continuation of life
(b) hanging
(c) specially made
(d) stipulated minimum amount of money to be paid for buying a commodity

54. (i) target (Apr.'96, Apr.'97, Nov.'97, Apr.'98, Nov.'98) (a) hard pottery used as ornamental material in making statues, figures, etc.
 (ii) taxonomy (May 2000) (b) objective; result aimed at
 (iii) technology (c) classification of things
 (iv) terracotta (d) applied science
55. (i) thriving (a) calm; peaceful
 (ii) trade fair (b) developing well and being successful
 (iii) tranquil (Apr.'97, Apr./May 2003, Apr./May 2004) (c) affair; business
 (iv) transaction (Apr.'96) (d) periodical gathering for sale of goods at fixed place and time
56. (i) translucent (a) extended walking
 (ii) trekking (Apr./May 2003) (b) admitting light to pass through, but not transparent
 (iii) unique (c) impartial
 (iv) unbiased (d) novel; original; strange; unheard of
57. (i) uranium (a) relating to the countryside
 (ii) urban (Oct. 2000) (b) strange or sudden changes that are difficult to predict
 (iii) rural (Oct. 2000) (c) a chemical element, used as a source of nuclear energy
 (iv) vagaries (d) relating to towns and cities
58. (i) vehement (a) almost
 (ii) vigour (b) forceful
 (iii) violation (Nov.'96) (c) strength
 (iv) virtually (d) non-observance
59. (i) vital (a) that easily changes into gas or vapour
 (ii) volatile (b) yarn spun from wool
 (iii) worsted (c) very important

CHAPTER



Opposites (Antonyms)

An *Antonym* is a word that means the opposite of another word.

E.g: 'old' has two possible antonyms: 'young' and 'new'.

Examples

I. Make antonyms of the following words by adding suitable prefixes.

(Nov./Dec.2003)

- | | | |
|---------------|---|--------------|
| (a) relenting | × | unrelenting |
| (b) purity | × | impurity |
| (c) sensitive | × | insensitive |
| (d) advantage | × | disadvantage |

II. Make antonyms of the following words by adding suitable prefixes.

(Apr./May 2004)

- | | | |
|----------------|---|--------------|
| (a) associate | × | dissociate |
| (b) sufficient | × | insufficient |
| (c) common | × | uncommon |
| (d) normal | × | abnormal |
| (e) reliable | × | unreliable |

III. Change the following words into their opposites by adding suitable prefixes.

(Jan. 2005)

- | | | |
|--------------|---|--------------|
| (a) ability | × | inability |
| (b) violence | × | non-violence |
| (c) fortune | × | misfortune |
| (d) legal | × | illegal |
| (e) like | × | dislike |
| (f) regular | × | irregular |
| (g) moral | × | immoral |
| (h) suitable | × | unsuitable |

IV. Use the prefixes im-, in-, and un- to get the opposites of the following words.

- | | | |
|-----------------|---------------|------------------|
| (a) comfortable | (b) pure | (c) destructible |
| (d) common | (e) sensitive | (f) skilled |
| (g) exceptional | (h) reliable | |

Answer

- | | | |
|-------------------|-----------------|--------------------|
| (a) uncomfortable | (b) impure | (c) indestructible |
| (d) uncommon | (e) insensitive | (f) unskilled |
| (g) unexceptional | (h) unreliable | |

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EXERCISE

Use suitable prefixes to find the opposites of the following words.

- | | | | |
|-----------------|------------------|---------------------|------------------|
| 1. material | 2. accurate | 3. decisive | 4. sensitive |
| 5. avoidable | 6. expected | 7. direct | 8. affected |
| 9. faithful | 10. essential | 11. capable | 12. precise |
| 13. famous | 14. convenience | 15. distinguishable | 16. equality |
| 17. formal | 18. audible | 19. direct | 20. proper |
| 21. decided | 22. assuming | 23. tolerable | 24. sufficient |
| 25. separable | 26. even | 27. equal | 28. defined |
| 29. partial | 30. effective | 31. authentic | 32. applicable |
| 33. perceptible | 34. firm | 35. convertible | 36. mortal |
| 37. glorious | 38. forgettable | 39. fortunate | 40. familiar |
| 41. stability | 42. aided | 43. approachable | 44. confirmed |
| 45. civilised | 46. breakable | 47. controllable | 48. potent |
| 49. practicable | 50. exact | 51. conclusive | 52. consistent |
| 53. eligible | 54. distinct | 55. disputable | 56. discipline |
| 57. checked | 58. changeable | 59. ceremonious | 60. biased |
| 61. secure | 62. transitive | 63. significant | 64. probable |
| 65. possible | 66. plausible | 67. personal | 68. fertile |
| 69. perishable | 70. permanent | 71. penetrable | 72. dispensable |
| 73. corruptible | 74. curable | 75. digestible | 76. describable |
| 77. defensible | 78. exceptional | 79. democratic | 80. hygienic |
| 81. manageable | 82. qualified | 83. sympathetic | 84. bearable |
| 85. sensible | 86. pregnable | 87. mobile | 88. modest |
| 89. measurable | 90. auspicious | 91. articulate | 92. definite |
| 93. organic | 94. perfect | 95. moderate | 96. mature |
| 97. prudent | 98. propriety | 99. polite | 100. compatible |
| 101. adventure | 102. violence | 103. legible | 104. believe |
| 105. honour | 106. sense | 107. behave | 108. calculate |
| 109. comfort | 110. ability | 111. pleasure | 112. legal |
| 113. quote | 114. integrate | 115. deed | 116. manage |
| 117. represent | 118. agree | 119. able | 120. reparable |
| 121. religious | 122. regular | 123. logical | 124. literate |
| 125. connect | 126. appear | 127. allow | 128. organize |
| 129. obey | 130. please | 131. legitimate | 132. aligned |
| 133. aggression | 134. cooperation | 135. resident | 136. appropriate |
| 137. conduct | 138. lead | 139. judge | 140. spell |
| 141. understand | 142. continue | 143. like | 144. honest |
| 145. relevant | 146. rational | 147. recoverable | 148. climax |
| 149. clockwise | 150. hero | 151. septic | 152. social |
| 153. semester | | | |

CHAPTER



Prepositions

Words like *in*, *on*, *into*, *upon*, *of*, *to*, *from*, *over*, *under*, *above*, *below*, *by*, *up*, *beside*, *besides*, *before*, *after*, *between*, *among*, etc., are called *prepositions*. These words are usually placed before a noun or pronoun to show the latter's relation to some word in the sentence.

Examples

1. The book is *on* the table.
2. He threw a stone *into* the well.
3. She went to Singapore *by* plane.

I. The Expression of Time

1. For a certain moment or point in time : *at*
e.g. *at* six o' clock, *at* noon, *at* midnight, *at* sunrise, *at* sunset, *at* dawn, *at* dusk, *at* half-past six.
2. For dates : *on*
e.g. *on* 5th, *on* 10th, *on* 25th
3. For days : *on*
e.g. *on* Sunday, *on* Monday
4. For months : *in*
e.g. *in* January, *in* February
5. For years : *in*
e.g. *in* 1998, *in* 2001
6. For date and month or month and date : *on*
e.g. *on* 10th September or *on* September 10th
7. For date, month and year : *on*
e.g. India became independent *on* 15th August, 1947.
8. For seasons : *in*
e.g. *in* summer, *in* winter
9. *In* is used before words which denote a period of time
e.g. *in* the summer, *in* September, *in* the year 1990, *in* the summer holidays, *in* the morning, *in* the afternoon, *in* the evening, *at* night or during the night, but *on* Sunday morning, *on* Friday afternoon, *on* Monday night.
10. For festivals which mark a point of time in the year : *at*
e.g. *at* Christmas, *at* Easter, *at* Deepavali, *at* Pongal but *on* Christmas Day, *on* Pongal Day.
11. *By* is used to denote the latest time by which something was or is to be done. The implication is that it may be done before then, and not later.
e.g. You must complete the work *by* Saturday. (on Saturday or before Saturday but not later than Saturday)
12. *In* is used to show the total length of time taken for the completion of some activity or operation.
I can complete this work *in* two hours.
The Yercaud Express reaches Chennai *in* seven hours.

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13. *Since* and *for*

Since is used for a point in time and *for* is used for a period of time. *Since* means from when and *for* means for how long (= total time).

e.g. I have been working in this College *since* 1990.

I have been working in this College *for* eleven years.

<i>since</i>	<i>for</i>
five o' clock	two hours
yesterday	two days
last week	one week
last month	two months
last year	six years
1990	centuries
Christmas	a long time
my birthday	
20th October	

14. *During* is used to express the idea:

(a) That an occurrence continues, or a situation persists throughout the given period.

e.g. We work *during* the day and sleep *during* the night.

(b) That an event took place, or is to take place, within a specified period of time.

e.g. The house was burgled *during* the night.

15. The prepositions *at*, *on* and *in* are not used if the noun giving a time is preceded by an adjective.

I met him last Monday. (not *on* last Monday)

He goes there every day. (not *on* every day)

(Similarly, every morning, every night, every evening, every week, next week, next month, next year, next wednesday, last week, next sunday evening).

16. Yesterday, today and tomorrow, besides being nouns, are also used as adverbs and therefore, do not take a preposition.

I shall meet you tomorrow. (not *on* tomorrow)

He has come today. (not *on* today)

He went there yesterday. (not *on* yesterday)

II. The Expression of Place

(A) Place of residence

1. For Countries, towns, etc. : *in*

Many people live *in* cities.

The Chinese live *in* China.

(Similarly, *in* a village, *in* the desert, *in* a country, *in* a city, but *at* the seaside and *on* an island)

2. For villages and smaller towns : *at*

e.g. I met him *at* Bhavani.

But if a person lives there, or because he happens to be there at the moment of speaking : *in* is used

e.g. He lives *in* Bhavani.

3. Houses, Streets, etc.:

(a) For a kind of house or residence, where nothing specific is mentioned, *in* is used.e.g. She lives *in* a big house.(Similarly, *in* a modern house, *in* a hotel, *in* a cottage, *in* a flat, *in* a mansion, etc.)(b) For a particular house or place of residence, *at* is usede.g. He lives *at* 10 Nethaji Road.(c) For the names of streets and roads, *in* is usede.g. He lives *in* Gandhi Street.**(B) Place of work**1. If the place is a building, then *in* is used.e.g. Her father works *in* a college.She is working *in* a bank.(Similarly, *in* an office, *in* a shop, *in* a factory, *in* a restaurant)2. If it is not a building, *on* is usede.g. *on* a farm, *on* the railway, *on* an estate, *on* a rubber plantation.3. If a particular place is indicated, *at* is generally used.e.g. My uncle works *at* the Town Hall.(Similarly, *at* the railway station, *at* the City General Hospital, *at* the Public Library)4. For a particular room or department, *in* is used.e.g. He is working *in* the English Department.**III.***On* business, *on* purpose, *on* holiday, *on* television, *on* the radio, *on* the phone, *on* fire, *on* time (= not late), *on* duty, *on* leave.**IV.***At* (the age of) 20, *at* 60 kilometres an hour, *at* 100 degrees, *at* night or during the night, *at* the end of, *at* the moment, *at* the weekend, *at* the bus stop, *at* the door, *at* the traffic lights, *at* the top (of the page), *at* the bottom (of the page), *at* home, *at* work, *at* school, *at* college, *at* university, *at* the station, *at* the airport, *at* Lakshmi's (house), *at* the doctor's, *at* the butcher's, *at* a concert, *at* a football match.**V.**

with/without

a man *with* a beard, don't go *without* me.**VI.**Talk *about*, speak *about*, think *about*, hear *about*, know *about*, a book *about*, a question *about*, a programme *about*.**VII.**Accused *of*, afraid *of*, approve *of*, sure *of*, aware *of*, boast *of* or boast *about*, careful *of*, careless *of*, cured *of*, die *of*, full *of*, glad *of*, proud *of*, take care *of*, get rid *of*, dressed *in*, interested *in*, believe *in*.**VIII.**apply *to* a person, apply *for* a post, congratulate someone *on* something.

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IX.

1. Made of, made from

When one substance is changed into another, so that a new substance is produced, *from* is used, but when the original material is not actually changed, but is formed into some object, *of* is used.

e.g. Her dress was made *of* silk.

Flour is made *from* wheat.

2. Superior *to*, inferior *to*, senior *to*, junior *to*, prefer one thing *to* another
3. Sit *on* a chair (without arms), sit *in* a chair (with arms)
4. Pray *to* God but worship God
5. Write *in* ink, write *in* pencil, write *with* a pencil, write *with* a pen
6. Translate from one language *into* another
7. A book *by*, a work *by*, a painting *by*
8. Useful *to* a person, useful *for* a purpose

X.

1. Pleased *with*, happy *with*, agree *with*, angry *with*, satisfied *with*, contented *with*

Agree *with* a person

Agree *to* a proposal

Angry *with* a person

Angry *at* something

2. Married *to*, similar *to*, different *from*
 3. *Beside* (by the side of, next to, near), *besides* (in addition to, furthermore)
 4. *On* the floor (on the ground floor, on the first floor)
 5. Good *at*, bad *at*, weak *in*
 6. *Between*, and
 7. *By* bus, *by* car, *by* auto, *by* taxi, *by* lorry, *by* train, *by* ship, *by* plane, *by* sea, *by* air
- e.g. He went to Salem *by* car.
He went to Salem *in* his car.

XI.

Insist *on*, rely *on*, remind someone *of*, succeed *in*, sympathise *with*, abstain *from*, attend *to*, care *for*, look *at*, look *after*, look *into*, hope *for*, go *to* a place, come *from* a place, *between* (for two), *among* (for more than two).

Additional Examples

I. Fill in the blanks with suitable prepositions.

(Nov./Dec. 2002)

Artificial intelligence (AI) is the science of developing computers that can learn and follow instructions with great accuracy and speed. An example of AI is the use of expert systems.

II. Fill in the blanks with suitable prepositions.

(Apr. / May 2003)

The gobar gas plant is a simple apparatus used for turning animal wastes into bio-gas plus nitrogen fertiliser. 'Gobar' comes from the Hindi word for cow. Cattle-dung forms the primary source of fuel for the rural population in India. Other supplementary materials like organic wastes can be used, wherever the availability of cattle-dung is found to be inadequate.

III. Fill in the blanks in the following sentences with suitable prepositions.

(Nov. / Dec. 2003)

- (a) The ore is then transported to mills.
- (b) The machine is very heavy in spite of its small size.
- (c) Oil is found underground trapped in the layers of rock.
- (d) By operating the pump rhythmically water is pumped.

IV. Fill in the blanks in the following sentences with suitable prepositions.

(Apr. / May 2004)

- (a) One of India's priorities is growing more food.
- (b) There are countless opportunities for qualified computer personnel.
- (c) Gold is a rare metal with a beautiful yellow colour.
- (d) 10 degrees is the limit upto which the nozzle controls the steam flow.

V. Fill in the blanks in the following sentences with suitable prepositions.

(Jan. 2005)

- (a) The apartment consists of three bedrooms, a kitchen and two bathrooms.
- (b) The accident took place because of my fault, so I had to pay for the damage.
- (c) It is terrible that some people are dying of hunger while others eat too much.
- (d) You know that you can depend on me whenever you need help.

VI. Fill in the blanks in the following sentences with suitable prepositions.

(Apr./May 2003)

The present day computer viruses are different from their ancestors. Earlier, these programmes were spread by users who shared programmes and data via floppies. These viruses either hid in the boot sector of floppy disks or in programme files, infecting other files when programmes were launched. But today, they spread at a dizzying speed by way of file transfers and e-mail through the Internet.

EXERCISES**I. Fill in the blanks with suitable prepositions.**

1. My birthday is _____ 23rd September.
2. We are having a party _____ New Year's Day.
3. _____ which year was she born?
4. They ceased work _____ sunset.
5. The exhibition is to be officially opened _____ Monday next _____ 5 p.m.
6. The train leaves _____ 6.30, and arrives in Chennai _____ 11.30.
7. Please let me have your answer _____ the end of the month at the latest.
8. The Second World War ended _____ 1945.
9. He has been working in this office _____ 1990.
10. We have been waiting here _____ three hours.
11. She came home _____ Christmas.
12. We go to Ooty _____ summer.
13. Shakespeare lived _____ the reigns of Elizabeth I and James I.
14. He was born _____ 1564, and died _____ 1616.

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II. Fill in the blanks with suitable prepositions.

1. She lives _____ Delhi.
2. They live _____ Erode _____ India.
3. My friend lives _____ a large house.
4. Would you rather live _____ the town, or _____ the country?
5. The Prime Minister lives _____ 10 Downing Street.
6. Mr. Rajan and his wife stay _____ the seaside for a month each June.
7. He prefers to work _____ a farm.
8. Mr. John is working as an officer _____ the State Bank of India.
9. Would you prefer to work _____ a factory, or _____ a farm?
10. People who live _____ glass houses should not throw stones.

III. Fill in the blanks with suitable prepositions.

1. They're _____ holiday.
2. We watched the news _____ television.
3. We listened _____ the news _____ the radio.
4. Lakshmi got married _____ the age _____ 21.
5. The train was travelling _____ 100 kilometres an hour.
6. Water boils _____ 100 degrees Celsius.
7. Please don't be late. Try to be here _____ time.
8. The plane is flying _____ 700 miles an hour.
9. These trains are very fast. They can travel _____ very high speeds.
10. I am very busy _____ the moment.

IV. Fill in the blanks with suitable prepositions.

1. What would you like to have _____ your meal?
2. They are talking _____ the weather.
3. I don't know much _____ him.
4. She found a purse full _____ money.
5. Are you interested _____ modern art?
6. We were glad to get rid _____ such an untrustworthy person.
7. She is proud _____ her new car.
8. A modest man does not boast _____ his achievements.
9. The prisoner was accused _____ murder.
10. All the players must come _____ uniform.
11. The Yercaud Express goes _____ Erode _____ Chennai.
12. He applied _____ the manager _____ the post _____ a clerk.
13. I complimented her _____ her success _____ the examination.
14. Quotations have been called _____ by the new manager. (Oct. 2001)
15. The painters prevent the metal _____ corroding. (Oct. 2001)

V. Fill in the blanks with suitable prepositions.

1. This tool is quite useless _____ me.
2. This tool is quite useful _____ my purpose.
3. *Romeo and Juliet* was written _____ Shakespeare.
4. He wrote the answer _____ ink.
5. I am senior _____ you.
6. You are junior _____ me.
7. He translated the passage _____ English _____ Tamil.
8. I prefer tea _____ coffee.

VI. Fill in the blanks with suitable prepositions.

1. Erode is _____ Salem _____ Coimbatore.
2. My teacher is pleased _____ my work.
3. I fully agree _____ you.
4. I can't agree _____ your proposal.
5. She is angry _____ me.
6. She is angry _____ your misconduct.
7. My sister is married _____ a doctor.
8. This book is similar _____ that.
9. He is quite different _____ his friend.
10. Come and sit _____ me.
11. _____ a Ford he has a Fiat car.
12. She is good _____ English.
13. Her sister is weak _____ health.
14. The laboratory is _____ the ground floor.

VII. Fill in the blanks with suitable prepositions.

1. He insisted _____ my doing it.
2. I reminded him _____ his promise.
3. She succeeded _____ passing the examination.
4. We should sympathise _____ the poor and the suffering.
5. Students abstained _____ classes.
6. He divided the property _____ his two sons.
7. She divided her property _____ her five children.
8. He has no one to look _____ him in his old age.

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VIII. Fill in the blanks with suitable prepositions.

1. The pulley is mounted _____ the shaft. (Apr.'94)
2. The fuel travels _____ the conveyor chain. (Apr. 2000)
3. Most engines in industrial use are rated to run _____ a constant speed. (Apr. 2000)
4. He is known for his commitment _____ teaching. (Apr. 2000)
5. Steel undergoes structural changes when it is heated _____ its critical temperature. (Apr. 2000)
6. The noise is preventing me _____ studying. (Oct.2000)
7. He will return _____ a fortnight. (Apr. 2000)
8. This substance is soluble _____ water.
9. The road is accessible _____ traffic.
10. This machine is identical _____ the other one.
11. These figures are not consistent _____ the results obtained in previous experiments.
12. The motor is designed to run _____ constant speed, irrespective _____ the load.
13. The metallic sleeves are liable _____ corrosion if they are made _____ cast-iron.
14. This type _____ soil is especially susceptible _____ frost damage.
15. Large frictional losses are incompatible _____ high engine efficiency.
16. The volume _____ the gas will then be directly proportional _____ its absolute temperature.
17. Each operator is responsible _____ the proper maintenance _____ his machine.
18. Vibration _____ the work-piece is detrimental _____ the cutting tool.
19. The boiler drum is rather small relative _____ the weight _____ steam required.
20. The defects inherent _____ this type _____ machine make it _____ limited usefulness.

(Sentences 8 to 20 are taken from A.J. Herbert's *The Structure of Technical English*, pages 172-173).

IX. Fill in the blanks with suitable prepositions.

1. The message on the phone can be forgotten or lost if it is not put _____ in writing.
2. On the telephone you tend to speak casually and you break _____ mid-sentence.
3. To me the time saved seems to make _____ for all the disadvantages you're talking about.
4. He can ask _____ Rajendran, that's my name.
5. This movement has its origins _____ national politics.
6. The first is a 15-minute episode of a continuing dramatic story dealing _____ the adventures of a group of young people.

X. Fill in the blanks with suitable prepositions.

1. She drove the car _____ a speed of 80 miles an hour.
2. He was not prepared to act _____ his principles.
3. The factory has been closed _____ two years.
4. The road has a gradient of one _____ six.
5. _____ tomorrow evening, the report will be ready.

6. Yesterday the chairperson left _____ New Delhi.
7. The ball missed the goal _____ inches.
8. _____ the last earthquake, the town has been facing many difficulties.
9. The value was calculated _____ an accuracy of three decimal places.
10. As the spaceship sailed _____ Jupiter, it sent photographs of the planet to the earth station.
11. The room measures 60 feet _____ 40 feet.
12. This motor consumes electricity _____ two kilowatts per hour.

XI. Fill in the blanks with suitable prepositions.

1. Every day hundreds _____ people visit Teen Murti House _____ New Delhi, Prime Minister Jawaharlal Nehru's official residence, to pay homage _____ the great leader. Converted _____ a museum _____ his death _____ 1964, it is replete _____ historical objects, photographs, rare documents and personal effects that afford a glimpse _____ the multifaceted man. (May 2002)
2. Oil, the major source _____ energy _____ the world today, has had a dramatic effect _____ the world's economy. Until quite recently, the demand _____ oil seemed unlimited.
3. I was born and brought up _____ a remote village located _____ the foothills _____ the Vindhya range _____ Madhya Pradesh.
4. Srinivasa Ramanujan, born a hundred years _____ was a great mathematical genius. To be exact, he was born _____ 1987. He accepted a clerical position _____ the Madras Port Trust Office. _____ 16 June 1913, he wrote G.H. Hardy of Cambridge University a letter that was to change his life.
5. At Hardy's invitation, Ramanujan arrived _____ England _____ 1914. At Trinity College he worked _____ hours and hours _____ mathematics, often neglecting his food and sleep.
6. Unfortunately he fell ill and returned _____ India _____ 1919. He died a year later, _____ the age _____ 32.
7. Two _____ the world's most powerful wind turbines are to be raised off the UK coast _____ the consortium Blyth Offshore Wind Limited. Each turbine is capable _____ generating two megawatts _____ electricity and _____ total will provide enough electricity _____ power 3,000 households annually.
8. A team _____ European researchers and small businesses, coordinated _____ the University _____ Plymouth have invented a new device _____ harnessing the power _____ the waves.
9. The possible development _____ computers _____ future might be _____ these lines. (Oct.'95, Oct.'96)
10. Appropriate technology is a technology that is developed _____ cater _____ the basic needs _____ economically poor people. (Apr. '96)
11. The process _____ smelting consists _____ heating the ore _____ a blast furnace. (Apr.'97)
12. Ramanujan was born _____ 1887 _____ the town _____ Erode _____ southern India and grew up _____ the nearby town _____ Kumbakonam where his father was an accountant _____ a cloth merchant. (Apr.'96)
13. The ball missed the goal _____ inches (Nov.'96)
14. (a) The teacher pointed _____ the mistakes.
(b) He prefers volleyball _____ football. (Nov.'96)

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XII. Fill in the blanks with suitable prepositions.

1. Many people _____ India expend their muscle power every day _____ provide themselves _____ the basic necessities _____ life. An example is the widespread use _____ the bicycle. It should be noted that the power produced _____ a human being cannot match that produced _____ the internal combustion engine and electric motor. But due _____ the shortage _____ fuels and undependable electric supply, an innovative use _____ human energy may have to be considered seriously.
2. _____ pump water, all that one has _____ do is _____ sit _____ the bicycle seat and pedal. The drive is transmitted _____ the front sprocket _____ the rear wheel which now acts as a flywheel and transmits the power _____ the second chain _____ the pump.
3. Lunawa is a coastal village _____ southern Sri Lanka where children can be seen eating fortified Kola Kenda regularly. This local porridge traditionally made _____ coconut, rice and juice _____ fresh green leaves, began to be re-popularised _____ the rural development group Sarvodaya _____ its nursery schools following the spread _____ malnutrition _____ the 1973 cyclone.
4. _____ make the leaf protein, fresh green leaves are fed _____ the machine _____ a feed hopper, and are gradually moved along _____ a helical screw whilst _____ the same time being pulped and then pressed _____ separate out the inedible fibre _____ the juice.
5. _____ those _____ us who harbour the rankling fear that the printed word is _____ its way out and that the electronic age is about to take over the world _____ books, a visit _____ the children's section _____ a public library is a great source _____ satisfaction.
6. Although there is evidence to show that some form _____ printing was known _____ ancient times, it was printing _____ movable type that constituted a turning point _____ the development _____ printing. The invention _____ printing as we know it today is ascribed _____ Johann Gutenberg _____ Strasbourg.
7. Typefoundry too developed side _____ side. The type was made _____ pouring molten type metal, generally an alloy _____ tin and lead, _____ a mould. Typesetting was done _____ hand and the types were wedged together _____ a tray. Ink was spread _____ the type and then the paper was pressed _____ the types. This continued to be the basic method _____ printing _____ the present day.
8. _____ the time he interested himself _____ the printing business, the letterpress was the staple means _____ typesetting. Ghosh's Eastend Press catered, _____ choice, exclusively _____ printing _____ English. _____ Ghosh, printing was as much a mission as a profession. He would insist _____ advancing the cause _____ quality and quality alone. He revolutionised letterpress printing _____ the country.
9. Appropriate technology is technology that is developed to cater _____ the basic needs _____ people with low spending power. It is not low or primitive technology. Also, it is not concerned _____ only small-scale technology. Appropriate technology lies somewhere _____ traditional and modern technology. It is particularly easy to operate and can be maintained even _____ less skilled persons. The special feature _____ this technology is that it can be applied _____ a variety _____ rural needs.
10. We think _____ communication generally in terms _____ words and sentences, but this is not the only way _____ which human beings communicate. There are other ways of communication which do not use language. Some _____ these replace speech, and some supplement speech. The most obvious _____ the latter are gestures _____ various kinds, which we make while speaking. These gestures are so naturally a concomitant

_____ speaking that we make use _____ them even when we are speaking _____ the telephone. The word 'gesture' refers _____ some significant movement _____ the arms, hands or head. Other physiological means — supplementing speech are the use _____ facial expressions and position _____ the body. Gesture is, _____ course, a feature of face-to-face interaction and is therefore associated _____ spoken words. It has its analogue, however _____ written communication. Generally _____ written materials _____ a technical kind, communicative devices like graphs, flowcharts and diagrams take the place _____ gestures.

11. (a) The message on the phone can be forgotten or lost if it is not put _____ in writing.
 (b) On the telephone you tend to speak casually and you break _____ mid-sentence.
 (c) To me the time saved seems to make _____ for all the disadvantages you're talking about.
 (d) He can ask _____ Rajendran that's my name.
 (e) This movement has its origins _____ national politics.
 (f) The first is a 15-minute episode of a continuing dramatic story dealing _____ the adventures of a group of young people.
12. Industrialisation and urbanisation have inevitably put a damper _____ traditional and folk forms of art worldwide, but they are certainly not on the verge of extinction. Indeed _____ several countries, including the US and UK these forms of art have a significant presence. The story is no different in India, either. Despite the growing penetration _____ cinema and television and the general indifference _____ of the elite sections of society _____ the folk medium, a substantial number _____ India's folk art forms have managed not only to survive, but also to flourish _____ continued community support. Proof _____ this was available when over 250 folk artists _____ different parts of the country performed 23 art forms, each distinct _____ the other _____ Chennai _____ July. The performances were part of a fortnight-long seminar cum-cultural festival sponsored _____ the Indira Gandhi Rashtriya Manav Sangrahalaya (IGRMS) an organization established _____ the Union Ministry of Human Resources Development. The IGRMS is engaged _____ identifying areas in the socio-cultural lives _____ people in different states _____ documentation and conservation in 'live' forms.
13. Nuclear power is a genuine economic option _____ power supply _____ locations far removed _____ coal reserves, especially if hydel sources are not available _____ those areas.
14. The progress _____ the field _____ chemistry has resulted _____ the development _____ all kinds _____ industries. The applications _____ chemistry _____ the fields _____ medical and biological are significant. (Apr./May 2004)
15. Appropriate technology is a technology that is developed to cater _____ the basic needs _____ economically poor people. Also, it is not concerned _____ only the small scale technology. Appropriate technology lies somewhere _____ a traditional and a modern technology. It is particularly easy to operate and can be maintained _____ less skilled persons. A special feature _____ this technology is that it can be applied _____ a variety _____ rural needs. (Nov./Dec. 2004)

CHAPTER



Compound Nouns

Compound nouns are nouns, adjectives or verbs made of two or more words or parts of words, written as one or more words, or joined by a hyphen. A few such words commonly encountered in engineering texts are enlisted here.

Examples

- | | |
|------------------------------------|--|
| 1. Air supply | supply of air |
| 2. Animal behaviour | the behaviour of an animal |
| 3. Aluminium extraction | the extraction of aluminium |
| 4. Arithmetic unit | a unit in which arithmetic operations are performed |
| 5. Ball pen | a pen that writes with a tiny ball at its point which rolls ink onto the paper |
| 6. Battery car | car which works on battery |
| 7. Battery valve | valve of a battery |
| 8. Blast furnace | furnace of the type which works by blast of preheated air |
| 9. Boat house | boat used as a house |
| 10. Boiler feed water | water for feeding (supplying) the boiler |
| 11. Boiler inspection door | door for the inspection of a boiler |
| 12. Butterfly valve | valve which is in the shape of a butterfly |
| 13. Butt weld | weld of the type called 'butt' |
| 14. Cable television | television signals transmitted through cables |
| 15. Calculation speed | speed with which calculations are done |
| 16. Calculator memory | memory of a calculator |
| 17. Car battery | battery of a car |
| 18. Carbon dioxide | dioxide of carbon |
| 19. Cassette tape | tape of a cassette |
| 20. Coal gas | gas obtained from coal |
| 21. Colour television | television showing pictures in colour |
| 22. Communication satellite | satellite used for communication |
| 23. Computer language | language used for computer operation |
| 24. Computer diagnosis | diagnosis made by a computer |
| 25. Computer manual | manual for operating the computer |
| 26. Computer operator | a person who operates a computer |
| 27. Computer technology | technology used in computers |
| 28. Concrete structure | structure made of concrete |

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29. Concrete wall	wall made of concrete
30. Condenser extractor pump	pump for extracting from condenser
31. Control centre	centre from where control is exerted
32. Control tower	tower that controls
33. Cooling tower	tower for the purpose of cooling
34. Copper wire	wire made of copper
35. Cylinder condensation losses	losses from the cylinder by condensation
36. Cylinder head	head of a cylinder
37. Cylinder head design	design of the head of a cylinder
38. Cylinder walls	walls of the cylinder
39. Data input	input of data
40. Diesel engine	an engine that runs on diesel
41. Dish antenna	antenna in the shape of a dish
42. Disk drive	drive of a disk (features of a computer that allows intention of a disk for reading)
43. Earth oil price increase	increase in the price of oil obtained from the earth
44. Energy source	source from which energy is obtained
45. Fire fly	fly that emits flickering light
46. Fire tube boiler inspection door	door for the inspection of boiler of fire tube type
47. Flood damage	damage caused by flood
48. Food source	the source of food
49. Friction losses	losses caused by friction
50. Gas jar	jar containing gas
51. Gear mechanism	mechanism for operating the gear
52. Generator power output	output of power from the generator
53. Gravity feed lubrication system	system of lubrication by feeding by gravity
54. Grease gun	gun used for injecting grease
55. Heat content	content of heat
56. Heat transfer	transfer of heat
57. Heat treatment	treatment with or by heat
58. Hot water	water that is hot in condition
59. Immigration department officer	officer of the immigration department
60. Inflation rate	the rate of inflation
61. Information centre	centre for giving information
62. Jet engine	an engine propelled by jet
63. Juice extractor	extractor used for extracting juice
64. Key board	board having keys for operation by finger tips
65. Laser printer	printer that uses laser technology
66. Leaf protein	protein contained in a leaf
67. Letter press	method of printing using raised types

68. Liquid oxygen	oxygen obtained in liquid form
69. Litho plate	zinc or aluminium plate used in printing
70. Lock nut	nut of the kind which locks
71. Machine language	language that a machine operates by
72. Machine testing conditions	conditions under which a machine is tested
73. Machine tools	tools for cutting or shaping materials, driven by a machine
74. Mackintosh computer	a computer of the type known as mackintosh
75. Mains electricity	electricity which comes from the mains
76. Mass production	production in mass
77. Measurement procedure	procedure for measuring something
78. Media support	support by media
79. Mercury thermometer	thermometer using mercury
80. Metal tubes	tubes made of metal
81. Mild steel	steel that is mild in nature
82. Muslin bag	bag made of muslin
83. Newsprint	the paper on which newspapers are printed
84. Nickel alloy	alloy containing nickel
85. Noise pollution	pollution caused by noise
86. Pedal power	power derived from a pedal device
87. Personal computer	computer used for personal purposes
88. Petrol engine	an engine that runs on petrol
89. Picture tube	a tube which gives the picture in a television
90. Power cable	cable conducting power
91. Power output	output of power
92. Power source	source from which/where power is obtained
93. Power station	station producing power
94. Power transmission problems	problems in the transmission of power
95. Radio telescope	telescope using radio waves
96. Radio waves	waves of the radio
97. Research laboratory	laboratory for research
98. Resources utilisation	utilisation of resources
99. Rice husk	husk from rice
100. Road engine	an engine that runs on the road
101. Roller mill	mill for rolling
102. Rubber roller	roller made of rubber
103. Shoe factory site announcement	announcement of site for shoe factory
104. Silver extraction	extraction of silver
105. Small newspaper	newspaper serving small circles
106. Soil laboratory	laboratory for testing soil
107. Software packages	packages of software

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108. Solar cooker	cooker using solar energy
109. Space travel	travel in or to space
110. Spark plug	plug that emits spark
111. Sports column writer	a person who writes sports column for a newspaper/magazine
112. Steam chest	chest containing steam
113. Steam consumption	the consumption of steam
114. Steam engine	engine that works by steam
115. Steam jackets	jackets containing steam
116. Steam turbine	turbine driven by steam
117. Steel bar	bar made of steel
118. Steel box	box made of steel
119. Steel chain	chain made of steel
120. Steel tubes	tubes made of steel
121. Stock exchange broker	a broker for exchange of stock
122. Stop valve	valve made to stop the passage
123. Tamil newspaper reporter	reporter of a Tamil newspaper
124. Television mechanic	mechanic who repairs television
125. Temperature drop	drop in temperature
126. Turret lathe	lathe having a turret
127. Underground cable	a cable that is laid underground to conduct electricity
128. Waste disposal	disposal of waste
129. Water heater	heater used to heat water
130. Water power	power obtained from water
131. Water supply	supply of water
132. Water truck	truck containing water
133. Water tube	tube containing water
134. Weather report	a report on the weather
135. Wet steam	steam that is wet in condition
136. Word processor	processor that records words
137. Worker honey bee	the honey bee of the worker category
138. Workshop machinery	machinery in or for a/the workshop

Do it Yourself

1. A compound noun such as *power source* can be expanded as a *source of power*. Similarly expand the following compound nouns using suitable prepositions. (M.Q.P.)
 - (a) Mains electricity
 - (b) A control centre
 - (c) The research laboratory
 - (d) A water truck

2. Expand the following compound nouns. (Nov./ Dec. 2002)
 - (a) Aluminium extraction
 - (b) Control tower
 - (c) Steel box
 - (d) Space travel
3. Expand the following compound nouns. (Apr./ May 2003)
 - (a) Silver extraction
 - (b) Computer diagnosis
 - (c) Resources utilisation
 - (d) Information centre
4. Expand the following compound nouns. (Nov./ Dec. 2003)
 - (a) Ferrous oxide-coated tape
 - (b) Temperature drop
 - (c) Power cable
 - (d) Heat transfer
5. Expand the following compound nouns. (Apr./ May 2004)
 - (a) Lock nut
 - (b) Computer design
 - (c) Roller mill
 - (d) Heat content
6. Expand the following compound nouns. (Jan. 2005)
 - (a) power source
 - (b) steel chair
 - (c) control centre
 - (d) calculation speed
7. Air supply (M.Q.P., Apr.'95, Oct.'95, Apr.'96)
8. Aluminium extraction (Nov./ Dec. 2002)
9. Ball pen (Apr.'98)
10. Battery car (Apr.'97, Oct. '97)
11. Battery valve (Apr.'97)
12. Blast furnace (M.Q.P., Apr.'96)
13. Boiler inspection door (Apr.2000, Oct.2001)
14. Butterfly valve (Apr.'96, Oct.'96, Apr.'97)
15. Cable television (Apr.'97, Oct.'98)
16. Car battery (Oct.'97)
17. Colour television (Nov.'96)
18. Communication satellite (Apr.'97)
19. Computer diagnosis (May 2003)
20. Computer language (Oct.2002)
21. Computer operator (Oct.2000)

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22. Concrete structure (Apr.'94, Oct.'95, Oct.'96, Apr.'96, Apr.'97)
23. Concrete wall (Apr.'98)
24. Condenser extractor pump (Apr.'94)
25. Control centre (M.Q.P., Jan. 2005)
26. Control tower (Nov./Dec. 2002)
27. Copper wire (Nov.'96, Apr.'97)
28. Cylinder head (Apr.'96)
29. Cylinder head design (M.Q.P., Nov.'94, Apr.2000, Apr.2001)
30. Cylinder walls (Oct.'95)
31. Diesel engine (Apr.'94, Nov.'96, Apr.'97, Oct.'98, Nov.'98)
32. Dish antenna (Nov.'96)
33. Fire tube boiler inspection door (Apr.'96)
34. Flood damage (Apr.'96)
35. Friction losses (Nov.'96, Nov.'99, Oct.2001)
36. Gas jar (Apr.'98, Nov.'98, Apr.'99)
37. Generator power output (Apr.'94, M.Q.P.)
38. Gravity feed lubrication system (M.Q.P.)
39. Grease gun (Apr.'96)
40. Heat content (Oct.'95)
41. Immigration department officer (Apr.2000)
42. Information centre (May 2003)
43. Laser printer (Nov.'98)
44. Lock nut (Apr.'95)
45. Machine testing conditions (Apr.2000, Oct.2001)
46. Machine tools (Oct.2001)
47. Mains electricity (M.Q.P., Apr.'97)
48. Measurement procedure (Oct.2001)
49. Media support (Apr.'97)
50. Mercury thermometer (Nov.'94, Apr.'96, Apr.'97, Apr.'98, Oct.'98)
51. Metal tubes (Apr.'96)
52. Nickel alloy (Oct.'95, Apr.'96, Oct.'96, Apr.'97)
53. Noise pollution (Nov.'98)
54. Petrol engine (Nov.'97, Apr.2001)
55. Power cable (Apr.'95, Nov.'96, Oct.'96, Nov.'97, Apr.'98)
56. Power source (Jan. 2005)
57. Power station (Nov.'99)
58. Power output (Apr.'97)

59. Power transmission problems (Nov.'94, Apr.2000, Apr.2001)
60. Radio telescope (Nov.'98)
61. Radio waves (Apr.'98)
62. Research laboratory (M.Q.P.)
63. Research utilisation (May 2003)
64. Road engine (Oct. 2001)
65. Roller mill (Apr.2001)
66. Shoe factory site announcement (Apr.'96)
67. Soil laboratory (Apr.'96, Apr.'97)
68. Space travel (Nov./Dec.2002)
69. Steel chain (Jan. 2005)
70. Stop valve (Nov.'96)
71. Steam chest (Apr.'96, Apr.2001)
72. Steam consumption (Nov.'96, Oct.'97, Nov.'99)
73. Steam jackets (Nov.'97, Apr.'98)
74. Steam turbine (M.Q.P.)
75. Steel bar (M.Q.P., Apr.'95, Nov.'97, Oct.'98, Apr.'99)
76. Steel box (Nov./Dec.2002)
77. Tamil newspaper reporter (Apr.2000)
78. Television mechanic (Apr.'99)
79. Temperature drop (Nov.'94, Nov.'96, Nov.'98)
80. Turret lathe (Apr.'96, Oct.'96)
81. Waste disposal (Apr.'98)
82. Water supply (M.Q.P.)
83. Water truck (M.Q.P., Apr.'99)
84. Water tube (Apr.'96)
85. Workshop machinery (Apr.'96)

CHAPTER



Degrees of Comparison (Comparative Adjectives)

An *Adjective* is a part of speech that adds more meaning(qualifies) to a noun.E.g. Gopal is a *good boy*.

Similarly an *Adverb* is a word that adds more meaning to a verb.E.g. Jack walked *very fast* to his office.

There are three degrees of comparison of Adjectives and Adverbs: Positive, Comparative and Superlative

Rule I Irregular Comparison

The following Adjectives are compared *irregularly*, that is, their Comparative and Superlative are not formed from the Positive.

Positive	Comparative	Superlative
Bad	worse	worst
Evil	worse	worst
Far	farther	farthest (distance)
Fore	former	foremost, first
Good	better	best
Ill	worse	worst
In	inner	inmost, innermost
Little	less, lesser	least
Late	later, latter	latest, last
Much	more	most (quantity)
Many	more	most (number)
Nigh	nigher	nighest, next
Old	older	oldest
Old	elder	eldest
Out	outer, utter	utmost, uttermost
Up	upper	upmost, uppermost
Well	better	best

Rule II We form Comparative by adding '-er' and the Superlative by adding '-est'.

Positive	Comparative	Superlative
Bold	bolder	boldest
Bright	brighter	brightest
Black	blacker	blackest
Clever	cleverer	cleverest
Cool	cooler	coolest
Close	closer	closest

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Cheap	cheaper	cheapest
Deep	deeper	deepest
Fast	faster	fastest
Few	fewer	fewest
Great	greater	greatest
Gay	gayer	gayest
High	higher	highest
Kind	kinder	kindest
Large	larger	largest
Low	lower	lowest
Near	nearer	nearest
Narrow	narrower	narrowest
Pure	purier	purest
Quiet	quieter	quietest
Sweet	sweeter	sweetest
Small	smaller	smallest
Smooth	smoother	smoothest
Strong	stronger	strongest
Shallow	shallower	shallowest
Simple	simpler	simplest
Tall	taller	tallest
Thick	thicker	thickest
Young	younger	youngest

Rule III When the Positive ends in 'e' only 'r' and 'st' are added.

Positive	Comparative	Superlative
Able	abler	ablest
Brave	braver	bravest
Fine	finer	finest
Large	larger	largest
Noble	nobler	noblest
Rude	ruder	rudest
Safe	safer	safest
True	truer	truest
Wise	wiser	wisest
White	whiter	whitest
Wide	wider	widest

Rule IV When the Positive ends in 'y', preceded by a consonant, the 'y' is changed into 'i' before adding 'er' and 'est'.

Positive	Comparative	Superlative
Busy	busier	busiest
Costly	costlier	costliest
Dry	drier	driest
Easy	easier	easiest
Greedy	greedier	greediest

Gloomy	gloomier	gloomiest
Healthy	healthier	healthiest
Heavy	heavier	heaviest
Happy	happier	happiest
Merry	merrier	merriest
Pretty	prettier	prettiest
Sturdy	sturdier	sturdiest
Ugly	uglier	ugliest
Wealthy	wealthier	wealthiest

Rule V When the Positive is a word of one syllable and ends in a single consonant preceded by a short vowel, this consonant is doubled before adding 'er' and 'est'.

Positive	Comparative	Superlative
Big	bigger	biggest
Fat	fatter	fattest
Hot	hotter	hottest
Red	redder	reddest
Sad	sadder	saddest
Thin	thinner	thinnest
Wet	wetter, more wet	wettest

Rule VI When the Positive is a word of more than two syllables, we add 'more' to the Positive to form the Comparative and 'most' to form the Superlative.

Positive	Comparative	Superlative
Attractive	more attractive	most attractive
Agreeable	more agreeable	most agreeable
Beautiful	more beautiful	most beautiful
Believable	more believable	most believable
Courageous	more courageous	most courageous
Cautious	more cautious	most cautious
Compact	more compact	most compact
Difficult	more difficult	most difficult
Delightful	more delightful	most delightful
Efficient	more efficient	most efficient
Excellent	more excellent	most excellent
Exact	more exact	most exact
Fortunate	more fortunate	most fortunate
Feasible	more feasible	most feasible
Hated	more hated	most hated
Hopeful	more hopeful	most hopeful
Honest	more honest	most honest
Intelligent	more intelligent	most intelligent
Important	more important	most important
Interesting	more interesting	most interesting
Interested	more interested	most interested
Industrious	more industrious	most industrious

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Learned	more learned	most learned
Numerous	more numerous	most numerous
Proper	more proper	most proper
Pleasant	more pleasant	most pleasant
Patient	more patient	most patient
Powerful	more powerful	most powerful
Professional	more professional	most professional
Reluctant	more reluctant	most reluctant
Reliable	more reliable	most reliable
Splendid	more splendid	most splendid
Severe	more severe	most severe
Shameful	more shameful	most shameful
Stupid	more stupid	most stupid
Traditional	more traditional	most traditional
Timid	more timid	most timid
Useful	more useful	most useful
Unjust	more unjust	most unjust
Valuable	more valuable	most valuable
Wonderful	more wonderful	most wonderful

Examples**I. Fill in the blanks in the following sentences with the comparative forms of the adjectives given in brackets.**
(M.Q.P.)

- Diesel is heavier (heavy) than petrol.
- Diesel costs less (little) than petrol.
- Pressurised heavy water reactor is smaller (small) than fast breeder reactor, and is, therefore more compact (compact) than the other.

II. Fill in the blanks in the following sentences with the comparative forms of the adjectives given in brackets.
(Nov./Dec. 2002)

- Lead is heavier (heavy) than aluminium.
- Gold is more expensive (expensive) than silver.
- The process of extraction of oil is simpler (simple) than the process involved in prospecting for oil.
- The disposal of nuclear wastes causes greater (great) problems when compared to the production of nuclear energy.

III. Fill in the blanks in the following sentences with the comparative forms of the adjectives given in brackets.
(Apr./ May 2003)

- Nylon is harder (hard) than rubber.
- Platinum is more expensive (expensive) than gold.
- Today, making investments in landed property is wiser (wise) than investing in articles of gold.
- In mountain regions, day travel is better (good) than night travel.

IV. Fill in the blanks with suitable forms of comparative adjectives.
(Jan. 2005)

- A wise enemy is better (good) than a foolish friend.
- Liberty is more important (important) than food.
- Petrol is costlier (costly) than kerosene.
- The tiger is more ferocious (ferocious) than other animals.

V. Fill in the blanks with suitable forms of comparative adjectives.

- (a) Saudi Arabia was more reluctant (reluctant) to increase oil production than many other countries.
- (b) Venezuela is closer (close) to the equator than Bolivia.
- (c) Dealers feel that the sale of four-wheelers will definitely be better (good) in the future than it is now.
- (d) 24-carat gold is purier (pure) than 22-carat gold.
- (e) His clothes have become more wet (wet) than they were before because he walked in the rain.
- (f) The dependence on alternative power sources is heavier (heavy) in developing countries than in developed countries.

Interchange of Degrees of Comparison**Rule I**

- Superlative = S+V+(the + Superlative) +O.W.
 Comparative = S+V+ Comparative + than any other + O.W.
 Positive = No other + O.W.+ V + so / as (Positive) as +S
 S = Subject, V = Verb, O.W. = Other Words.

Examples

- Superlative = Hyderabad is the largest city in South India.
 Comparative = Hyderabad is larger than any other city in South India.
 Positive = No other city in South India is as large as Hyderabad.

EXERCISE I**Change the degree of comparison without changing the meaning.**

1. This is the best book I have ever read.
2. Shakespeare is the greatest English poet.
3. America is the richest country in the world.
4. Lead is the heaviest metal.
5. Mount Everest is the highest peak of the Himalayas.
6. *Shakuntala* is better than any other drama in Sanskrit.
7. Australia is larger than any other island in the world.
8. *The Arabian Nights* is more popular than any other story-book.
9. Osmium is the heaviest metal on the earth. (Apr.'98)
10. Nuclear power is better than any other source of energy. (M.Q.P. 2002)

Rule II

- Superlative = S+V+(one of the + Superlative) +O.W.
 Comparative = S+V+ Comparative + than most other (many other) + O.W.
 Positive = Very few + O.W.+ V (Plural) + as (Positive) as +S

Examples

- Superlative = Taj Mahal is one of the most wonderful buildings in the world.
 Comparative = Taj Mahal is more wonderful than most other buildings in the world.
 Positive = Very few buildings in the world are as wonderful as Taj Mahal.
 Positive = Very few countries are as rich as England.
 Superlative = England is one of the richest countries.
 Comparative = England is richer than most other countries.

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EXERCISE II**Change the degree of comparison without changing the meaning.**

1. Mumbai is one of the richest towns in India.
2. Very few islands are as prosperous as Java.
3. Engineering seems to be one of the most popular courses among the students.
4. A computer is one of the most modern inventions. (Nov.'97)
5. Platinum is one of the most precious metals. (M.Q.P. 2002)

Rule III

Note: When there are only two persons, places or things, we can have only two degrees of comparison, Positive and Comparative. We cannot have the Superlative Degree.

Comparative = 'A' + V + Comparative + than + 'B'

Positive = 'B' + V + not so (Positive) as + 'A'

Examples

1. (Comp.) = John is taller than Alex.
(Pos.) = Alex is not so tall as John.
2. (Pos.) = Rani is not so rich as Vijaya.
(Comp.) = Vijaya is richer than Rani.

EXERCISE III**Change the degree of comparison without changing the meaning.**

1. The pen is mightier than the sword.
2. Apples are dearer than mangoes.
3. A wise enemy is better than a foolish friend.
4. Silver is more plentiful than gold.
5. Aluminium is not so strong as steel.
6. Water has a higher boiling point than alcohol. (Ap.'97)
7. Platinum is a more expensive metal than gold. (Nov.'98)
8. A mile is longer than a kilometre. (Oct.2000)
9. Alcohol boils at 78°C; Water boils at 100°C. (M.Q.P., 2002)

Rule IV

Positive = 'A' + V + as (Positive) as + 'B'

Comparative = 'B' + V + not + Comparative + than + 'A'

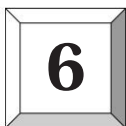
Examples

1. (Pos.) = Tea is as good as coffee.
(Comp.) = Coffee is not better than tea.
2. (Comp.) = Shanthi is not more beautiful than Rani.
(Pos.) = Rani is as beautiful as Shanthi.

EXERCISE IV**Change the degree of comparison without changing the meaning.**

1. Gopal is as strong as Vijay.
2. Latha is as old as Geetha.
3. Alice is not better than Lucy.
4. Alex is not taller than Smith.

CHAPTER



Prefixes and Suffixes

A *Prefix* is a syllable (or syllables) placed at the beginning of a word to qualify its meaning and form a new word.

E.g: incorrect, disqualify

A *Suffix* is a syllable (or syllables) placed at the end of a word to qualify its meaning and form a new word.

E.g: childhood, loyalty

Examples

1. **Ad** 'intensification' as in adduce, adhere, adjoin, adjudge
2. **Ambi** 'on both sides' as in ambidextrous, ambivalent, ambiguous, ambiguity
3. **Amphi** 'both' as in amphibian, amphitheatre, amphibious
4. **Ante** 'before' as in antedate, antediluvian, antecedent, antemeridiem
5. **Anti** 'against' as in antidote, anti-romantic, antisocial, anti-national
6. **Arch** 'chief' as in archbishop, arch-enemy, arch-villain
7. **Auto** 'self' as in autobiography, autocrat, automobile, automatic, autograph
8. **Bene** 'well' as in benefit, benefactor, benevolent, benediction
9. **Bi** 'two, twice' as in bicycle, bilateral, bigamy, biweekly, bisect
10. **Circum** 'around' as in circumference, circumvent, circumnavigation, circumlocution
11. **Co** 'together' as in co-operate, co-ordinate, co-existence, co-education
12. **Con** 'with' as in conjunction, concord, concur, conform
13. **Contra** 'against' as in contradict, contraband, controversy, contrary, contravene
14. **Counter** 'against' as in counteract, counterbalance, counter-attack, counter-revolution
15. **De** 'down' as in dethrone, defame, demoralise, denationalise, dehydrate
16. **Demi** 'half' as in demigod, demi-official, demi-paradise
17. **Dis** 'the negative or opposite of' as in dislike, disagree, discharge, disintegrate, disadvantage, disability, disagreement, disconnect, discord, disorganise, disparity
18. **En** 'to put into or on, to make into to cause to be' as in encase, endanger, enlarge, enrich, engulf, enable, enlist, enforce, enclose, ensure
19. **Em** 'to put into or on, to make into, to cause to be' as in empower, embark, embolden, emplane
20. **Equi** 'equal' as in equidistant, equilibrium, equilateral, equivalent
21. **Ex** 'former' as in ex-President, ex-convict, ex-wife, ex-husband
22. **Extra** 'outside, beyond' as in extracurricular, extraordinary, extravagant, extramarital
23. **Hetero** 'other, different' as in heterogeneous, heterodox, heterosexual
24. **Hexa** 'having or consisting of six of something' as in hexagon, hexameter
25. **Hyper** 'to an excessive degree, over' as in hypersensitive, hyperbole, hypertension, hypercritical

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26. **Il, In, Im, Ir** 'not' as in illiterate, illegal, illegible, illogical, incorrect, ineligible, indecent, invisible, incurable, improper, impossible, impolite, impure, incomprehensible, immaterial, immoderate, impious, irregular, irresponsible, irresistible, irrelevant
27. **Inter** 'between, from one to another' as in international, intermediate, intercaste, intercollegiate, intercontinental, interconnect
28. **Intra** 'on the inside, within' as in intramural, intramuscular, intravenous
29. **Mal, Male, Mali** 'bad or badly, not correct or correctly, ill, evil' as in maladjusted, malpractice, malevolent, malnutrition
30. **Mis** 'bad, wrong, not' as in misdirect, misspell, misconduct, mistrust, misbehave, mischief, misrule, mismanage, misappropriate, mislead, mishap
31. **Mono** 'one, alone' as in monopoly, monogamy, monotheism, monotony, monosyllable, monologue.
32. **Non** 'not' as in nonsense, non-stop, non-profit, non-violence, non-cooperation, non-entity, non-semester
33. **Omni** 'all everywhere' as in omnivorous, omnipotent, omnipresent, omniscient, omnibus
34. **Over** 'from above, outside, across, excess, too much, more than usual' as in overcoat, overwork, overtime, over-confident, over-anxious, over-sensitive, overfed, overjoyed, overheat, overhead
35. **Pan** 'of or relating to all or the whole of' as in pan-American, pan-Islamic, pan-African, pan-global
36. **Philo, Phil** 'liking or being fond of, love' as in philosophy, philanthropy, philology
37. **Poly** 'many' as in polytechnic, polygamy, polytheism, polygon
38. **Post** 'after' as in postgraduate, postpone, post-dated, post-war, post-script, postmortem
39. **Pre** 'before' as in pre-war, prehistoric, precaution, premature, prefix
40. **Pro** 'in favour of, supporting, for' as in pro-Chancellor, pro-government, pro-American, pro-life
41. **Pseudo** 'false, not genuine' as in pseudonym, pseudo-science, pseudo-intellectual
42. **Re** 'again' as in rewrite, return, refund, research, reassure, re-enter, re-apply, re-circulate, re-use, re-align
43. **Self** 'self-sufficient, self-reliant, self-implied, self-educated
44. **Semi** 'half, partly' as in semicircular, semi-final, semicolon, semiprecious
45. **Sub** 'under, below, beneath, less than' as in subway, submarine, substandard, subconscious, subplot, subordinate, submerge
46. **Super, Sur** 'above, over, more than' as in Superstar, superstructure, supersonic, superimpose, superhuman, supernatural, supercharge, superphosphate, superficial
47. **Supra** 'above; beyond' as in supranational
48. **Trans, Tra** 'across; beyond' as in trans-Atlantic, transfer, transit, translate, transcribe
49. **Tri** 'three' as in tricycle, tricolour, trinity, triangle
50. **Ultra** 'extremely, excessively, beyond a specified limit or extent' as in ultra-modern, ultra-violet, ultrasonic, ultrasound
51. **Un** 'not, against' as in unable, unkind, unknown, unfamiliar, unstable, unnatural, unbalanced, unthinking, undo, unbind, unearth, unimportant
52. **Under** 'too little' as in underload, underpay, undersize, underrate, underemployed, undernourished below' as in underline, undercut, undercarriage, undergrowth, underlie
53. **Vice** 'in place of; acting as an assistant to or in place of, next in importance to the rank specified' as in vice-Chancellor, vice-Admiral, vice-President, viceroy
54. **Multi** 'having many of' as in multicoloured, multimedia, multilingual, multinational

Important Suffixes

1. **-age** 'a state or condition of' as in bondage
'a set or group of' as in baggage
'the cost of' as in postage
'a quantity or measure of' as in mileage, dosage
2. **-ance, -ence** 'an action or a state of' as in assistance, resemblance, confidence, abundance, observance, brilliance, innocence
3. **-cy** 'the state or quality of being; having the status or position of' as in accuracy, supremacy, lunacy, aristocracy, democracy
4. **-dom** 'a condition or state of; the rank of; an area ruled by; a group of' as in dukedom, kingdom, officialdom, freedom, boredom
5. **-hood** 'the state or condition of being something; a group of people of the specified type' as in childhood; falsehood; priesthood; neighbourhood
6. **-ing** 'reading, writing, speaking, eating'
7. **-ion, -ation** 'the action or condition of' as in confession,
-ition, -sion hesitation, competition, action,
-tion, -xion expression, oration, radiation, tension, complexion
8. **-ic, -ical** 'of or concerning; that performs the specified action' as in poetic, scenic, Arabic, specific, comical, economical
9. **-ice** cowardice, practice, service
10. **-ism** 'showing qualities typical of; the movement of something; the medical condition or disease indicated' as in socialism, capitalism, patriotism, heroism, Americanism, Buddhism, alcoholism, racism
11. **-ment** 'the action or result of' as in development, judgment, punishment, astonishment, enchantment
12. **-mony** harmony, matrimony, ceremony
13. **-ness** 'the quality, state or character of being' as in dryness, blindness, stillness, boldness, calmness, openness, darkness
14. **-red** hatred, kindred
15. **-ship,** 'the state of being somebody; a person's status or office, skill or ability at something' as in friendship, ownership, professorship, scholarship, lectureship, lordship, hardship
16. **-th** growth, width, sixth, wealth, depth, birth, death
17. **-tude** latitude, longitude, fortitude, magnitude
18. **-ty** loyalty, reality, cruelty, dignity, priority
19. **-ure, -eur, -our** 'the action or process of; a group of things having a specific function' as in closure, failure, seizure, legislature, culture, stature, grandeur, tenure, honour
20. **-y** 'full of; having the quality of' as in dusty, icy, sticky, envy, memory, gluttony, villainy, study, remedy
21. **-ard** 'having the specified, usually negative quality' as in drunkard, coward

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22. **-ate, -ee, -cy, -y** 'full of or showing a specified quality; a specified status or function' as in affectionate, passionate, doctorate, chlorinate, sulphate, nitrate, advocate, curate, magnate, examinee, payee, absentee, attorney, jury
23. **-er, -or, -ar,** 'a person or thing that does; a person concerned with' as in speaker, writer, orator, sailor, beggar, mountaineer, pamphleteer, secretary, financier, dignitary
24. **-ain -an, -en, -on** captain, villain, chieftain, librarian, citizen, warden, sexton
25. **-ist,** 'a person believing in or practising; a person who does the specified action' as in atheist, journalist, socialist, dramatist, dentist, novelist, scientist
26. **-ster** 'a person connected with or having the quality of' as in gangster, trickster, youngster, spinster
27. **-monger** war-monger, fish-monger, iron-monger, rumour-monger
28. **-wright** playwright
29. **-let** 'little; unimportant, minor' as in booklet, piglet, starlet, pamphlet
30. **-ling** 'little; a person or thing that is the object of the specified action' as in duckling, darling, weakling, hireling
31. **-el, -le, -ule, -cel, -sel, -cle** parcel, particle, damsel, chronicle, corpuscle, globule
32. **-erel** cockerel
33. **-en** chicken, kitten, wooden, golden, blacken, darken
34. **-ete, -ette** 'small, artificial; female' as in cigarette, packet, usherette
35. **-ock** hillock, bullock
36. **-y, -ie** daddy, mummy, birdie, puppy
37. **-ade** crusade, brigade, blockade
38. **-al** animal, capital, arrival, denial, proposal
39. **-ant** 'that is or does something; a person or thing' as in merchant, descendant
40. **-ary, -ery -ory, -ry** 'concerned with; of' as in aviary, dispensary, monastery, salary, pantry, dowry, dormitory

Additional Examples

I. (M.Q.P. 2002)

(a) Add suitable endings to the following words to form adjectives.

- (i) suburb
- (ii) continue
- (iii) retract
- (iv) vigour

(b) Use two of the adjectives you've formed in sentences of your own.

Answer

- (a) (i) suburban (ii) continuous (iii) retractable (iv) vigorous
- (b) (i) suburban : In Chennai, there are suburban trains from Madras Beach to Tambaram.
- (ii) continuous : Education is a continuous process.
- (iii) retractable : I have a knife with a retractable blade.
- (iv) vigorous : Heart patients must avoid vigorous exercises.

II. (Nov./Dec. 2002)

(a) **Make nouns from the verbs given below by adding suitable suffixes.**

(suffixes: 'tion', 'ment', 'ence', 'ance')

(i) improve (ii) vibrate (iii) maintain (iv) refer

(b) **Form adjectives from the nouns by adding suffixes like 'al' and 'ical.'**

(i) physics (ii) nature (iii) tradition (iv) season

Answer

(a) (i) improvement (ii) vibration (iii) maintenance (iv) reference

(b) (i) physical (ii) natural (iii) traditional (iv) seasonal

III. (Apr./May 2003)

(a) **Make nouns from the verbs given below by adding suitable suffixes.**

(suffixes: 'tion', 'ment', 'ence', 'ance')

(i) interfere (ii) cultivate (iii) invest (iv) accept

(b) **Form adjectives from the nouns by adding suitable suffixes like 'al', 'ical' and 'able'.**

(i) biochemistry (ii) environment (iii) technology (iv) reason

Answer

(a) (i) interference (ii) cultivation (iii) investment (iv) acceptance

(b) (i) biochemical (ii) environmental (iii) technological (iv) reasonable

IV. Make antonyms of the following words by adding suitable prefixes. (Nov./Dec. 2003)

- (a) Relenting
- (b) Purity
- (c) Sensitive
- (d) Advantage

Answer

- (a) Unrelenting
- (b) Impurity
- (c) Insensitive
- (d) Disadvantage

V. Make antonyms of the following words by adding suitable prefixes. (Apr./May 2004)

- (a) Associate
- (b) Sufficient
- (c) Common
- (d) Normal / reliable

Answer

- (a) Dissociate
- (b) Insufficient
- (c) Uncommon
- (d) Abnormal / unreliable

VI. Change the following words into their opposites by adding suitable prefixes. (Jan. 2005)

- (a) Ability
- (b) Violence

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- (c) Fortune
- (d) Legal
- (e) Like
- (f) Regular
- (g) Moral
- (h) Suitable

Answer

- (a) Inability
- (b) Non-violence
- (c) Misfortune
- (d) Illegal
- (e) Dislike
- (f) Irregular
- (g) Immoral
- (h) Unsuitable

VII. Give four words beginning with the prefix 'self' and four words beginning with the prefix 'super'.

Answer

- (a) self = self-sufficient, self-reliant, self-implied, self-educated
- (b) super = supermarket, supernatural, superpower, superstar

Word Formation

(A) Nouns from Verbs.

- | | |
|----------------|---------------|
| 1. Develop | development |
| 2. Suck | suction |
| 3. Conclude | conclusion |
| 4. Sanitise | sanitation |
| 5. Operate | operation |
| 6. Require | requirement |
| 7. Contaminate | contamination |
| 8. Displace | displacement |
| 9. Associate | association |
| 10. Direct | direction |
| 11. Maintain | maintenance |

(B) Use the prefixes im-, in-, and un-, to find the opposites of these words.

- | | |
|-----------------|----------------|
| 1. Comfortable | uncomfortable |
| 2. Sensitive | insensitive |
| 3. Pure | impure |
| 4. Skilled | unskilled |
| 5. Destructible | indestructible |
| 6. Exceptional | unexceptional |
| 7. Common | uncommon |
| 8. Reliable | unreliable |

(C) Make a verb from each of the following adjectives.**(-ise/ ize, -fy, -en)**

- | | |
|-------------|------------|
| 1. Specific | specify |
| 2. Final | finalise |
| 3. Special | specialise |
| 4. Broad | broaden |
| 5. Electric | electrify |
| 6. Central | centralise |
| 7. Fresh | freshen |
| 8. Simple | simplify |

(D) Make a noun from each of the following.

- | | |
|-------------|---------------|
| 1. Specific | specification |
| 2. Final | finalisation |
| 3. Special | speciality |
| 4. Broad | breadth |
| 5. Electric | electricity |
| 6. Central | centrality |
| 7. Fresh | freshness |
| 8. Simple | simplicity |

(E) Add a suitable ending to each of the following words to form an adjective.

- | | |
|--------------|---------------------|
| 1. Advantage | advantageous |
| 2. Suburb | suburban |
| 3. Produce | productive |
| 4. Continue | continuous |
| 5. Care | careful, careless |
| 6. Vigour | vigorous |
| 7. Retract | retractable |
| 8. Power | powerful, powerless |
| 9. Compare | comparative |
| 10. Avail | available |
| 11. Vehicle | vehicular |
| 12. Relate | relative |
| 13. Differ | different |
| 14. Comfort | comfortable |

EXERCISE**I. Give the Noun form of.**

- | | |
|------------|-----------|
| 1. Verify | (M.Q.P.) |
| 2. Derive | (M.Q.P.) |
| 3. Weaken | (Apr.'94) |
| 4. Dispose | (Apr.'97) |
| 5. Observe | (Nov.'97) |

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- | | |
|--------------|-------------|
| 6. Deplete | (Apr.'98) |
| 7. Require | (Apr.'98) |
| 8. Stabilise | (Nov.'98) |
| 9. Generate | (Nov.'98) |
| 10. Conduct | (Nov.'99) |
| 11. Classify | (Apr. 2000) |
| 12. Deny | (Apr. 2000) |
| 13. Repute | (Oct. 2000) |
| 14. Pollute | (Oct. 2000) |
| 15. Beautify | (Oct. 2000) |

II. Give the Adjectives form of.

- | | |
|-------------------|-------------|
| 1. Rely | (Apr. 2000) |
| 2. Dispute | (Apr. 2001) |
| 3. Action | (Oct. 2000) |
| 4. Suitability | (Nov.'98) |
| 5. Recovery | (Nov.'98) |
| 6. Classification | (Apr.'98) |
| 7. Communicate | (Nov.'97) |
| 8. Generate | (Apr.'97) |
| 9. Penetration | (Apr.'97) |
| 10. Production | (Apr.'94) |
| 11. Solution | (M.Q.P.) |
| 12. Verify | (M.Q.P.) |
| 13. Necessity | |
| 14. Prefer | |
| 15. Defect | |

III. Give the verb form of.

- | | |
|------------------|--------------------------|
| 1. Beauty | (Apr. 1994, M.Q.P. 2001) |
| 2. Stabilisation | (Apr. 1994) |
| 3. Recovery | (Apr.'97) |
| 4. Strength | (Nov.'97) |
| 5. Derivation | (Apr.'98) |
| 6. Production | (Nov.'98) |
| 7. Class | (Apr.'98) |
| 8. Pure | (Apr. '99) |
| 9. Action | (Oct. 2000) |
| 10. Weakness | (Oct. 2000) |
| 11. Motion | (Oct. 2000) |
| 12. Pollution | |
| 13. Decision | |
| 14. Conclusion | |
| 15. Transmission | |

IV. Add prefixes, suffixes to the following words in accordance with the meanings given against them.

(M.Q.P., Apr. '98)

1. _____ national: having contact with many nations.
2. _____ developed: not developed.
3. Deforest _____ : clearing of forests.
4. Submerge _____ : being placed under water.

V. Add prefixes to the following words to give the meanings given against them.

(Apr. '94)

1. _____ national; between
2. _____ lateral: many
3. _____ marine: under
4. _____ pollution: against

VI. Add the correct prefixes to the following words to produce their opposites.

(Apr. '97)

1. _____ connect
2. _____ conductor
3. _____ visible
4. _____ purity

VII. Add suffixes to the following to give the meanings given against them.

(Nov.'97)

1. Simple _____ : make simple
2. Weight _____ : without weight
3. Micro _____ : instrument for seeing
4. Speed _____ : instrument for measuring

VIII. Add the correct suffixes to the following words to give the meanings given against them. (Apr. '98)

1. geo _____ : study of
2. weight _____ : without
3. spoon _____ : full of
4. micro _____ : instrument for seeing

IX. Add the correct prefixes to the following words to give the meanings given against them.

(Nov.'98)

1. _____ pollution: against
2. _____ marine: under
3. _____ national: many
4. _____ vision: distant

X. Add suitable prefixes to give the opposites.

(Apr.'99)

1. _____ conductor
2. _____ possible

XI. Give the meanings of these prefixes.

(Nov.'99)

1. ambi _____
2. poly _____

XII. Add suitable prefixes to give the opposites.

(Apr. 2000)

1. _____ Proper
2. _____ Behave

XIII. Add prefixes / suffixes to the following in accordance with the meanings given against them. (Oct. 2000)

1. _____ marine: under
2. _____ logy: (the study of) earth
3. spoon _____ : full of
4. speed _____ : instrument for measuring

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XIV. Give the meanings of these prefixes.

(Oct. 2000)

1. Un
2. Mis

XV. Add suitable prefixes to give the opposites.

(Apr. 2001)

1. _____ normal
2. _____ human

XVI. Add prefixes/ suffixes to the following to match the meanings given against them.

(M.Q.P. 2001)

1. _____ national : above and beyond
2. _____ nourished : insufficient
3. _____ bole : over statement
4. _____ communicate : expel from the communion
5. _____ beauty : verb form
6. _____ sensitive : noun form

XVII. Add suffixes / prefixes to the following words in accordance with the meanings given against them.

1. _____ merge : place below water
2. require _____ : something necessary
3. _____ reliable : not very dependable
4. construct _____ : act of combining

(Apr. '94)

XVIII. Add suffixes/ prefixes to the following words in accordance with the meanings given against them.

1. advantage _____ : having advantage
2. continue _____ : that which continues
3. _____ applicable : cannot be applied
4. _____ legal : not legal

(Apr. '95)

XIX. Add suffixes / prefixes to the following words in accordance with the meanings given against them.

1. _____ zero : less than zero
2. _____ tension : abnormal blood pressure
3. understand _____ : that which can be understood
4. submerge _____ : that which can be submerged.

(Oct. '95)

XX. Add suffixes / prefixes to the following words in accordance with the meanings given against them.

1. _____ national : having contact with many nations.
2. _____ purity : not pure
3. Micro _____ : instrument for seeing
4. weight _____ : without weight

(Apr. '97)

XXI. Add suffixes / prefixes to the following words in accordance with the meanings given against them.

1. _____ pollution : against
2. _____ marine : under
3. geo _____ : study of
4. micro _____ : instrument for seeing

(Nov.'96, Oct.'97)

XXII. Add suffixes / prefixes to the following words in accordance with the meanings given against them.

1. _____ sonic : above, more than
2. _____ conductor : not
3. Simple _____ : make simple
4. spoon _____ : full of

(Apr. '98)

XXIII. Add suffixes / prefixes to the following words in accordance with the meanings given against them.

1. _____ national : many
 2. _____ stop : self
 3. weight _____ : without
 4. red _____ : resembling
- (Oct. '98)

XXIV. Make negatives from the following words by adding appropriate affixes:

1. fair 2. smoker 3. understand 4. care (Apr. '97)

XXV. Add the correct prefixes to the following words to produce their opposites.

1. _____ justice
 2. _____ material
 3. _____ possible
 4. _____ comfort
- (Apr. '96)

XXVI. Add the correct prefixes to the following words to produce their opposites.

1. _____ destructible 2. _____ common
 3. _____ exceptional 4. _____ skilled
- (Nov. '96)

XXVII. Add the correct prefixes to the following words to produce their opposites.

1. _____ comfortable 2. _____ reliable
 3. _____ pure 4. _____ sensitive
- (Apr. '97)

XXVIII. Add prefixes / suffixes to the following words in accordance with the meanings given against them.

1. _____ sensitive : abnormally or excessively sensitive.
 2. _____ violet : having wavelength beyond the violet end of the spectrum.
 3. _____ standard : not having the required or normal quality.
 4. _____ structure : subordinate or underlying parts on which something is built.
- (Apr. '96)

XXIX. Add prefixes/ suffixes to the following words in accordance with the meanings given against them.

1. _____ marine : under the sea
 2. _____ pollution : against pollution
 3. geo _____ : study of the earth
 4. speed _____ : instrument for measuring speed
- (Nov. '96)

XXX. Add prefixes / suffixes to the following words in accordance with the meanings given against them.

1. _____ national : having contact with many nations
 2. _____ developed : not developed
 3. simple _____ : make simple
 4. weight _____ : without weight
- (Apr. '97)

CHAPTER



'If' Clauses (Conditional Clauses)

Usually conditional sentences contain the word '*if*'.

The following are the various kinds of conditional or '*if*' clauses.

I. Open condition

Open condition, i.e., a condition which may or may not be fulfilled.

If it rains, the match will be cancelled.

(It may rain, or it may not; we do not know)

If I have the time, I will go.

(I will go unless I don't have time)

If my headache disappears, we can play tennis.

(I will play tennis unless I have a headache)

The open condition is also called possible or probable condition.

The '*if*' clause can come first or last in the sentence with no change in meaning.

Notice that when the '*if*' clause comes first, it is followed by a comma.

If you work hard, you will pass.

If I am free, I'll meet you.

Formula

If + Subject + Verb (Present tense) + Other Words

Subject + will + Verb + Other Words

may + V

can + V

shall + V

Examples

I. If you do it, you will be happy.

If he buys the book, he will read it.

If they have the money, they will buy a car.

(or)

Subject + will + V

may + V + Other Words, if + Subject + Verb (Present Tense) + Other Words

can + V

shall + V

II. You will pass, if you work hard.

You will fall ill, if you drink dirty water.

I'll buy the cassette, if I go there.

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Additional Examples

1. If the train is late, we'll walk.
 2. She'll call you if she has time.
 3. If it costs too much, I shall buy a smaller one.
 4. If the class is full, we'll find another one.
 5. What will we do if the taxi doesn't come?
 6. Will you phone me if there are any problems?
 7. I'll go next week, if I can get a train ticket.
 8. If he sees me here, he will be really angry.
 9. Mary will be worried if you don't come to the airport.
 10. If it snows this winter, we'll go skiing.
 11. I'll lend them some money, if they ask me.
 12. If you visit Oxford, you'll see some interesting old buildings.
 13. If I have time, I shall visit the exhibition.
 14. If I see a suitable present for her, I shall buy it.
 15. If I have the money, I shall buy a new car.
 16. If the weather is good, I shall go for a walk.
 17. Unless the weather is good, I shall stay at home.
- Notice that 'unless' is equivalent to 'if not'.
- Unless you work hard, you will not pass.
- If you do not work hard, you will not pass.

EXERCISE I**Complete the following.**

1. If drivers do not obey traffic regulations, _____. (Apr./May 2004)
2. If the engine is serviced regularly, _____. (Nov./Dec. 2003)
3. If the battery of the car is 'down', _____. (Apr./May 2004)
4. If passengers stand on the footboards of buses, _____. (Nov./Dec. 2003)
5. _____, the aeroplane cannot take off.
6. If there are more pedestrians on the roads, _____. (M.Q.P., 2001)
7. If the weather is rough, _____. (M.Q.P., 2001)
8. _____, the tyre will be damaged. (Nov. '99)
9. If there is a power breakdown, _____. (Oct. 2000)
10. Unless the water is pure, _____. (Apr. '97)
11. If you don't apply lubricant to a machine periodically, _____. (Apr. '99)
12. If the coolant is not circulated in the core of the reactor, _____. (Apr. '99)
13. If the supply of lubricant fails, _____. (Apr. '99)
14. If you burn coal, _____.
15. _____, the generator will automatically come into operation.
16. _____, emergency controls will operate immediately.

17. If the nucleus contains an excess of neutrons, _____.
 18. _____, if the uranium is fissioned.
 19. _____, if the quality of steam flowing through the cylinders is increased.
 20. Unless the steam is superheated, _____.
 21. _____, the pressure at any part of the stroke may be measured.
 22. If current is passed through a solenoid, _____.
 23. If no external forces act on a system, _____.
 24. _____, unless the isotopes are shielded properly.
 25. A sudden loss of lift will be experienced, _____.
 26. The conveyor belt will be liable to slip off the drive, _____.
 27. If the fuel reaches this critical temperature, _____.
 28. _____, the temperature at the turbine will be too high.
 29. The mixture may ignite spontaneously, _____.
- (Sentences 15-29 are taken from A.J. Herbert's *The Structure of Technical English*, page 106).

II Improbable or rejected condition

The verb in the conditional clause is generally in the simple past tense, and the verb in the main clause is generally 'would or should'.

Conditional sentences of this type are used:

When the supposition is contrary to known facts, as in:

- e.g. If he decided to work systematically, he would pass the examination.
(but we know he cannot decide)
If he ran all the way, he would catch the train. (but he doesn't)

Formula

If + Vb. (Past Tense) + O.W., S + would + Vb (Present tense) + O.W.
could
might
should

Examples

- If I lived by the sea, I would do a lot of swimming.
If they asked me to work for them, I might accept.

EXERCISE II

Complete the following.

1. _____, I would go to the beach with you this weekend.
2. If you behaved in a foolish manner, _____.
3. If I went to Delhi today, _____.
4. If he stopped smoking, _____.
5. If you ate so much every day, _____.

III Impossible condition

The condition expressed by this type may be called 'impossible' condition. This kind of condition cannot at all be fulfilled. The verb in the conditional clause is in the past perfect tense (had + Past Participle), and the verb in the main clause is generally 'would/ should have + Past Participle'.

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Formula

If + S + had + Past Participle + Other Words, S + would have + Past
Participle + Other Words.

Example

If he had worked hard, he would have passed the examination.

(He did not work hard and so he did not pass the examination).

Note: It is also possible to indicate a past unreal condition without using the word *if*. In this case, the auxiliary *had* is placed before, rather than after, the subject.

Had he worked hard, he would have passed the examination.

Formula

Had + S + Past Participle...

Examples

Had we known that you were there, we would have written you a letter.

Had she found the right buyer, she would have sold the house.

Had I not seen it with my own eyes, I would not have believed it.

EXERCISE III**Complete the following.**

1. _____, he would have driven it.
2. If the Chairman had not told us, _____.
3. _____, our picnic would have been a great success.
4. Had you done as I told you, _____.
5. If they had taken my advice, _____.
6. If he had been more careful, _____.
7. If only we had been two minutes earlier, _____.
8. If the electricity had not failed, _____.
9. _____, the manager would have rewarded you.
10. Had I known it, _____.
11. He would have gone to the party _____. (Apr.'94, Nov. '99)
12. A war would have broken out _____. (Apr.'97)
13. If his brother had been driving, _____. (Nov.'98, Oct. 2000)
14. Had it rained, _____. (Apr. 2000)
15. If there had been no rains last month, _____. (M.Q.P.)

IV. Imaginary Condition

Imaginary or unreal condition, i.e. one which could not be true (If I were you), or which, even if it is not impossible, is not seriously contemplated, but is only advanced for the sake of argument.

If I were a millionaire _____

If I were rich _____

In the unreal condition the past tense of *be* is always *were* in a conditional sentence,

If I were _____

If we were _____

If he were _____

If she were _____

If it were _____

If you were _____

If they were _____

If I were rich, I would travel around the world. (I am not rich) (I'm *not* going to travel around the world)

If he were sick, he would stay home today.

(He's *not* sick) (He's *not* going to stay home today)

Formula

If + Subject, were + Other Words, S + would + verb (Present tense) + Other Words.

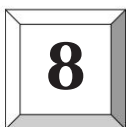
EXERCISE IV

Complete the following.

1. If he were a king, _____.
2. _____, I would own a bungalow.
3. If he were here, _____.
4. If I were the Minister of Commerce, _____.
5. _____, I would meet my friends.
6. _____, they would buy many things.
7. If I were the Prime Minister of India, _____.
8. If there were no politicians to tempt people _____.
9. If there were no pedestrians on the roads, _____.

(M.Q.P.)

CHAPTER



Appropriate Forms of Words (Word Formation)

In the formation of a sentence, the same word may take different forms (undergo transition) to suit the part of speech where it appears. Often the word would have to be modified to fit into the sentence and agree with its other parts. The noun, verb and adjective forms of various words are given below:

S.No.	Verb	Noun	Adjective
1.	Accept	Acceptance	Acceptable
2.	Act	Action	Active
3.	Advise	Advice	Advisory
4.	Analyse	Analysis	Analytic
5.	Announce	Announcement	—
6.	Assume	Assumption	Assumed
7.	Beautify	Beauty	Beautiful
8.	Bleed	Blood	Bloody
9.	Calculate	Calculation	Calculable
10.	Classify	Classification	Classifiable
11.	Communicate	Communication	Communicative
12.	Compare	Comparison	Comparable
13.	Compensate	Compensation	Compensatory
14.	Complete	Completion	Complete
15.	Conclude	Conclusion	Conclusive
16.	Conduct	Conduction	Conductive
17.	Consider	Consideration	Considerate
18.	Contaminate	Contamination	Contaminated
19.	Continue	Continuation	Continuous
20.	Contribute	Contribution	Contributory
21.	Converge	Convergence	Convergent

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S.No.	Verb	Noun	Adjective
22.	Corrode	Corrosion	Corrosive
23.	Decide	Decision	Decisive
24.	Defect	Defect	Defective
25.	Define	Definition	Definite
26.	Deplete	Depletion	Depleted
27.	Derive	Derivation	Derivative
28.	Destroy	Destruction	Destructive
29.	Develop	Development	Developable
30.	Displace	Displacement	–
31.	Dispose	Disposal	Disposable
32.	–	Durability	Durable
33.	Economize	Economy	Economical, Economic
34.	Electrify	Electrification	Electric
35.	Employ	Employment	Employable
36.	Enter	Entrance	–
37.	Explode	Explosion	Explosive
38.	Feed	Food	–
39.	Generate	Generation	Generative
40.	Govern	Government	Governing
41.	Grow	Growth	Growing
42.	Imagine	Imagination	Imaginative
43.	Impress	Impression	Impressive
44.	Inspect	Inspection	–
45.	Insulate	Insulation	Insulating, Insulated
46.	Introduce	Introduction	Introductory
47.	Involve	Involvement	Involved
48.	Irrigate	Irrigation	–
49.	Lubricate	Lubrication	–
50.	Magnetize	Magnetism	Magnetic
51.	Manage	Management	Manageable

S.No.	Verb	Noun	Adjective
52.	Matter	Matter	Material
53.	Move	Movement, Motion	Movable
54.	Necessitate	Necessity	Necessary
55.	Observe	Observation	Observable
56.	Occupy	Occupation	Occupational
57.	–	Opacity	Opaque
58.	Penetrate	Penetration	Penetrable
59.	Perform	Performance	Performing
60.	Please	Pleasure	Pleasurable
61.	Pollute	Pollution	Polluted
62.	–	Possibility	Possible
63.	Prefer	Preference	Preferable
64.	Preserve	Preservation	Preservative
65.	Prevent	Prevention	Preventive
66.	–	Probability	Probable
67.	Produce	Production	Productive
68.	Pronounce	Pronunciation	Pronouncable
69.	Prove	Proof	–
70.	Purify	Purification	Pure
71.	Quicken	Quickness	Quick
72.	Recover	Recovery	Recoverable
73.	Refer	Reference	–
74.	Rely	Reliance	Reliable
75.	Remove	Removal	Removable
76.	Renounce	Renunciation	–
77.	Repel	Repulsion	Repulsive
78.	Repute	Reputation	Reputable
79.	Require	Requirement	Required
80.	Reserve	Reservation	Reserved
81.	Resist	Resistance	Resistible

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S.No.	Verb	Noun	Adjective
82.	See	Sight	Sighted
83.	Solve	Solution	Solvable
83.	Specialize	Speciality	Special
84.	Stabilize	Stabilisation	Stable
85.	Strengthen	Strength	Strong
86.	Submit	Submission	Submissive
87.	Suit	Suitability	Suitable
88.	—	Tradition	Traditional
89.	Transform	Transformation	Transformable
90.	Transmit	Transmission	—
91.	Treat	Treatment	Treated
92.	Vacate	Vacancy	Vacant
93.	Vary	Variation	Variable
94.	Verify	Verification	Verifiable
95.	Weaken	Weakness	Weak
96.	Withdraw	Withdrawal	Withdrawn
97.	Excite	Excitement	Exciting
98.	Value	Valuation	Valuable

S.No.	Noun	Adjective	Person concerned
1.	Geology	Geological	Geologist
2.	Chemistry	Chemical	Chemist
3.	Environment	Environmental	Environmentalist
4.	Genetics	Genetic	Geneticist
5.	Nature	Natural	Naturalist
6.	Ecology	Ecological	Ecologist
7.	Botany	Botanical	Botanist
8.	Sociology	Sociological	Sociologist
9.	Pathology	Pathological	Pathologist
10.	Technology	Technological	Technologist

S.No.	Nouns	Adjectives	Verbs	Adverbs
1.	Ability	Able	Enable	Ably
2.	Acceptance	Acceptable	Accept	Acceptably
3.	Activity	Active	Activate	Actively
4.	Addition	Additional	Add	Additionally
5.	Admiration	Admirable	Admire	Admirably
6.	Agreement	Agreeable	Agree	Agreeably
7.	Approval	Approving	Approved	Approvingly
8.	Attraction	Attractive	Attract	Attractively
9.	Collection	Collected, Collective	Collect	Collectively
10.	Comfort	Comfortable	Comfort	Comfortably
11.	Comparison	Comparable	Compare	Comparatively
12.	Completion	Complete	Complete	Completely
13.	Definition	Definite	Define	Definitely
14.	Enjoyment	Enjoyable	Enjoy	Enjoyably
15.	Equality	Equal	Equalise	Equally
16.	Excellence	Excellent	Excel	Excellently

Examples

I. Fill in the blanks with the appropriate forms of words.

Adjectives	Nouns	Opposite (nouns)
(a) Pure	<u>Purity</u>	<u>Impurity</u>
(b) <u>Normal</u>	<u>Normality</u>	Abnormality
(c) <u>Reliable</u>	Reliability	<u>Unreliability</u>
(d) <u>Destructive</u>	<u>Destructibility</u>	<u>Indestructibility</u>

II. Fill in the blanks in the table given below with the appropriate form of the word.

(Nov./Dec. 2003)

Verb	Noun	Adjective
(a) <u>Rely</u>	<u>Reliability</u>	Reliable
(b) <u>Stagnate</u>	Stagnation	<u>Stagnant</u>
(c) Generate	<u>Generation</u>	<u>Generative</u>
(d) <u>Restore</u>	<u>Restoration</u>	Restorative

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III. Fill in the blanks in the table given below with the appropriate form of the word:

(Apr./May 2004)

Verb	Noun	Adjective
a) <u>Maintain</u>	<u>Maintenance</u>	Maintainable
b) <u>Contaminate</u>	Contamination	<u>Contaminated</u>
c) Inform	<u>Informer</u>	<u>Informative</u>
d) <u>Motivate</u>	<u>Motivation</u>	Motivated

Do it Yourself

I. Fill in the blank spaces in the box with the appropriate forms of the word.

1. Verb	Noun	Adjective	
(a) Destroy	Destruction	–	(Apr.'94, Apr.'97)
(b) Rely	–	Reliable	(Apr.'94, Apr.'97)
(c) Solve	–	Solvable	(Apr.'94, Apr.'95)
			(Apr.'96, Apr.'97, Oct.'98)
(d) Derivation	Derivative–		(Apr.'95, Apr.'96, Apr.'97, Nov.'96).
2.			
(a) Pollute	Pollution	–	(Nov.'94, Apr.'97)
(b) Excite	–	Exciting	(Nov.'94)
(c) Require	–	Required	(Nov.'94, Apr.'95, Apr.'97)
(d) Valuation	Valuable	–	(Nov.'94)
3.			
(a) Recover	Recovery	–	(Apr.'95, Oct.'96, Oct.'98, Apr.'97, Apr.'96)
(b) Generate	–	–	(Apr.'95, Apr.'96, Apr.'97, Nov.'96)
(c) Develop	Development	–	(Apr.'95, Oct.'96, Nov.'96, Apr.'96)
(d) Depletion	Depleted	–	(Apr.'95)
4.			
(a) Verify	Verification	–	(Apr.'97, Oct.'98, Nov.'96)
(b) Produce	Production	–	(Oct.'97, Oct.'98, Nov.'96, Apr.'97)
(c) Prevent	Prevention	–	(Oct.'97, Nov.'96)
(d) Converge	–	Convergent	(Oct.'97, Nov.'96)

5.	(i) Dispose	—	Disposable	(Oct.'98, Apr.'97)
	(ii) Act	Action	—	(Oct.'98, Nov.'96)
	(iii) Penetrate	Penetration	—	(Apr.'97)
	(iv) —	Calculation	Calculable	(Apr.'96)
6.	(a) Prefer	Preference	—	(Nov.'96)
	(b) Consider	Consideration	—	(Nov.'96)
	(c) Compare	—	Comparable	(Nov.'96)
	(d) —	Explosion	Explosive	(Nov.'96)
7.	(a) Corrode	Corrosion	—	(Apr.'97)
	(b) Stabilize	—	Stable	(Apr.'97)
	(c) —	Quickness	Quick	(Nov.'96)
8.	Noun	Adjective	Person concerned	
	(a) Environment	—	—	(Apr.'95, Apr.'96)
	(b) Nature	—	—	(Apr.'95, Apr.'96)
	(c) —	Ecological	—	(Apr.'96)
	(d) —	—	Geneticist	(May 2002)
	(e) —	Geological	—	(May 2002)
	(f) Chemistry	—	—	(May 2002)
	(g) Technology	—	—	(May 2003)
	(h) —	Sociological	—	(May 2003)
	(i) —	—	Botanist	(May 2003)
	(j) Pathology	—	—	(May 2003)

II. Fill in the blanks in the table given below with the appropriate form of the word.

Verb	Noun	Adjective
(a) Weaken		
(b) Submission		
(c) Variable		
(d) Remove		

III. Fill in the blanks in the table given below with the appropriate form of the word.

Verb	Noun	Adjective
(a) Transformation		
(b) Pronounce		
(c) Explosive		
(d) Value		

66 English for Engineers**IV. Fill in the blanks in the table given below with the appropriate form of the word.**

Verb	Noun	Adjective
(a) Imaginative		
(b) Define		
(c) Vacant		
(d) Strengthen		

V. Fill in the blanks in the table given below with the appropriate form of the word.

Verb	Noun	Adjective
(a) Resistible		
(b) Suit		
(c) Reputation		
(d) Beautiful		

CHAPTER



Active and Passive Voice

Compare the following sentences:

Sita helps Lakshmi.

Lakshmi is helped by Sita.

In the first sentence the verb is in the active voice. In the second sentence the verb is in the passive voice.

A verb is in the *active* voice when its form shows (as in sentence 1) that the person or thing denoted by the subject does something; or, in other words, is the doer of the action.

A verb is in the *passive* voice when its form shows (as in sentence 2) that something is done to the person or thing denoted by the subject.

Pronouns

<i>Subject</i>	<i>Object</i>
I	Me
We	Us
You	You
He	Him
She	Her
It	It
They	Them

Important Rules

1. The tense form of the verb should not change. If in the Active Voice the Verb is in the Present Tense, in the Passive Voice also the Verb is in the Present Tense. If the verb in the Active Voice is in the Past Tense, in the Passive Voice also the Verb is in the Past Tense.
2. If in the Active Voice, the Verb is in the Present Tense, in the Passive Voice, the Verb = am, is, are. I am, He is, They are. (is = singular, are = plural)
3. If in the Active Voice the verb is in the Past Tense, in the Passive Voice, the verb = was or were. (was = singular, were = plural)
4. The Verb must agree with the Subject in person and number.

Person:	First Person Singular	:	I am or I was
	First Person Plural	:	We are or We were
	Second Person	:	You are or you were
	Third Person Singular	:	He is or he was
			She is or she was
			It is or it was
	Third Person Plural	:	They are or They were

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Number: If the subject is singular, the verb is singular. If the subject is plural, the verb is plural.

5. To get the Subject 'S' ask the question 'who' before the verb.
6. To get the object 'O' ask the question 'what' or 'whom' after the verb; 'What' for things and 'Whom' for persons.
7. To get O.W. (other words) ask the question when, where or how.
 'when' for time
 'where' for place
 'how' for manner

Rule I

Active Voice = S + V + O + O.W.

Passive Voice = O + V + Past Participle + by + S + O.W.

(S = Subject, V = Verb, O = Object, O.W. = Other Words)

Examples

1. Children play games.
Games are played by children.
2. I know you.
You are known to me.
3. A policeman caught the thief.
The thief was caught by a policeman.
4. They bought the car only last month.
The car was bought by them only last month.

EXERCISE I

Change the following sentences from the active voice to the passive voice.

1. She learnt German.
2. My sister painted that picture.
3. His friend laughed at him.
4. We expect good news. ('news' is always singular)
5. The people welcomed the Chief Minister.
6. He teaches English.
7. The gardener prepared the soil.
8. He made a very remarkable discovery.
9. Columbus discovered America.
10. Little strokes fell great oaks. (fell-felled-felled)
11. The Egyptians knew the art of jewellery making as early as 3000 B.C. (Apr./ May 2004)
12. In ancient India too, skilled artisans made exquisite gold ornaments.
13. The nations of the world accept gold as a medium of international exchange. (Oct.'95, Oct.'96)
14. We do not use gold for coinage nowadays.
15. The Greeks developed the art of coin-making to a high degree of skill. (Dec. 2001)

16. Gold possesses two properties.
17. Welders normally prefer a vee-shaped weld. (Nov.'96)
18. We pass an electric current across the electrodes. (Apr.'97)
19. Multinational companies make huge investments in oil-rich countries. (Apr./May 2003)
20. We use radiation measuring instruments to monitor radiation levels. (Nov./Dec. 2003)

Note: Please = I request you

Active Voice : Please come early.

Passive Voice : You are requested to come early.

Passive to Active

Passive Voice : O + V + Past Participle + by + S + (O.W.)

Active Voice : S + V + O + (O.W.)

Examples:

1. A letter was written by him.
He wrote a letter.
2. Good English is spoken by him.
He speaks good English.

EXERCISE II

Change the following sentences from the passive voice to the active voice.

1. The first railway was built by George Stephenson.
2. The trees were blown down by the wind.
3. The child was knocked down by a car.
4. The first prize was won by my sister.
5. The King was welcomed by the people.
6. A joint news conference on various issues was cancelled by the White House.
7. *Shakuntala* was written by Kalidas.
8. He was taken to the hospital by his friends.
9. Honey is made by bees.
10. The telephone was invented by Alexander Graham Bell.

Rule II

Active Voice : S + can, could etc. + Vb (Present) + O + O.W.

Passive Voice : O + can, could etc. + be + Past Participle + by + S + O.W.

Examples

1. She can drive a car.
A car can be driven by her.
2. They may buy that house.
That house may be bought by them.
3. You should do your duty.
Your duty should be done by you.

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EXERCISE III

Put the following sentences into the passive voice.

1. We must listen to his words.
2. A very small quantity of nuclear fuel can produce enormous amount of energy. (Nov. /Dec.2002)
3. The rural people can use the dual-purpose bicycle to power small scale agricultural implements. (Apr.'96)
4. We can store the water in the tanks. (Apr.'96)
5. We can use coal to produce detergents, explosives and paints. (May 2003)
6. It is also ductile; this means that we can draw it out into a wire. (Dec.2001)
7. We can pass an electric current across the electrodes. (Apr.'97)
8. Users can maintain this pump themselves. (Nov. / Dec. 2003)
9. This will prevent metal surfaces from coming into contact. (Apr. / May 04)
10. Teachers can best sow the seed for any type of behaviour at a tender age. (Jan. 2005)

Rule III

Active Voice : V + O + (O.W.)

Passive Voice : Let + O + be + Past Participle + O.W.

Examples

1. Do this work.
Let this work be done.
2. Shut the window.
Let the window be shut.
3. Speak the truth.
Let the truth be spoken.

EXERCISE IV

Put the following sentences into the passive voice.

1. Answer these questions now itself.
2. Do not insult the weak.
3. Summon the fire-brigade.
4. Shun the broad path.
5. Pay that bill today.
6. Subject him to a severe examination.
7. Open the door.
8. Call him tomorrow.

Rule IV

Active Voice : - ing

Passive Voice : being

Active Voice : S + V + (V+ing) + O + O.W.

Passive Voice : O + V + being + Past Participle + by + S + O.W.

Examples

1. She is singing songs.
Songs are being sung by her.
2. Sita is buying a car.
A car is being bought by Sita.
3. He was writing letters.
Letters were being written by him.

EXERCISE V**Change from the active voice to the passive voice.**

1. I am watching you very carefully.
2. John is writing essays.
3. The mason is building the wall.
4. Some boys were helping the wounded man.
5. Iceland is making plans to become the world's first hydrogen-powered economy. (Apr. '98)

Rule V

Active Voice : S + has, have, had + Past Participle + O + O.W.

Passive Voice : O + has, have, had + been + Past Participle + by + S + O.W.

Examples

1. He has bought a house.
A house has been bought by him.
2. They have done it.
It has been done by them.
3. He had written a letter.
A letter had been written by him.

EXERCISE VI**Change the following sentences into the passive voice.**

1. They have built a new bridge across the river.
2. They have announced our results.
3. Ants have eaten the cakes.
4. They have appointed the senior most lecturer as Principal.
5. Somebody has put out the light.

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6. The English Electric Co. of India has recently introduced two Residual Current Devices. (Apr.'97)
7. Indian Airlines has introduced the automatic printing of tickets in major cities. (Nov./Dec.2002)
8. A team of Canadian students from Ontario, has set a new world record for the longest distance travelled in a solar-powered vehicle.
9. The company has introduced several innovations in the design of the latest automobile. (Apr.'96)
10. Many faults have been ascribed to dams by people (into active) (Jan. 2005)

Rule VI

Active Voice : = ? Who = By whom?

Passive Voice : = ?

Examples

1. Who wrote this letter?
By whom was this letter written?
2. Who told you?
By whom were you told?
3. Who teaches you English?
(i) By whom are you taught English?
(ii) By whom is English taught to you?
4. How can you do it?
How can it be done by you?

EXERCISE VII

Change from the active voice to the passive voice.

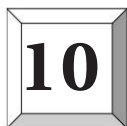
1. How can we solve this problem?
2. Why did you do it?
3. Can you do it?
4. Shall I ever forget those happy days?
5. Why did your brother write such a letter?
6. Who did this?
7. Have you answered all the questions?
8. Will you buy that picture?
9. When did the scientists launch the first India-made satellite? (Apr.'94)

EXERCISE VIII

Put the verbs in the passive.

1. It _____ (seal) totally from external contamination.
2. It _____ (manufacture) easily by small units in India.
3. Currently it _____ (consider) the ideal solution.
4. The pump can _____ (motorise).
5. This pump can _____ (maintain) by the users themselves.
6. The faults in pumps may not always _____ (cause) by substandard materials.

CHAPTER



Impersonal Passive Voice (Impersonal Passive Statements)

In the Impersonal passive voice the agent (with 'by') is omitted.

Rule I

Active Voice : Subject + Verb + Object + Other words

Passive Voice : Object + Verb + Past Participle + Other words

Examples

1. They sell radios here.
Radios are sold here.
2. They opened the theatre only last week.
The theatre was opened only last week.

EXERCISE I

Change into impersonal passive statements.

1. They constructed this house forty years ago. (Nov.'99)
2. We call these supports bearings. (Apr.'99)
3. We boil a little water in a tin can until the steam fills the can. (Nov.'98)
4. I took 20 ml. of the solution in a test tube. (Apr.'98)
5. The lorry carries the load to the factory.
6. He lubricated the ball-bearing.
7. Doctors use a clinical thermometer to measure body temperature.
8. They pass the gas through a water container.
9. We keep the cash in the box.
10. We clamp the two metal plates together. (Oct.'97, Nov.'96)
11. Coal miners produce millions of tons of coal every week.
12. Welders normally prefer a vee-shaped weld.
13. The country does not produce any heavy industrial machinery.
14. They made expeditions into the middle and west of the country, often under the most difficult conditions. (Apr. 2001)
15. We use the community-type hybrid solar cooker for cooking a large quantity of food. (Apr.'95)

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Rule II

A.V. = S + can + Verb (Present Tense) + Object + other words

could
shall
should, etc.

P.V. = O + can be + Past Participle + O.W.
could be + Past Participle

Examples

1. We can do this work now itself.
This work can be done now itself.
2. They may construct a bridge across the river.
A bridge may be constructed across the river.

EXERCISE II

Change into impersonal passive statements.

1. A skilled operator can carry out many operations on the lathe. (M.Q.P., Apr. 2001)
2. You must take care not to damage the machinery. (M.Q.P., Apr. '94, Apr. '96, Apr. '97, Oct. '98)
3. You can lubricate low-speed bearings with grease. (Apr. 2000)
4. You may generate heat for welding in several ways. (Apr. 2000)
5. This will prevent damage to the shaft. (Nov. '99)
6. We can generate heat for welding in many ways. (Apr. '97, Apr. '98)
7. We can cast this type of metal into very complicated shapes. (Apr. 2000, Apr. 2001)
8. A lathe can cut screws.
9. The students must take care not to damage the spanner.
10. We must listen to his words.

(These sentences are taken from A.J. Herbert's *The Structure of Technical English*, Pages 28-29)

Rule III

Active Voice : S + has + P.P. + O + O.W.
have + P.P. + O + O.W.
had + P.P.

Passive Voice : O + has been + P.P. + O.W.
have been + P.P.
had been + P.P.

Examples

1. They have announced the results.
The results have been announced.
2. They have bought a car.
A car has been bought.
3. He had informed his friend.
His friend had been informed.

EXERCISE III**Change into impersonal passive statements.**

1. The operator has set right the malfunctions of the telephone. (Apr. 2000)
2. They have made a mistake in passing these orders. (Nov. '99)
3. The police have arrested yet another fraudulent finance company proprietor. (Apr. '99)
4. They have installed a new computing machine in the accounts section.
5. They have successfully performed the operation.
6. The new manager has called for quotations.
7. They have increased the rate of interest.
8. They had exhausted the supply of wine. (Apr. 2001)
9. The writer has focussed attention on the emerging trends of technology. (M.Q. P., 2001)
10. We have introduced several innovations in the design of the latest automobile. (Nov. '94)

Rule IV

A. V. =ing, P. V.= being

Active Voice : S + V+ (V + ing) + O + O.W.

Passive Voice : O + V + being + P.P. + O.W.

Examples

1. They are conducting tests.
Tests are being conducted.
2. He is answering questions.
Questions are being answered.
3. She was typing letters.
Letters were being typed.

EXERCISE IV**Change into impersonal passive statements.**

1. They are constructing a new bridge across the river. (Apr. '99)
2. They are closing the inlet port.
3. We are making an efficiency test.
4. They are testing the new machine.
5. In this day and age, the computer is finding more applications than were ever conceived possible. (M.Q.P., 2001)

Rule V

Active Voice V+ O + O.W.

Passive Voice Let + O + be + P.P + O.W.

Examples

1. Open the door.
Let the door be opened.
2. Inform him.
Let him be informed.

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EXERCISE V

Change into impersonal passive statements.

1. Take the temperature.
2. Find out the expansion of the metal.
3. Increase the temperature.
4. Calculate the rate of change of momentum.
5. Take care not to damage the machines. (Apr. 2001)

Rule VI

Active Voice ?

Passive Voice ?

Examples

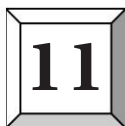
1. How can you do this ?
How can this be done ?
2. Why did you change the plug ?
Why was the plug changed ?

EXERCISE VI

Change into impersonal passive forms.

1. How can you do it ?
2. Why did you do it ?
3. Will they sell their car ?
4. Should you see this film ?
5. Did you inform him ?
6. Have you posted the letters ?

CHAPTER



Definitions of Common Scientific Terms

1. **Abacus** a frame with beads sliding back and forth on wires for doing arithmetic sums.
2. **Accelerator** a device for increasing speed, especially the pedal in a vehicle that controls the speed of the engine.
3. **Access time** the time taken to obtain information stored in a computer.
4. **Accumulator** a temporary storage device used in a microprocessor.
5. **Acid** any of the class of substances containing hydrogen that can be replaced by a metal to form a salt. Acids are usually sour and can often destroy things they touch.
6. **Address bus** a set of wires used to transmit the address.
7. **Aerodrome** a small airport used mainly by private aircraft. (Refers to the physical facilities for the air base).
8. **Aerodynamics** the science dealing with the forces acting on solid bodies, e.g. Aircraft or bullets moving through air.
9. **Aeronautics** the scientific study or practice of constructing and flying aircraft.
10. **Air brake** a brake, e.g. For a bus or train worked by air pressure (operated by the compressed air on a piston).
11. **Aircondition** a system that cools and dries the air in a room or building. (A method of filtering air and regulating its humidity and temperature in a room or building).
12. **Airconditioner** an air-conditioning machine that cools and dries the air in a room or building.
13. **Aircraft** any machine or structure that can fly in the air and carry goods or passengers.
14. **Airport** a large area where aircraft land and take off, usually with facilities for passengers and goods, and customs.
15. **Air pump** a machine for removing or compressing air. (a device for pumping air into or out of something)
16. **Algorithm** a set of rules or procedures that must be followed in solving a particular problem.
17. **Alloy** a metal formed by a mixture of metals or of metal and another substance. eg., Brass is an alloy of copper and zinc.
18. **Ammeter** it is an instrument to measure current.
19. **Amplifier** a device for amplifying or increasing something, especially sounds or radio signals.
20. **Analog channel** a communication plate used for transmitting and receiving continuously varying electrical signals.
21. **Angle** the amount of distance between the directions of two lines or surfaces where they meet; a line, direction of movement, etc., considered in relation to the ground.

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22. **Anode** the positive terminal of a device.
23. **Anvil** an iron block on which a blacksmith puts hot pieces of metal before hammering them into shape.
24. **Antennae** an arrangement of wires, metal rods used in sending and receiving electromagnetic signals.
25. **Assembly language** a low level programming language in which mnemonics are used to code operations and alphanumeric symbols for address.
26. **Asynchronous communication** communication between units operating independently.
27. **Atmosphere** the mixture of gases that surround the earth.
28. **Audio cassette tape** a device to hear the recorded voice of a person, an instrument.
29. **Auditorium** the part of a theatre, concert hall, etc., in which the audience sits.
30. **Autorickshaw** a covered motor vehicle with three wheels, a driver's seat in front and a seat for passengers at the back.
31. **Ballpen hammer** it is a tool consisting of a metal head and handle used for pounding.
32. **Barometer** an instrument for measuring air pressure, used especially for forecasting the weather.
33. **Batch operating system** a system programme facilitating execution of a series of user programmes without any manual intervention.
34. **Bearing** a device that allows part of a machine to turn smoothly.
35. **Biogas plant** the machinery, equipment, etc., for manufacturing gas from animal waste and used for commercial purposes or in homes.
36. **Bit** a binary digit which is either 0 or 1; the most basic unit of information in a computer.
37. **Boiler** a metal container in which water is heated, e.g., to produce steam in an engine.
38. **Brake** a device for slowing or stopping a car, bicycle, train, etc.
39. **Bridge** a structure of wood, iron, concrete, etc., built to provide a way across a river, road, railway, etc.
40. **Bus** a set of wires carrying a group of bits in parallel and has an associated control scheme.
41. **Byte** a group of eight bits used to represent characters.
42. **Bulb** the glass part of an electric lamp that gives light.
43. **Cache memory** a small high speed memory used to temporarily store portion of a programme for the main memory.
44. **Calculator** a small electronic device for performing calculations with numbers.
45. **Camera** an apparatus for taking photographs, moving pictures or television pictures.
46. **Camcorder** a camera which records moving pictures and sound.
47. **Capacitor** it is an energy storing device.
48. **Carburettor** an apparatus in a petrol engine, especially in a motor vehicle. Petrol and air are mixed together in a carburettor to make the explosive gas which provides power.
49. **Cassette** a case that contains a magnetic tape for use in a tape recorder.
50. **Catalyst** a substance that makes a chemical reaction happen faster without changing itself.
51. **Cathode** the negative terminal of a device.

52. **Chip** a small piece of silicon in a computer, with electronic circuits for storing information or performing complicated logical operations.
53. **Circle** a round space enclosed by a curved line, every point on the line being the same distance from the centre.
54. **Circuit** an apparatus through which an electric current flows.
55. **Code** a system of words, letters, symbols, etc., that represent others, used for secret messages or for presenting or recording information briefly.
56. **Compass** a device for finding direction, with a needle that always points to the north.
57. **Compiler** a system programme to translate a high level language programme to machine language.
58. **Computer** an electronic device for storing and analysing information fed into it, for calculating, or for controlling machinery automatically.
59. **Computer graphics** concerned with picture generation, manipulation and display by a computer.
60. **Computer programme** a computer programme is a set of instructions which tells a computer what to do.
61. **Computer virus** a hidden code within a computer program intended to cause errors and destroy stored information.
62. **Concrete** building material made by mixing cement with sand, small stones and water.
63. **Control unit** it controls the operations of all the units of a computer.
64. **Cooker** an appliance for cooking, consisting of an oven, a heating furnace and often also a grill. Most cookers use gas or electricity for producing heat.
65. **Coolant** a liquid that is used for cooling an engine, a nuclear reactor, etc.
66. **CPU** Central Processing Unit. It is the heart of the computer that executes all the instructions given to it.
67. **Cylinder** the hollow part inside which the piston moves in an engine.
68. **Dam** a barrier made of concrete, earth, etc., built across a river to hold back the water and form a reservoir to prevent flooding, etc.
69. **Disk** a circular plate on which data can be recorded in a form that can be used by a computer.
70. **Distillation** it is a process of separating more volatile substance from less volatile by heating the mixture.
71. **Domestic pump** A machine for forcing water from a well through a pipe.
72. **Dual purpose bicycle** It is a bicycle serving two purposes. It can be used both as a vehicle for transportation and as a prime mover.
73. **Earth** a wire that provides a connection with the ground and completes an electrical circuit.
74. **An electric fuse** (in an electrical circuit) a short piece of wire that melts and breaks the circuit if the current goes above a safe level.
75. **Electronics** the branch of science and technology that deals with the behaviour of electric currents in electronic equipment.
76. **Expedition** an organised journey or voyage for a particular purpose especially scientific research, exploration or war.
77. **Factory** a building or group of buildings where goods are manufactured or assembled.
78. **Fan** a device with blades that are operated mechanically to create a current of cool air.

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79. **Fax machine** a device for sending a copy of a document, an illustration, etc., by an electronic system using telephone lines.
80. **Fibre optics cable** made of glass fibres to transmit light signals.
81. **Flash light** a device that produces a brief bright light for taking photographs in indoors or in poor light.
82. **Floppy or Diskette or Disk** a flexible disk for recording and storing data in a form that the computer can read. It is an auxiliary device of a computer.
83. **Flow chart** a diagram showing the development of something through different stages or processes.
84. **Flutter** the rapid variation in pitch or volume of recorded sound.
85. **Flux** the rate of flow of energy over a surface.
86. **Food processor** a machine that slices, mashes, blends, etc.
87. **Gear** a set of wheels with teeth on their edges that revolve together to transmit power from a vehicle's engine to its round wheels; a degree of speed or efficiency.
88. **Generator** a machine for producing electrical energy.
89. **Genetics** the scientific study of the ways in which different characteristics are passed from one generation of living things to the next.
90. **Gober gas plant** a simple apparatus used for turning animal wastes into biogas plus nitrogen fertiliser.
91. **Gold** a precious yellow metal used for making coins, ornaments, jewellery, etc.
92. **Hammer** a tool with a heavy metal head used for breaking things or hitting nails.
93. **Hardware** the mechanical and electronic parts of a computer.
94. **Helicopter** a type of aircraft with large revolving blades but no wings. It can take-off and land in a very small area, and remain in one position in the air.
95. **High technology** it is advanced development in technology, especially in electronics. It is a sophisticated and complex use of machinery by replacing labour to increase production whose use is realised in capital goods industries.
96. **Ice axe** an implement used by people climbing mountains for cutting steps, etc., in ice.
97. **Icon** a small symbol on a computer screen representing a programme that a user may choose.
98. **Immersion water heater** an electric heater fitted inside a domestic water tank to provide hot water for use in homes.
99. **Induction motor** it is a prime mover to supply mechanical energy and it is run by three/single phase AC supply.
100. **Industry** any large scale manufacturing enterprise.
101. **Interface logic** electronic circuit used to interconnect I/O devices to CPU or 86 memory.
102. **Joystick** a stick on a spherical ball moving in a socket used to move the cursor.
103. **Laboratory** a room or building used for scientific research, experiments, testing, etc.
104. **Laser technology** technology of producing a beam of radiation by a device that finds innumerable applications, in communications, engineering, science and medicine.
105. **Lathe** a machine that shapes pieces of wood, metal, etc., by holding and turning them against a fixed cutting tool.
106. **Limestone** a type of white rock, containing calcium, used as a building material and in making cement.

107. **Lubricant** a liquid substance used for moving a machine easily and smoothly.
108. **Map** a representation on paper of the earth's surface or part of it, showing countries, rivers, mountains, oceans, roads, etc.
109. **Mathematics** the science of numbers, quantity and space. Arithmetic, algebra, trigonometry and geometry are some of the branches of mathematics.
110. **Mercury** a chemical element. Mercury is a metal, silver in colour, often found in liquid form and used in thermometers.
111. **Micro computer** a small computer wherein the memory capacity is comparatively less.
112. **Micro film** a film on which extremely small photographs are stored, especially of documents or newspapers.
113. **Microphone** an instrument that changes sound waves into electrical current. It is used for recording or broadcasting speech, music, etc.
114. **Microprocessor** a very small computer, or a unit of one, consisting of one or more microchips.
115. **Microscope** an instrument for making very small objects appear large, especially for scientific study.
116. **Modem** a device linking a computer system for example, a telephone line, through which data can be transmitted at high speeds from one computer to another.
117. **Moderators** a device where the audio frequency and radio frequency signals are moderated.
118. **Moon** the natural body that moves round the earth every 28 days and shines at night by light reflected from the sun; a body that moves round a planet other than the earth.
119. **Multinational company** a company, especially a very large one, that does business in many different countries.
120. **Nozzle** a piece at the end of a pipe or tube, with a narrow opening in it, through which a stream of air or liquid is directed.
121. **Nuclear reactor** a device meant for the production of nuclear energy.
122. **Oscillator** an instrument for producing electrical oscillations.
123. **Padlock** a type of lock with a loop at one side that is opened with a key. It is used for fastening things, eg. two ends of a chain, together.
124. **Parachute** a device attached to people or objects to make them fall slowly and safely when dropped from an aircraft. It consists of a large folded piece of cloth, attached by strings to the person or object, which opens out in the air to form an umbrella shape above them it.
125. **Patent** an official document giving the holder the sole right to make, use or sell an invention and preventing others from copying it.
126. **Petrol** a liquid obtained by refining petroleum, used as fuel in car engines, etc.
127. **Petroleum** mineral oil that forms under the ground or the sea and is extracted through holes bored beneath it. Petroleum is refined to produce petrol, paraffin, diesel oil, etc.
128. **Photocopier** a machine used for making photocopies.
129. **Picnic** a short pleasure trip with packed meal taken to be eaten out of doors.
130. **Pilgrimage** a journey made by a pilgrim; a journey to a place associated with somebody something that one respects.

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131. **Piston** a round plate or short cylinder, usually of metal, that fits closely inside a tube and moves up and down or backwards and forwards inside it. It is used, for example, in engines to cause other parts to move by means of a rod connecting it to them.
132. **Planet** any of the bodies in space that move around a star (such as the sun) and receive light from it.
133. **Plug** a plastic or rubber device with metal pins that fit into holes in a socket to make an electrical connection.
134. **Potential divider** an arrangement meant for getting variable output voltage.
135. **Potentiometer** an instrument to measure the potential difference.
136. **Pressure cooker** a strong metal pot with a tight lid in which food can be cooked quickly by steam under high pressure.
137. **Printer** a machine for printing text onto paper, especially one linked to a computer.
138. **Program** a series of instructions in code that control the operations of a computer.
139. **Propeller** a device with two or more blades fixed to a revolving rod for propelling a ship or an aircraft.
140. **Protractor** an instrument usually in the form of a semi-circle with degrees (0° to 180°) marked on it, used for measuring and drawing angles.
141. **Projector** an apparatus for projecting photographs or films onto a screen.
142. **Radar** a system for finding out the position and movement of solid objects, especially aircraft and ships, when they cannot be seen, by sending out short radio waves which they reflect.
143. **Radiator** a device for cooling the engine of a vehicle or an aircraft.
144. **Reactor** an apparatus for the controlled production of nuclear energy.
145. **Register** a range of human voice or a musical instrument.
146. **Regulator** a device that regulates (controls) something.
147. **Reservoir** a natural or artificial lake used as a source or store of water for a town, etc.
148. **Resistor** a device for providing resistance to electric current in a circuit.
149. **Rheostat** a device for varying the resistance of an electric current.
150. **Rivet** a metal pin or bolt for fastening two pieces of leather, metal, etc., together, one end being hammered or pressed flat to prevent slipping.
151. **Robot** a machine that can perform the actions of a person and which operates automatically or is controlled by a computer.
152. **Satellite** an electronic device that is sent into space and moves round a planet.
153. **Scooter** a light motor vehicle, usually with small wheels, a low seat and a curved metal shield protecting the driver's legs.
154. **Screwdriver** a tool with a blade that fits into the head of a screw to turn it when driving it into place or removing it.
155. **Seismograph** an instrument for detecting earthquakes and for recording how strong they are and how long they last.
156. **Sensor** a device that detects light, heat, pressure, etc.
157. **Software** the data, programmes, etc., not forming part of a computer but used when operating it.

158. **Solar cell** a device that converts the energy of sunlight into electricity.
159. **Solar cooker** an appliance for cooking that uses solar (sun) energy.
160. **Solar water heater** a device for heating water using solar energy.
161. **Spanner** a tool for gripping and turning a nut on a screw.
162. **Spectrum** an image of a band of colours as seen in a rainbow, usually described as red, orange, yellow, green, blue, indigo and violet.
163. **Spring balance** It is an instrument meant for weighing different objects.
164. **Steam** the hot gas that water changes into when it boils.
165. **System software** a set of general programmes written for a computer.
166. **Telephone** a system of sending sound, especially the human voice, to a distance by wire or radio.
167. **Television set** a piece of electrical equipment with a glass screen which shows broadcast programmes with moving pictures and sounds.
168. **Thermometer** an instrument for measuring temperature.
169. **Thermostat** a device for regulating temperature automatically, e.g., in an oven or in central heating.
170. **Thyristor** It is otherwise called silicon controlled rectifier which is a power device.
171. **Telescope** an instrument shaped like a tube with lenses to make distant objects appear larger and nearer.
172. **Tour**
 - i. a journey for pleasure during which various places of interest are visited.
 - ii. a brief visit, to or through a place.
 - iii. an official series of visits for the purpose of playing matches, giving performances, etc.
173. **Triangle** a plane figure with three angles and three sides.
174. **Transducer** a device for producing an electrical impulse from another form of energy, e.g., pressure.
175. **Transistor** a small electronic device used in radios, televisions and similar appliances for controlling an electrical signal as it passes along a circuit.
176. **Transformer** an apparatus for increasing or reducing the voltage of an electric power supply, to allow a particular piece of electrical equipment to be used.
177. **T-square** having or forming a right angle, exactly or roughly; not curved.
178. **Turbine** a machine or motor driven by a wheel which is turned by a current of water, steam, air or gas.
179. **Typewriter** a machine for producing writing similar to print. The person using it presses keys which cause raised metal letters, etc., to strike the paper, usually through a ribbon treated with ink.
180. **Underdeveloped country** a country not having achieved a high level of economic development.
181. **UNIX** an operating system with 16 bit micro computers and mini computers.
182. **Uranium** a chemical element. Uranium is a heavy grey, radioactive metal used especially as a source of nuclear energy.
183. **Valve** a mechanical device for controlling the flow of air, liquid or gas, allowing it to move in one direction only.

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- | | |
|----------------------------|--|
| 184. Virtual memory | a hierarchy of two memory bits. |
| 185. Voltmeter | it is an instrument to measure the potential difference. |
| 186. Watch | a small instrument for showing the time worn on a strap on the wrist. |
| 187. Water heater | a device for heating water. |
| 188. Windmill | a mill worked by the action of wind on long projecting arms (sails) that turn on a central shaft. A similar tall thin structure used to change the power of the wind into electricity. |
| 189. Word Processor | a computer that records typed words, diagrams etc., and displays them on a screen, where they can be corrected or changed and then automatically printed. |
| 190. Workshop | a room or building in which machines etc., are made or repaired. |
| 191. Wrench | a kind of spanner that can be adjusted to grip and turn nuts of different sizes. |

Do it Yourself

Give the definitions for the following.

- | | |
|----------------------------|---|
| 1. Air-conditioner | (Apr. '97) |
| 2. Airport | (Apr. '97) |
| 3. Alloy | (Nov. '98) |
| 4. Ammeter | (Oct. '98, Apr. 2001) |
| 5. Audio-cassette tape | (Nov. '95) |
| 6. Auditorium | (Nov./Dec. 2002) |
| 7. Autorickshaw | (Nov. '97) |
| 8. Barometer | (Apr. '96, Nov. '99) |
| 9. Biogas plant | (Oct. '96) |
| 10. Calculator | (Nov. '94, Nov. '96, Apr. '97, Apr. '99, Apr./May 2003, Apr./May 04) |
| 11. Catalyst | (Apr. '97) |
| 12. Chip | (Apr. 2000) |
| 13. Circle | (Oct. '98) |
| 14. Code | (Apr. '94) |
| 15. Computer | (M.Q.P., Apr. '95, Apr. '96, Oct. '96, Apr. '97, Nov. '98, Oct. 2000) |
| 16. Computer programme | (Nov. '94, Nov. '96, Nov./Dec. 2002, Jan. 2005) |
| 17. Computer virus | (May 2003) |
| 18. Dam | (Oct. '98) |
| 19. A domestic pump | (Apr. '96) |
| 20. A dual purpose bicycle | (Apr. '96) |
| 21. An electric fuse | (Apr. '97) |
| 22. A fan | (Nov. '98) |
| 23. A flow chart | (Apr. '96, Apr. '98, Nov/Dec. 2003) |
| 24. Gobar gas plant | (Nov. '95, Nov. '97) |
| 25. Helicopter | (Oct. '98) |

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26. Immersion water heater	(Nov. '96)
27. Laboratory	(Apr. '95, Apr. '97)
28. Microprocessor	(Apr. '94, Apr. '98)
29. Microphone	(Apr./May 2004)
30. Microscope	(Apr. '99)
31. Moon	(Apr. '98)
32. Multinational company	(Nov. '95)
33. Nuclear reactor	(Apr. '96)
34. Petrol	(Nov. '96, Apr. '97, Oct. '97, Oct. 2000)
35. Petroleum	(Apr. '95, Apr. '97)
36. Program	(Apr. '98)
37. Pressure cooker	(Apr. '97)
38. Radiator	(Apr. '96, Oct. 2000)
39. Rheostat	(Nov. '96, Oct. '97)
40. Robot	(Nov. '94, Apr. '96, Oct. '96, Apr. '98, Nov./Dec. 2002, Jan. 2005)
41. Scooter	(Nov. '96, Apr. '97, Oct. '97)
42. Screw driver	(Apr. '98)
43. Sensor	(Nov. '94, Nov./Dec. 2003)
44. Spanner	(Apr. '94, Apr. '97)
45. Solar cooker	(Apr. '96)
46. Solar water heater	(Oct. '96)
47. Telephone	(M.Q.P., Apr. '96, Apr. '97, Nov. '97, Nov. '99)
48. Television set	(Nov. '96, Apr. '97, Apr. '98)
49. Thermometer	(Apr. '94, Apr. '96, Nov. '98)
50. Thermostat	(Apr. '96, Apr. '97)
51. Tour	(M.Q.P.)
52. Triangle	(Apr. '94, Apr. '96, Nov. '96, Apr. '97, Oct. '97, Oct. 2000)
53. T-square	(Apr. '97)
54. Typewriter	(Apr. '95, Nov. '96)
55. Underdeveloped country	(Nov. '95)
56. Watch	(M.Q.P., Apr. '96)
57. Water heater	(Apr. '96)
58. Windmill	(Apr. '97)
59. Workshop	(Nov. '96, Apr. '97)

CHAPTER

12

Tense Forms of Verbs

A *Verb* is a word or phrase indicating an action, an event or a state.

e.g. eat, run, exist, etc.

Examples

I *spea*k English.

We *play* games.

She *wrote* a letter.

They have *completed* the work.

I shall *meet* you tomorrow.

The tense forms of verbs are as follows:

1. Simple Present
2. Present Continuous
3. Present Perfect
4. Present Perfect Continuous
5. Simple Past
6. Past Continuous
7. Past Perfect
8. Past Perfect Continuous
9. Simple Future
10. Future Continuous
11. Future Perfect
12. Future Perfect Continuous

I. SIMPLE PRESENT TENSE

The simple present is used:

1. To express a habitual action as,
 - (a) He drinks tea every morning.
 - (b) My watch keeps good time.
 - (c) I go to college by bus.
 - (d) He comes here every evening.
2. To express general truths as,
 - (a) The sun rises in the east and sets in the west.
 - (b) Honesty is the best policy.
 - (c) The earth revolves round the sun.
 - (d) We see with our eyes.
 - (e) Birds fly but cattle don't.

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3. To express a situation that is permanent as,
 - (a) The Qutab Minar stands near Mehraub in New Delhi.
 - (b) Their house faces south.
 - (c) The path runs through the forest.
4. To indicate a future event that is part of a fixed programme or time table as,
 - (a) The match starts at 10 O'clock.
 - (b) The train leaves at 6:10.
 - (c) When does the college re-open?
 - (d) We leave for Singapore next week.
5. The following verbs (of perception, thinking, emotion, possession) are normally used in the simple present tense.

see	hear	smell	notice
recognise	appear	look	seem
want	wish	desire	feel
like	love	hate	hope
refuse	prefer	think	suppose
believe	agree	consider	trust
remember	forget	know	understand
imagine	mean	mind	own
possess	belong	contain	consist of

Examples

I see a train coming. (not 'I am seeing')
 I hear a strange noise in the next room.
 I smell something burning.
 I notice a change in her behaviour.
 He has a car.
 My uncle owns a mill.
 I have a sister.
 Do you recognise me?

EXERCISE I**Fill in the blanks with appropriate form of the verbs.**

1. In nature gold _____ (occur) in the metallic state. The extraction of gold _____ (be) a simple process. Most of the impurities _____ (remove) from the freshly mined metal by a simple physical process. (M.Q.P., Apr.'96)
2. The windows _____ (be) open. (M.Q.P.)
3. No one, except his closest friends _____ (support) him.
4. It is I who _____ (be) to blame. (M.Q.P.)
5. A magnet _____ (attract) iron filings. (Apr. '97, Nov. '96, Oct. '98)
6. Rice husk _____ (obtain) from rice mills. It _____ (produce) in such a large quantity that its disposal sometimes becomes a problem. When it _____ (sum) under controlled temperature in a furnace it _____ (leave) a residue in the form of a highly reactive ash. (Apr. '97, Oct. 2000, Oct. '97)
7. Before a house _____ (build) secure foundations _____ (lay). Simply because the foundations cannot _____ (see) by prospective buyers _____ (not mean) that they are not the most important part of the building. (Nov. '97, Apr. '98)

8. Gold _____ (be) important for another reason. The nations of the world _____ (accept) it as a medium of international exchange. (Apr. '98)
9. Raja _____ (go) to bed at 10 O'clock every night. (Apr. '98)
10. The earth _____ (behave) like a huge magnet. (Nov. '98)
11. Iron _____ (expand) when heated. (Apr. '99) (M.Q.P., 2001)
12. Living language, like currency _____ (exist) at two levels. (Apr. 2000)
13. Milk in this vessel _____ (smell) sour. (Oct. 2000)
14. An aluminium bush _____ (house) the bearing. (Apr. 2001)
15. The molten iron which comes from the furnace is _____ (cast) into pigs or ingots. (Apr. 2001)
16. A barometer _____ (need) to measure the atmospheric pressure. (M.Q.P. 2001)
17. _____ science fiction sometimes _____ (come) true? (Apr. '94)
18. During fission, radiation _____ (produce). This radiation _____ (to be) harmful even in small quantities. It _____ (attack) living tissues and it _____ (alter) the genes in body cells. (Apr.'95)
19. _____ (do) you like your present work? (Apr.'95)
20. (a) Most of the husk _____ (use) as fuel and livestock litter.
(b) When it is difficult to store, the husk _____ (burn). (Oct. '95, Oct. '97)
21. (a) Oil _____ (find) underground trapped in the rock layers.
(b) When petroleum engineers search for oil they _____ (look) for certain types of rock layers or strata.
(c) They also set off explosions in the ground and record the waves _____ (reflect) from the underground rock layers.
(d) This _____ (call) seismic surveying. (Oct. '96)
22. He always _____ (complain) about his health. (Apr. '98)
23. The valve _____ (control) the flow of steam. (Apr. '96)
24. Employees _____ (select) by organizations after an assessment of their skills. (Nov. '96)
25. Today dry cells of different sizes _____ (use) in transistor radios, calculators, portable tape recorders and torches. (Nov. '96)
26. He _____ (go) to bed at nine o'clock every night. (Nov. '96)

II. PRESENT CONTINUOUS TENSE

The present continuous form is

am + (v + ing)
is + (v + ing)
are + (v + ing)

Examples

I am doing my homework.

Mother is cooking food in the kitchen.

They are watching T.V.

The present continuous is used

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1. For an action going on at the time of speaking as,
She is singing. (now)
They are playing cricket.
2. For a temporary action which may not be actually happening at the time of speaking as,
I am writing a book. (but I am not writing at this moment)
I am reading *As You Like It*. (but I am not reading at this moment)
3. For an action that is planned or arranged to take place in the near future as,
I am leaving for Chennai tonight.
My brother is arriving tomorrow.

EXERCISE II

1. Now I _____ (write) the English Examination. (Apr.'97)
2. The boys _____ (play) outside at the moment.
3. My sister _____ (sit) in the garden and reading. (M.Q.P.)
4. I _____ (have) a bath at the moment; I cannot open the door.
5. Mother _____ (cook) some food in the kitchen at present.
6. Don't disturb me. I _____ (do) my home work.
7. What _____ you _____ (do) now? (Jan. 2005)
8. I _____ (go) now. Goodbye.
9. Please be quiet. I _____ (work)
10. Where _____ you _____ (go) now?

III. PRESENT PERFECT TENSE

Present Perfect: has + Past Participle: have + Past Participle

The present perfect is used

1. To indicate completed activities in the immediate past as,
She has just left.
It has just struck nine.
2. To express past actions whose time is not given and not definite; as,
I have been to Hyderabad.
She has passed the examination.
Have you read *As You Like It*?
3. To describe past events when we think more of their effect in the present than of the action itself as,
I have informed him.
She has sold all the books.
4. To denote an action beginning at some time in the past and continuing up to the present moment as,
They have lived here for five years.
I haven't seen Ashok for a long time.
She has been ill since last Monday.

The following adverbs (or adverb phrases) can be used with the present perfect: just, often, never, ever (in questions only), so far, till now, yet (in negatives and questions) already, since-phrases, for-phrases, today, this week, this month, etc.

Examples

He has just come.

I have often told him about it.

I have never seen such a film.

Have you ever been to London?

She has been absent since last Monday.

I have done a lot of work today.

The passive form is more common than the active form.

Additional Examples

Work has been started on the new system of motorways.

Various types of reactors have been designed for different purposes.

Engineers have encountered many problems with this material.

Work on the motorway has not been started yet.

Work on the motorway has already been completed.

The company has just developed a new type of aircraft.

EXERCISE III

1. He _____ just (return) from the U.S. (Nov. '98)
2. These experiments _____ (have) interesting results. (use present perfect) (Apr. '94)
3. Engineers _____ (encounter) many problems with this material. (use present perfect) (Apr. '94)
4. Research so far _____ (show) a possible connection between cancer and smoking. (Nov. '94)
5. No, he isn't here. He just _____ (go) out. (Apr. '98, Apr. '97)
6. Since ancient times gold _____ (catch) the imagination of man by its unique qualities. (Apr. '96)
7. Test borings so far _____ (indicate) the presence of large gas reserves. (in the present perfect tense) (Apr. '96)
8. I _____ (just, complete) first year B.E. (Nov. '96)
9. Test firings so far _____ (indicate) the accuracy of the missile. (Apr. '96)
10. Indian Airlines _____ (introduce) the automatic printing of tickets in major cities. (Apr. '97)
11. Magnets _____ (know) since ancient times.
The earth _____ (behave) like a magnet, and this fact _____ (make) possible the magnet compass. (Apr. '97)
12. The number of jobs _____ (increase) in the technology sector. (Apr. '97)
13. Indian banks _____ (become) very efficient. (Apr. '97)
14. Over the last fifty years, computers _____ (develop) dramatically. (Jan. 2005)

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IV. PRESENT PERFECT CONTINUOUS TENSE

Has been + (v +ing)

Have been + (v +ing)

Examples

He has been working in this college since 1990.

They have been living in this house since 1985.

The present perfect continuous is used for an action which began at sometime in the past and is still continuing; as,

Additional Examples

I have been waiting for you since 10 O'clock.

It has been raining since 2 O'clock.

I have been reading this book for 4 hours.

Exercise IV

- Selvi _____ (do) her home work since 6 O'clock. (Nov. '99)
- She _____ (work) here for the last three years.
- We _____ (study) English for two years.
- It _____ (rain) since early morning.
- I _____ (live) here since 1980.
- All day today heavy floods _____ (ravage) a number of states in the country. (Apr. '98)

V. SIMPLE PAST TENSE

Verbs like went, ate, wrote, spoke, and did, are in the simple past tense. The simple past is used to indicate an action completed in the past. It often occurs with adverbs or adverb phrases of past time.

Examples

I wrote a letter yesterday.

I met him this morning.

India became independent on 15th August, 1947.

She passed the examination last year.

He posted the letter last night.

I received his letter a week ago.

Columbus discovered America.

EXERCISE V**Fill in the blanks with appropriate form of the verbs.**

- Hardy _____ (show) a colleague Ramanujan's strange letter, which _____ (cram) with as many as 60 mathematical theorems and formulas _____ (state) without any proofs. It _____ (not take) them long to realise that Ramanujan was a genius. (Apr. '94)
- The Egyptians _____ (know) the art of jewellery making as early as 3000 B.C. In ancient India too skilled craftsmen _____ (make) exquisite gold ornaments. (Apr. '98)
- She _____ (go) abroad last month. (Apr. '98)
- On the farms, the hens _____ (brood), but no chicks hatched.
 - The farmers complained that they _____ (are) unable to raise.
 - The apple trees _____ (come) into bloom but no bees droned away the blossoms.
 - So there was no pollination in the apple trees and there _____ (will) no fruit. (Apr. '96)

5. In 1715, off the coast of Florida, a convoy of Spanish ships _____ (strike) by a storm. Some of the ships _____ (sink) and nearly a thousand people _____ (die). Eighteen years later, a storm struck another convoy which _____ (set out) from Havana only a couple of days before. (Oct. '96)
6. He _____ (go) abroad last week. (Oct. '97)
7. The design for the Calcutta Metro projects track _____ (finalise) in consultation with the Railway's design organisation at Lucknow. The technical know-how for the assembly _____ (base) on the Budapest Metro and also the U.K. practice. Different layouts _____ (try) out and in all of them grooved rubber pads between rail and sleeper, and sleeper and concrete bed _____ (fix). (Apr. '96)
8. In 1917 Indian Airlines _____ (acquire) one more IBM 1401 system. (Apr. '97)
9. Last year Indian Airlines _____ (arrange) for provision of data on a day-to-day basis. (Apr. '97)
10. I _____ (be) an employee of the Central Government. I _____ (start) my career in Bombay in 1955. In 1970 I _____ (get) a transfer to Calcutta. Now I _____ (work) in Chennai. (M.Q.P.)
11. Kamala _____ (be) a teacher. In 1970 she _____ (start) her career in Sri Lanka. She _____ (migrate) to India in 1995. Presently she _____ (work) in Delhi. (Nov./Dec. 2002)
12. Rajesh _____ (work) as a farmer in a village near Salem till June 1990. In July 1990, he _____ (change) his profession. After the change he _____ (migrate) to Chennai and through hard work he became rich. At present, he _____ (be) the owner of two factories in the city. (Apr./May 2003)
13. Sir Benjamin Baker _____ (be) a British civil engineer. He _____ (be) an expert in bridges. Before the age of twenty he _____ (learn) all about steel and iron. A practical man, he never _____ (leave) anything to chance. He _____ (insist) on carrying out exact tests on every piece of steel or iron. He _____ (write) a book about cantilever bridges. He _____ (win) a reputation for brilliance in the engineering profession. He _____ (help) in building new underground railways in London. He _____ (build) the famous Aswan Dam in Egypt.
14. Over the last forty years computers _____ (develop) dramatically. The first computers _____ (can do) relatively few calculations a second, whereas the present mainframe can carry out many instructions per second. In the past only highly _____ (train) computer experts _____ (are) able to use computers. (Apr. '96)
15. Magnets _____ (know) since classical times; their name _____ (derive) from Magnus in Greece, when magnet stones _____ (find) at one time. (Apr. '96)

VI. PAST CONTINUOUS TENSE

Past Continuous = was / were + (v+ing)

The past continuous is used to denote an action going on at some time in the past. The time of the action may or may not be indicated.

Examples

It was getting late.

They were playing cricket.

When I met him, he was watching T.V.

While he was crossing the road, he was run over by a lorry.

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EXERCISE VI

1. What _____ (you/do) at 2 O'clock this morning?
2. When the phone rang, he _____ (read).
3. He _____ (read) a newspaper when I went to see him. (Oct. 2000)
4. While she _____ (drive) to her office, she saw an accident. (Apr.'97)
5. a) What _____ you _____ earlier? (do)
(b) I _____ the lands which I own in my village. (plough) (Apr. '95)
6. Yesterday the students _____ (clean) the campus between 2 p.m. and 4 p.m. (use past continuous tense). (Apr.'96)
7. As the pilot _____ (prepare) for touch-down, the air traffic controller _____ (tell) him that the runway was blocked. (Apr. '96)
8. The worker _____ operate the lathe continuously for four hours last week. (use past continuous tense) (Apr.'96)
9. He _____ (drive) the car at a speed of 80 km an hour. (Nov.'96)

VII. PAST PERFECT TENSE

Past Perfect tense = had + Past Participle

The past perfect describes an action completed before a certain moment in the past as,

I worked in Erode Arts College. Before that I had worked in Loyola College, Chennai.

The patient had died before the doctor arrived. (= The patient died first.)

If two actions happened in the past, the past perfect tense is used for the action which happened earlier than the other. For the action which happened later, the Simple Past is used.

Examples

When I reached the station, the train had already left.

He had done the work before his father arrived.

EXERCISE VII

1. She told me his name after he _____ (leave). (Nov.'98, Apr.'97)
2. When we arrived, the dinner already _____ (begin). (Nov.'96, Apr.'98)
3. After they _____ (go), I sat down and rested.
4. Did you post the letter after you _____ (write) it?
5. She said she already _____ (see) the temple. (Apr.'97, Oct.'98)
6. A war _____ (break) out if the UN had not intervened. (Nov.'96, Apr.'97, Oct.'98)
7. If the weather had been finer, the match _____ (take place). (Apr.'98)
8. When the cinema collapsed last night, several people _____ (kill). Many more _____ (kill) if the tragedy _____ (occur) half an hour later when the main film was due to _____ (show) (Nov.'96, Oct.'98).

VIII. PAST PERFECT CONTINUOUS TENSE

The past perfect continuous is used for an action that began before a certain point in the past and continued up to that time; ,

Examples

At that time he had been working there for five years.

When Mr. Alex came to the college in 1990, Mr. Peter had already been teaching there for ten years.

IX. SIMPLE FUTURE TENSE

The simple future is used for an action that has still to take place ,

Examples

I shall meet you tomorrow.

Tomorrow will be Monday.

I shall be forty next birthday.

He will come tomorrow.

Note: We do not use will or shall for things we have arranged or decided to do.

We're going to the cinema on Saturday.

I'm not working tomorrow.

EXERCISE VIII

1. I think she _____ (pass) the examination.
2. It is very cloudy and I am sure it _____ (rain). (Apr.'97)
3. The time may come when _____ (own) a computer will become as common as _____ (own) a wrist watch. In future houses may _____ (erect) with built in computers _____ (execute) a wide variety of tasks. (Apr.'94)
4. Railways and roads must _____ (build) in developing countries so that earth moving equipment for the establishment of industries can easily _____ (transport). If the road and railways are well _____ (maintain), then the products can _____ (distribute) quickly. (Nov.'96)

X. FUTURE CONTINUOUS TENSE

The future continuous represents an action as going on at some time in the future.

Examples

When I get home, my dog will be sitting for me at the door.

He will be staying with us till Sunday.

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EXERCISE IX

1. How long _____ you _____ (stay) in Paris?
2. The train _____ (leave) in ten minutes.
3. I _____ (see) him tomorrow.
4. I _____ (stand) under the station clock when you arrive.
5. Tomorrow at this time I _____ (write) my English examination.

XI. FUTURE PERFECT TENSE TENSE

The Future Perfect is used to indicate the completion of an action by a certain future time as.

Examples

I shall have completed the work by that time.

Before you go to see him, he will have left the place.

Exercise X

1. They _____ (lay) the road by next August. (Apr.'97)
2. The rain _____ (stop) by the time we reach home. (Nov.'98, Oct.2000, Oct.'97)
3. They _____ (complete) the work by next year. (Apr.'99, M.Q.P.2001)
4. By next June he _____ (finish) his course. (Nov.'96, Apr.'97)

XII. FUTURE PERFECT CONTINUOUS TENSE

The Future Perfect Continuous indicates an action represented as being in progress over a period of time that will end in the future.

Examples

By next August we will have been studying in this college for two years.

On his next birthday, he will have been living in that house for ten years.

EXERCISE XI

Fill in the blanks with suitable passive forms of verbs given in brackets.

1. When rice husk _____ (burn) in the open or under controlled temperature in a furnace, it leaves a residue in the form of a highly reactive ash. This ash when it _____ (mix) with lime, acquires cement like properties and has the potential to replace portland cement either fully or partially in certain construction works. The cement produced from rice husk _____ (mix) with sand to prepare mortar which can _____ (use) for plastering purposes, etc.
2. To make the leaf protein, fresh green leaves _____ (feed) into the machine through a feed hopper and _____ gradually _____ (move) along by a helical screw. The lower part of the cylindrical outer casing _____ (perforate) to allow the juice to _____ (squeeze) out into a container.
3. The roller on the machine _____ (ink) and the roller _____ (rotate) either by hand or by means of an automatic device.
4. Corrections _____ (carry) out on the stencil. The stencil paper _____ (place) in position on the duplicating machine.

5. The stencil paper _____ (remove) from the machine and _____ (store) for future use.
6. This _____ (do) by painting the correcting fluid on the mistakes.
7. The letter should _____ (type) on stencil paper, setting the typewriter to the stencil-cutting position.
8. The type _____ (make) by pouring molten type metal into the mould.
9. Typesetting _____ (do) by hand and the types _____ (wedge) together in a tray.
10. Ink _____ (spread) on the type and then the paper _____ (press) against the types.
11. Then the plate _____ (wet).
12. When greasy printing ink _____ (apply) to the plate, it sticks to the greasy image but not to the non-printing areas.
13. From this plate, the image can _____ (print) on paper.
14. The Nanda Devi sanctuary _____ (make) out of bounds for outsiders.
15. An Army expedition _____ (send) to clean up this biosphere reserve in 1993.
16. It _____ (seal) totally from external contamination.
17. It _____ (manufacture) easily by small units in India.
18. Currently, it _____ (consider) the ideal solution.
19. The pump _____ (can, motorise).
20. This pump _____ (can, maintain) by the users themselves.
21. The faults in pumps _____ (may not always, cause) by substandard materials.
22. In the first method, a frothing agent _____ (add) to produce a foam.
23. A collecting agent _____ (use) to produce a film on the gold, which then sticks to the air bubbles.
24. The gold thus obtained _____ (smelt) and cast into bars.
25. The uranium fuel _____ (keep) in the reactor's core.
26. The reactor _____ (control) by control rods which _____ (can, drive) into and out of the core.
27. Exhaust steam _____ (convert) back into water by means of a condenser which uses water from a cooling tower.
28. The cold water _____ (circulate) by a feed water pump back through the hot part of the reactor.
29. Most of the impurities _____ (remove) from the freshly mined metal by a simple physical process.
(M.Q.P. Apr.'96)
30. The molten iron which comes from the furnace _____ (cast) into pigs or ingots. (Apr. 2001)
31. Work _____ (has start) on the new system of motorways.
32. Various types of reactor _____ (have, design) for different purposes.
33. The clay used by Spartek is really sediment deposits which _____ (collected) at the bottom of irrigation tanks. This mined clay _____ (bring) to the Tirupathi plant and _____ (mix) with other ingredients and _____ (wetgrind) into a fine slip. (Apr./May 2003)
34. Supply the correct forms of the verbs given in brackets.
The man (stop) the car and (come) to me. He (say) that he (not see) me because he (been) lost in the admiration of the scenery. He (take) out his wallet and (give) me some money. He said that the dog was dead and there was nothing we (can) do about it. (Nov. / Dec. 2004)

CHAPTER

13

Punctuation Marks

The following are the Punctuation Marks in English.

1. Full Stop or Period (.)
2. Comma (,)
3. Semicolon (;)
4. Colon (:)
5. Note of Interrogation (?)
6. Note of Exclamation (!)
7. Inverted Commas (or) Quotation Marks (‘ ’ “ ”)
8. Dash (—)
9. Parentheses ()
10. Hyphen (-)
11. Apostrophe (')
12. Capital Letters (A B C D)
1. **The Full Stop (.)**

The full stop represents the greatest pause and separation. It is used

- (a) To mark the end of a declarative sentence. (i.e. a sentence which makes a statement)
He is the best worker in our factory.
- (b) To close an imperative sentence (i.e. one which commands, makes a request to which an answer is taken for granted, or entreats)
 - (i) Eat your rice. (command)
 - (ii) Please stop banging the door. (entreaty)
 - (iii) Will you please come in. (answer taken for granted)
- (c) After abbreviations and initials; as
Approx. (approximately)
Advt. (Advertisement)
Asst., M.A., I.A.S.
A.B. Smith, Dip. Ed.

Note that in current English Mr and Mrs occur without a full stop, as these have come to be regarded as the full spellings.

- (d) To indicate a decimal fraction or rupees and paise.
 - (i) 55.8% (ii) 10.5 (iii) \$ 8.30

2. Comma (,)

The comma represents the shortest pause, and is used:

- (a) To separate a series of words in the same construction.
He lost lands, money, reputation, and friends.
He wrote his exercise neatly, quickly, and correctly.

Note: A comma is generally not placed before the word preceded by *and*.

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- (b) To separate each pair of words connected by *and*.
High and low, rich and poor, wise and foolish.
- (c) After a Nominative Absolute.
The wind being favourable, the squadron sailed.
- (d) To mark off a Noun or Phrase in Apposition.
Milton, the great English poet, was blind.
Joan Thomas, the wife of a well-known politician, is still missing.
- (e) To mark off the Nominative of Address or Vocative.
Come into the garden, Maud.
Mother, may I go out?
Tell me, Mother, may I go out?
- (f) To separate phrases in a series.
She gave Mum a purse, Dad a tie, and me a book.
- (g) Before and after a Principal Phrase, provided that the phrase might be expanded into a sentence, and is not used in a merely qualifying sense.
Caesar, having conquered his enemies, returned to Rome.
- (h) Before and after words, phrases, or clauses, let into the body of a sentence.
He did not, however, meet his father.
It is, after all, your duty.
His behaviour, to say the least, was very rude.
His story was, in several ways, improbable.
- (i) To indicate the omission of a word, especially a verb.
Lina was wearing a red dress; Lisa, a blue one.
Rama received a fountain pen; Hari, a watch.
He was a Brahmin; she, a Rajput.
- (j) To separate short co-ordinate clauses of a Compound sentence.
I came, I saw, I conquered.
The way was long, the wind was cold.
- (k) To mark off a direct quotation from the rest of the sentence.
“Why,” he said, “I was only looking in the cupboard for something to eat.”
John said, “I can do it.”
- (l) Before certain Co-ordinative conjunctions.
To act thus is not wisdom, but folly.
- (m) To separate a Noun Clause-whether subject or object-preceding the verb.
Whatever is, is right.
How we are to get there, is the question.
- (n) To separate a clause that is not restrictive in meaning, but is co-ordinated with the Principal clause.
Sailors, who are generally superstitious, say it is unlucky to embark on a Friday.
- (o) To separate an Adverbial clause from its Principal clause.
When I was in London, I was very happy.

- (p) To separate the parts of a date from one another and from any words following the date.
On Monday, October 29, 1929, the stock market crashed.
- (q) To separate the parts of an address.
Our house in Kuala Kangster, Perak, was built in June, 1974.
Sent entries to:
Jetset Quiz,
Box 549,
Singapore.
- (r) After the salutation and after the complimentary close of any letter.
Dear John,
Yours sincerely,
- (s) To separate introductory expressions like Yes, No, Oh, and Well.
Yes, I can be there by 2 p.m.
Oh, I haven't heard that rumour.
Well, we'll see if we can come.
- (t) Between two or more adjectives of equal rank when the conjunction is omitted.
The curator of the museum was a helpful, polite, interesting man.
- (u) To set off words that change a statement into a question or an exclamatory sentence.
You are going, aren't you?
This is fun, isn't it?
- (v) Wherever it will present ambiguity, i.e. misreading a sentence.
With Lata, Kishore hurried to the staff room.
- (w) To set off sharply contrasting expressions.
Liquid, not a powder, should be used.
I meant to give money, not labour.

3. Semicolon (;)

The semicolon is a mark of equality. Stronger than a comma but weaker than a full stop, it marks a pronounced pause (but not a stop) between two complete statements. The semicolon indicates that these statements are so closely related that they are written as one.

The semicolon is used:

- (a) To separate the clauses of Compound sentence, when they contain a comma.
He was a brave, large-hearted man; and we all honoured him.
- (b) To separate a series of loosely related clauses.
Today we love what tomorrow we hate; today we seek what tomorrow we shun; today we desire what tomorrow we fear.
- (c) Between independent clauses not connected by a conjunction.
Farah is quiet and studious; Rosalind is noisy and active.
- (d) Before such expressions as however, then, moreover, nevertheless, hence, thus, for instance, consequently, that is, and therefore, if they come between independent clauses not connected by a conjunction.
Our Science teacher insists on accuracy; therefore I prepare my experiments carefully.

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4. Colon (:)

The colon marks a still more complete pause than that expressed by the Semicolon. It is used (often with a dash after it):

- (a) To introduce a quotation.
Bacon says: "Reading maketh a full man, writing an exact man, speaking a ready man."
- (b) Before enumeration, examples, etc.
The Principal parts of a verb in English are: the present tense, the past tense, and the past participle.
- (c) Between sentences grammatically independent but closely connected in sense.
Study to acquire habit of thinking; no study is more important.

5. Note of Interrogation (?)

The note of interrogation is used, instead of the full stop, after a direct question.

Have you done your home work?

Do you know English?

How are you?

Can you do it?

6. The Note of Exclamation (!)

The note of exclamation is used after interjections and after phrases and sentences expressing sudden emotion or wish.

Alas!

Oh dear!

Long live the King!

What a pity!

7. Inverted Commas (" " and ' ')

- (a) Inverted commas are used to enclose the exact words of a speaker, or a quotation.
My mother said to me, "You are very untidy."
He said, "I am going home."
- (b) If a quotation occurs within a quotation, it is marked by single inverted commas.
"This" he said, "is like saying 'might is right'."
- (c) Use quotation marks (single or double) to draw special attention to a word or words. The island of Penang is sometimes called 'the Pearl of the Orient.'
- (d) Use quotation marks to indicate the titles of books, films, plays, songs, stories, works of art, and radio and television programme titles.
Charles Dickens wrote 'Oliver Twist'.
The other day I read Hopkin's poem 'Pied Beauty'.

8. Dash (—)

The dash is used:

- (a) To indicate an abrupt stop or change of thought; as,
If my husband were alive — but why lament the past?
- (b) To resume a scattered subject; as,
Friends, companions, relatives — all deserted him.

9. Parentheses ()

Parentheses or Double Dashes are used to separate from the main part of the sentence a phrase or clause which does not grammatically belong to it.

- (a) He gained from Heaven (it was all he wished) a friend.
- (b) A remarkable instance of this kind of courage—call it, if you please, resolute will—is given in the history of Babur.

10. Hyphen (-)

The hyphen (-) a shorter line than the Dash(—) is used to connect the part of a compound word. Father-in-law, Commander-in-Chief, Passer-by, Jack-of-all-trades, etc.

11. Apostrophe (')

The apostrophe is used:

- (a) To show the omission of a letter or letters.
Don't, can't, I've, e'er
- (b) To form the possessive of any singular noun, add an apostrophe and 's' to the noun.
Gopal's book.
- (c) To form the possessive of a plural noun ending in 's' add only an apostrophe.
Her parents' influence. A boys' school.
- (d) To form the possessive of a plural that does not end in 's', add an apostrophe and 's':
Children's shoes, policemen's duties, men's clothing.
- (e) Use the apostrophe to show possession with indefinite pronouns.
Everyone's duty.
Somebody's socks.
Note: Somebody else's job.
- (f) Use no apostrophe in personal, interrogative, or relative possessives.
Ours, yours, its, hers, theirs, whose.
Note: Do not confuse the contractions it's and who's with the possessives its and whose.
- (g) Use the apostrophe with expression of time, space and amount (value).
A three week's holiday
A day's leave
A dollar's worth
- (h) In writing the possessive of a compound noun, add an apostrophe plus 's' to the last word of the compound.
Mother-in-law's house.
Editor-in-Chief's opinion.
- (i) Use the apostrophe to make contractions of words or numbers.
O' clock (of the clock)
In the year '45 (1945)
- (j) Use the apostrophe to form the plurals of letters, figures, signs, or words used simply as words.
The number 771318 contains two 7's and two 1's.
There are two M.A.'s, four B.A.'s and nine B.Sc.'s on the staff.
P's and q's
5's, 2's, 10's

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12. Capital Letters

- (a) A sentence begins with a capital letter.
He is a student.
Today is a working day.
- (b) Each fresh line of poetry begins with a capital letter.
Jack and Jill
Went up the hill
To fetch a pail of water.
- (c) Capitals are used to begin Proper Nouns and Adjectives derived from them; as,
Delhi, Rama, Africa, African, Shakespeare, Shakespearian
- (d) All nouns and pronouns which indicate the Deity are capitalised;
as, Heavenly Father.
- (e) Capitals are used to write the pronoun I and the interjection O.
- (f) Capitalise the names of:
- | | | |
|--|---|--|
| (i) Persons | : | John, Gopal |
| (ii) The days of the week | : | Monday, Tuesday |
| (iii) The months | : | January, February |
| (iv) Religions and religious
Denominations and other
Religious terms | : | Islam, Christianity,
Hinduism, Easter |
| (v) All countries | : | India, China |
| (vi) Nationalities | : | Indian |
| (vii) Races | : | The Aryan race |
| (viii) Languages | : | English, Tamil |
| (ix) Special organisations, such
as schools, businesses, mosques,
churches, or political parties
Govt. Higher Secondary | : | Anna University
School, Rotary Club, Communist Party |
| (x) Buildings | : | L.I.C. building |
| (xi) Trains | : | The Kovai Express |
| (xii) Ships | : | The Queen Elizabeth |
| (xiii) Planes | : | Singapore Airlines |
| (xiv) Holidays, special or important
events | : | Chinese New Year
National Day Celebrations
Independence Day
Christmas Day |
| (xv) Bays | : | The Bay of Bengal |
| (xvi) Seas | : | The Arabian Sea |
| (xvii) Oceans | : | The Pacific Ocean |

- ## EXERCISES

I. Punctuate the following.

1. she has had an operation in the ear her husband says I have a real problem with my wife who behaves like a 56 year old teenager (M.Q.P)
2. are there any advantages in the computerisation of work in large establishments if so what are they (M.Q.P)

II. Punctuate the following passages.

1. the united nations objective is to provide clean drinking water for every person around the globe by the year 1990
several ways of doing this were discussed (Oct. 2000, M.Q.P., 2001)
2. ramanujan was born in 1887 in the town of erode in southern india and grew up in the nearby town of
kumbakonam where his father was an accountant for a cloth merchant although his family was middle class he was
actually very poor (M.Q.P., Apr. '97, Apr. '96)
3. consequently the department of physics and astrophysics has issued its own dos and donts. (Apr.'94)
4. after the recent scare in the us its the delhi universitys turn. (Apr.'97)
5. no he didn't put it in his pocket he may have thought he had put it in his pocket but in fact he dropped it.
(Nov.'97)

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6. in canada for instance beavers are now reintroduced into certain areas by means of aeroplanes the animal is put in a special box attached to a parachute and when the plane flies over the area it drops the case and its beaver passenger out. (Apr.'98)
7. the chairman said your company has done very well this year and the profit before tax has risen from last years rs 80 lakhs to 120 lakhs this year (Nov.'98)
8. amartya sen was awarded the nobel prize (Apr.'99)
9. indian cars are being exported to europe (Nov.'99)
10. rabindranath tagore who was awarded the nobel prize for his gitanjali was a great indian poet (Apr. 2000)
11. marys boy friend didnt turn up (Oct. 2000)
12. though virtual realtiy is considered to be an industry still in its infancy its applications seem limited only by our imagination the term virtual reality is credited to jaron lanior who founded a company named vpl research
13. although there is virtually no production in India the encyclopaedia britannica estimates that india has perhaps the largest accumulated stocks of silver in the world according to the reserve bank of india estimates in 1967 there were about 5000 million ounces (Apr.'94)
14. in 1909 when ramanujan was 22 he married nine year old janaki and took a clerical position in the madras port trust office to support her and his mother who lived with them (Nov.'94)
15. in the past only highly trained computer experts were able to use computers but as they became cheaper and smaller and easier to operate many people are now finding that a computer can help them (Apr.'95, Apr.'97)
16. compared to a motorbike or car the bicycle is a slow moving vehicle but its popularity has been on the increase in recent years (Oct.'95)
17. spread over five hectares the joint indo us plant is located in one of the most industrially backward areas of andhrapradesh (Apr.'96)
18. more than twenty years ago indian airlines decided to computerise some of their operations these were to begin with financial control and inventory control (Oct.'96)
19. although there is evidence to show that some form of printing was known in ancient times it was printing by movable type that constituted a turning point in the development of printing the invention of printing as we know today is ascribed to johanngutemberg (Oct.'97)
20. it has often been said that electronic media such as television and video cassette recorders and indeed the computer itself with its special language will soon render our children illiterate as far as printed word goes while our own reliance on reading will hasten our obsolescence (Apr.'98)
21. our time is running out says deborah thiagarajan of madras (Oct.'98)
22. but its the lazy people who invented the wheel and the bicycle because they did not like walking or carrying things we have made the world a better place havent we (Nov.'96)
23. salim ali was one of the most restless of men and the story of his extraordinarily long life spent mostly in the open constitutes a glorious chapter in the history of world ornithology the pioneer indian ornithologist and environmentalist has made a sterling contribution to the field of ornithology his life was avidly dedicated to the study of birds in their natural habitat (Apr.'96)
24. the english language came to england with the germanic tribes who overran england in the fifth century old english borrowed many words from scandinavian language (Apr.'96, Nov.'96)
25. oil the major source of energy in the world today has had a dramatic effect on the worlds economy until quite recently the demand for oil seemed unlimited (Apr.'97)

26. srinivasa ramanujan a poor uneducated indian born a hundred years ago was one of the greatest and most unusual mathematical geniuses who ever lived (Apr.'96)
27. ramu said sita why don't you go to madras on sunday (Nov.'96)

III. Punctuate the following passage.

1. the wheel is a universal discovery one of the few we know the egyptians are known to have used the wheel thousands of years ago but it seems the wheel was an independent discovery of many early civilisations the pottery wheel of the kotas of the nilgiris is very different from the usual potters wheel one has seen one of the main features of this wheel is that a thrower never rotates the wheel this is done by her helper who moves the wheel in an anti-clockwise direction the traditional wheel is constructed with clay and the moving parts are made from stone both men and women are involved in its construction the durability of the wheel is surprisingly high these wheels can be used for more than thirty years though its body may get crumbly its movement is excellent and it seems that this wheel becomes better with age its body is clay but its soul is stone.
2. around kulu-manali, the solang nala is heavily frequented and thus quite badly affected the rohtang road also causes spillover damage to the vegetation and the entire kulu region is devoid of pleasant life and certain alpine flowering plants too have disappeared.
3. the centre for water resources college of engineering took up an appropriate technology project in 1976 and completed it in 1978 this project is a practical project specially designed to suit rural conditions in india since the villages in india face acute power shortages it was hoped that this project when implemented would prove a boon to the rural masses
4. a quiet diminutive man p.k. ghosh spelled a different universe he was a literature buff fairly late in life he chose to set up a printing press the money for which was provided by relatives it was a printing press of the ordinary mould and yet with a difference
5. the writer rabindranath tagore who won the nobel prize for literature in 1913 was also a painter tagores nephew rabanindranath and his followers tried to combine indian painting traditions with other asian styles
6. nusrat fatch ali khan was a missionary khans mission in his own words was to spread a message of peace and love by singing from the depth of my heart and he did so with a great passion.
7. paterson got out of the car and said to the man im very sorry it was my mistake I didnt see you as i was lost in the beauty of the place —— and the dog is it yours the man said yes its mine I am sorry that I killed your dog I dont know how I can make amends.
8. the chairperson said the unit to be started in mysore will be able to benefit from several incentives and backward-area concessions offered by the karnataka government.
9. compared to a motorbike or car the bicycle is a slow moving vehicle but its popularity has been on the increase in recent years. (Oct.1995)
10. now that salim ali is no more who will speak about ecology and conservation with passion and fearlessness ornithology will receive a spurt only if people take greater interest in nature even the so called scientific temper is born of ones interest in nature. (May 2001)

CHAPTER

14

Editing

According to Oxford Dictionary the essence of editing is to make the context and style of literary, artistic or musical work, more presentable.

Examples

1. Edit the following passage. (M.Q.P.)

The aim of the authors are to describe about the benifits in computerisation and to suggest solutions to the problem of unemployment.

Answer

The aim of the authors is to describe the benefits of computerisation and to suggest solutions to the problem of unemployment.

2. Edit the following passage by correcting the mistakes in grammar and spelling. (Nov./ Dec. 2002)

In the coming dicades road transport has face serius problems. The dencity of automobile trafic in the sities will being so high, that the roads will hardly be able to accomodated them.

Answer

In the coming decades road transport will face serious problems. The density of automobile traffic in the cities will be so high, that the roads will hardly be able to accommodate them.

3. Edit the following passage by correcting the mistakes in grammar and spelling, without changing the meaning of the passage. (Apr./May 2003)

Technology is an mixed package : it has its benifits and its drawback. Technology are the power dirived from the aplication of knowlege. This power has been sought to be utilised to improved the standards of living of people all over the world.

Answer

Technology is a mixed package : it has its benefits and its disadvantages. Technology is the power derived from the application of knowledge. This power has been sought to be utilised to improve the standards of living of people all over the world.

4. Correct the mistakes in the English in the given passage. (Nov. / Dec. 2003)

One of the world's major source of energy are oil. We depend on it for heating, as fuel for transportation and generate of power. Crude mineral oil come out of the earth as a thick brown or black liqued with a strong smell. It is a complex mixtures of many different substance.

Answer

One of the world's major sources of energy is oil. We depend on it for heating, as fuel for transportation and for generation of power. Crude mineral oil comes out of the earth as a thick brown or black liquid with a strong smell. It is a complex mixture of many different substances.

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5. Correct the mistakes in the English in the given passage: (Apr. / May 2004)
 A famlier sigh in the Indian countryside these days is a gulvanised box - like steel structure with a long, sterdy handle monted on a masseve pedestel.

Answer

A familiar sight in the Indian countryside these days is a galvanised box-like steel structure with a long sturdy handle mounted on a massive pedestal.

6. Correct the mistakes in English in the following passage. (Jan. 2005)
 Oil, the major sources of energy in the world today have had a dramatic effect in the worlds economy. Until quiet recently, this demand for oil seems unlimited. This enormous demands motivate several multinational companies to invest in location of large deposits.

Answer

Oil, the major source of energy in the world today, has had a dramatic effect on the world's economy. Until quite recently, the demand for oil seemed unlimited. This enormous demand motivates several multinational companies to invest in location of large oil deposits.

EXERCISE I**Correct the mistakes in the given passages.**

- The first computer to be developed were all large mainframe computers, and these type of computer is still very much today used.
- A modern mainframe is can carry out many different job at same time and can be use simultaneous with many users.
- Each user accesses the mainframe through a terminal who acts as input device and output device both.
- The store backing for a mainframe is kepted on magnetic tapes which are kept in data storage cabinets. A very large strong back known as a databank.
- Nowadays, mainframes are in common use by large organisations such as airlines, railways and hotel chains for to centralise their bookings and reservations. Any number of terminals can to be situate anywhere in the world.
- Minicomputers are cheapest, smallest and slowest than mainframes. They rarely occupy more than one room, and often used for a particular kind of work, such as data analysis in a research laboratory.
- They often known as PCs (personal computers) since there are enough cheap for some individuals to buy.
- Micros are even found in some primary school in countries such as India, Russia and the UK which are trying to encourage a new generation of computer – literate children.
- Nuclear fuel such as uranium and plutonium is radioactive. They gives out dangerus and very penetrative radiation. During fission even more radiation are produced. This radiations is harmfull even in small quantitys. (Dec. 2001)
- Agravation of currant constraints would spel disaster for the inviting prospectus now looming large in the horyzen. A possitive approach is called for to revurse the negative trund. (May 2001)
- It is everyone agrees, a colosal task that the child perform when he learns to speak, and fact that he does so in so short a period of time challenge explanation Language learning begin with listening. Individual children wary greatly in the amount of listening they do before they start speaking, and late starters are often long listners. (May 2002)
- Faradays experiments wear only the first steps but he had shown quiet clearly that magnets could be use to produce an electric curent. (May 2002)

EXERCISE II

Edit the following passage by correcting the mistakes in spelling, grammar and punctuation.

1. From the ekonomic point of view, solar cookers are idle cooking devises far rurel india. But whan one concider the time factar, they proove to be weary disapointing. Ardinery solar cookers are best sooted for foots that rekwair slow boiling such as stews, cerels and vegitibles.
2. Perhaps sum of the solusions to our energy problems will come from increesingly effisient and cheep solar sells and super kunducting devises and transmision, but most of our energy needs will continued to be met by improved, power generating plants, internal combuschon engines and other devises that have been around far a long taim.
3. In imaginning the role of tecknology in the twentyfirst sentury, we should not loose site of the fact that many of our problem can be solved only with 'low' tecknology.
4. This 'comunity taip hybrid soler cucker' was design baring in mind cast and time both.
5. Rise husk is obtain from rise mils. It is produce in such large kwantity that it's dispozal sometime become a problem. Most of it is use as fual and livestok litre.
6. (a) managable (b) tendancy (Nov./Dec. 2003)
7. Bamboos have been use by humen beings since time immemorial. But it is only in the last four to five dicades that industries have came to recognise their value. owing to the instalation of india paper mills in bamboo has become a valuable resourse. (Apr./May 2004)
8. In 1973, the oil rich countries come to realise that if they act together, their oil deposits could be a sourse of great power and welth and their action of increase the price of oil immediately afterwards, almost hold the developped countries to ransum.

CHAPTER

15

Word Stress and Consonant Clusters

Stress is an extra force used when pronouncing a particular word or syllable.

Not all syllables, in an utterance, in English are spoken with equal emphasis. There are certain syllables which are stressed more than others. Thus in the word 'father', the first syllable /fa:/ is stressed and so, it is spoken more prominently than the second syllable. Similarly, in the word 'about', the second syllable 'bout' is stressed and so, is spoken more prominently, than the first syllable.

Stress mark is a mark used to indicate the stress on a syllable in a word. For example, in the word 'sympathetic' the primary stress (ˈ) is on the third syllable and the secondary stress is on the first syllable.

Sometimes the stress factor acts as a marker for a class of words. For example, in the following words, the shift in stress changes the class.

Noun	Verb
ˈconduct	conˈduct
ˈproduce	proˈduce
ˈconvict	conˈvict
ˈsubject	subˈject
ˈobject	obˈject
ˈprogress	proˈgress
ˈrecord	reˈcord
ˈimport	imˈport
ˈincrease	inˈcrease
ˈpresent	preˈsent
ˈcontact	conˈtact
ˈpermit	perˈmit

1. If a word ends in *-tion*, the syllable preceding it, is stressed.

Examples examiˈnation proˈduction
fortifiˈcation saniˈtation

2. If a verb ends in *-fy*, *-ate*, *-ize*, *-ise* or *-yse*, the main stress is on the third syllable counted from the end.

Examples ˈmagnify ˈmeditate ˈminimise ˈanalyse

3. If a word ends in *-logy*, the main stress is on the syllable immediately before this.

Examples psyˈchology paˈthology

4. (a) If an adjective ends in *-ic*, the main stress is normally on the second syllable counted from the end.

Examples ecoˈnomic emˈphatic

- (b) If an adjective ends in *-ical*, the main stress is normally on the third syllable counted from the end.

Examples hisˈtorical geoˈgraphical boˈtanical

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5. If an adverb ends in *-ically*, the main stress is normally on the fourth syllable counted from the end.

Examples em'phatically eco'nomically

6. If a word ends in *-ity*, the main stress falls on the third syllable counted from the end, and on the second syllable counted from the end if there are only two syllables.

Examples for'mality ca'pacity 'gravity responsi'bility 'city 'pity

7. If a word ends in *-ee* or *-eer*, the main stress is normally on the last syllable.

Examples pa'yee devo'tees nomi'nee engi'neer pio'neer

8. If a word ends in *-ette*, the main stress normally falls on the last syllable.

Examples ciga'rette ga'zette

9. In words with weak prefixes, the root is stressed.

Examples a'head a'long a'part be'low com'pose de'velop re'duce

10. The inflectional suffixes *-ed*, *-es* and *-ing* do not affect the stress pattern.

Examples re'late re'lated
sub'mit sub'mitted
com'pose com'poses
be'gin be'ginning
ad'vance ad'avancing

11. The derivational suffixes *-age*, *-ance*, *-en*, *-er*, *-ess*, *-ful*, *-hood*, *-ice*, *-ish*, *-ive*, *-less*, *-ly*, *-ment*, *-ness*, *or*, *-ship*, *-ter*, *-ure* and *-zen* do not normally change the stress pattern.

Examples

'marry	'marriage
per'form	per'formance
'bright	'brighter
'common	'commoner
'actor	'actress
'beauty	'beautiful
'mother	'motherhood
'coward	'cowardice
'yellow	'yellowish
con'clude	con'clusive
'colour	'colourless
'certain	'certainly
a'chieve	a'chievement
'bitter	'bitterness
'collect	'collector
'leader	'leadership
'laugh	'laughter
en'close	en'closure
'city	'citizen

12. In words ending in *-ian* or *-ious* the syllable preceding the suffix is stressed.

Examples mu'sician poli'tician in'jurious la'borious

13. In compound words ending with *-ever* and *-self*, the second element is stressed.

Examples how'ever when'ever him'self my'self

Syllables which are stressed are underlined.

I

- | | |
|------------------------|--------------------------|
| 1. <u>re</u> nowned | 9. con <u>ta</u> minated |
| 2. <u>ma</u> intenance | 10. <u>ill</u> ness |
| 3. <u>op</u> tion | 11. <u>disa</u> dvantage |
| 4. <u>sur</u> vival | 12. <u>cal</u> culate |
| 5. <u>draw</u> back | 13. <u>fa</u> mous |
| 6. <u>es</u> timate | 14. <u>up</u> keep |
| 7. <u>obje</u> ctive | 15. un <u>clea</u> n |
| 8. <u>dis</u> ease | |

II

- | | |
|-----------------------|--------------------------|
| 1. <u>ex</u> traction | 5. <u>sta</u> gnant |
| 2. <u>col</u> lateral | 6. am <u>alga</u> mation |
| 3. <u>flota</u> tion | 7. <u>dis</u> tress |
| 4. <u>def</u> ault | 8. <u>cyani</u> dation |

III

- | | |
|------------------------|---------------------------|
| 1. <u>vol</u> atile | 6. <u>sen</u> sitive |
| 2. <u>sta</u> gnant | 7. ab <u>nor</u> malities |
| 3. <u>accu</u> mulated | 8. <u>hoar</u> ding |
| 4. <u>as</u> sets | 9. <u>virtu</u> ally |
| 5. <u>spe</u> culators | 10. <u>dis</u> tress |

IV

- | | |
|-----------------------|---------------------|
| 1. <u>mi</u> grant | 5. <u>im</u> port |
| 2. <u>ru</u> ral | 6. <u>ge</u> nius |
| 3. <u>stat</u> istics | 7. <u>sti</u> mulus |
| 4. <u>rec</u> ruit | |

V

- | | |
|----------------------|-------------------------|
| 1. <u>sur</u> faces | 5. <u>fea</u> sible |
| 2. <u>feed</u> stock | 6. <u>lub</u> rication |
| 3. <u>explo</u> it | 7. <u>con</u> servation |
| 4. <u>colu</u> ms | 8. <u>con</u> sumption |

VI

- | | |
|-----------------------|------------------------|
| 1. <u>renew</u> able | 5. <u>fac</u> ilitate |
| 2. <u>natu</u> ral | 6. <u>com</u> mmercial |
| 3. <u>fu</u> el | 7. <u>alte</u> rnative |
| 4. <u>popu</u> lation | 8. <u>dem</u> and |

VII

- | | |
|--------------------------|-------------------------|
| 1. <u>abu</u> ndant | 6. <u>sim</u> ple |
| 2. <u>artifi</u> cial | 7. <u>des</u> alination |
| 3. <u>form</u> er | 8. <u>natu</u> ral |
| 4. <u>soph</u> isticated | 9. <u>lat</u> ter |
| 5. <u>salin</u> ation | 10. <u>lim</u> ited |

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VIII

- | | |
|----------------------------|----------------------------|
| 1. <u>fiction</u> | 6. <u>natural language</u> |
| 2. <u>fantasy</u> | 7. <u>artificial</u> |
| 3. <u>extraterrestrial</u> | 8. <u>intelligence</u> |
| 4. <u>robot</u> | 9. <u>semiconductor</u> |
| 5. <u>sensor</u> | 10. <u>microprocessor</u> |

IX

- | | |
|---------------------|-------------------|
| 1. <u>complaint</u> | 5. <u>adhere</u> |
| 2. <u>provide</u> | 6. <u>dictate</u> |
| 3. <u>granted</u> | 7. <u>account</u> |
| 4. <u>remain</u> | |

X

- | | |
|----------------------|-----------------------|
| 1. <u>heritage</u> | 6. <u>spectacular</u> |
| 2. <u>intact</u> | 7. <u>tranquil</u> |
| 3. <u>panorama</u> | 8. <u>sanctuary</u> |
| 4. <u>exotic</u> | 9. <u>diversity</u> |
| 5. <u>repository</u> | |

EXERCISE

Write the stressed syllables in the following words.

- | | |
|-----------------|----------------------------|
| (a) proposition | (b) impediment |
| (c) statutory | (d) information (May 2002) |

Word Stress

When a word has more than one syllable, one of the syllables is uttered with greater force than the others. This is called stress. Here are some examples.

(Note: The stressed syllables are underlined)

- | | | |
|-----------------------|--------------------------|-------------------------|
| 1. <u>incredible</u> | 13. <u>vegetation</u> | 25. <u>understand</u> |
| 2. <u>atmosphere</u> | 14. <u>afforestation</u> | 26. <u>material</u> |
| 3. <u>garbage</u> | 15. <u>metallic</u> | 27. <u>sulphuric</u> |
| 4. <u>disposal</u> | 16. <u>deduce</u> | 28. <u>velocity</u> |
| 5. <u>wire</u> | 17. <u>nationality</u> | 29. <u>magnetic</u> |
| 6. <u>deluge</u> | 18. <u>sanctuary</u> | 30. <u>concrete</u> |
| 7. <u>descend</u> | 19. <u>oxidation</u> | 31. <u>support</u> |
| 8. <u>damage</u> | 20. <u>develop</u> | 32. <u>removal</u> |
| 9. <u>pollution</u> | 21. <u>foundation</u> | 33. <u>information</u> |
| 10. <u>production</u> | 22. <u>temperature</u> | 34. <u>advantageous</u> |
| 11. <u>poachers</u> | 23. <u>corrosion</u> | 35. <u>degree</u> |
| 12. <u>ecology</u> | 24. <u>security</u> | |

Some words are stressed differently according to the various ways in which they are used.

Noun	Verb
1. PROject	proJECT
2. PERfect	perFECT
3. CONtract	conTRACT
Noun	Verb
4. CONtrast	conTRAST
5. EXport	exPORT
6. REbel	reBEL

Consonant Clusters

When two or three consonants occur together in a word, they form a consonant cluster. They occur at the beginning or at the end of words.

Initial consonant clusters

/pl-/	plan, plot, please	/fl-/	flask, fly, flew
/pr-/	pray, prize, proud	/fr-/	fresh, free, fry
/tr-/	treat, train, trick	/qr-/	three, thrash, threw
/tw-/	twice, twelve, twins	/qw-/	thwart
/kl-/	clean, club, climb	/sp-/	speak, spice, spell
/kr-/	cry, cross, crown	/st-/	station, stick
/kw-/	quiet, quite, queen	/sk-/	sky, school, ski
/bl-/	block, blue, blade	/sm-/	small, smear, smoke
/br-/	brick, bright, brew	/sn-/	snack, snare, slate
/dr-/	draw, drink, dress	/sw-/	sweep, sway, suite
/dw-/	dwarf, dwell, dwindle	/ðr-/	shrink, shrewd, shriek
/gl-/	glass, gleam, glue	/gr-/	green, ground, grass
/spl-/	splash, spleen, split	/skr-/	screen, scream, scratch
/spr-/	spring, spright, spray	/skw-/	squash, square, squint
/str-/	strain, strike, straight		

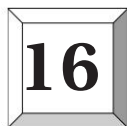
Final consonant clusters

/-pt/	stopped, helped, kept	/-bd/	robbed, clubbed
/-pq/	depth	/-dq/	breadth
/-tq/	eighth	/-gd/	mugged, begged
/-ts/	cuts, mats, cheats	/-tòt/	watched, reached
/-kt/	worked, talked, act	/-d ₃ d/	judged, abridged
/-ks/	walks, books, box	/-gd/	banged, hanged
/-hq/	length, strength	/-ft/	laughed, soft
/-lp/	help, scalp	/-fq/	fifth
/-lk/	milk, bulk	/-fs/	coughs, laughs
/-lb/	bulb	/-qs/	myths, baths
/-ld/	world, cold	/-qd/	breathed, bathed
/-lm/	helm, film	/-qz/	paths, wreathes

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/-ln/	kiln	/-òt/	rushed, hushed
/-lv/	valve, solve	/-pts/	adopts, erupts
/-ntòt/	clinched	/-pqs/	depths
/-nst/	fenced, danced	/-tqs/	eighths
/-nzd/	cleansed	/-kts/	acts, ducts
/-hks/	links	/-kst/	next, fixed
/-lpt/	helped	/-ksq/	sixth
/-lps/	helps	/-dst/	midst
/- lkt/	milked	/-mpt/	prompt
/-lks/	silks, milks		
/-lbz/	bulbs	/-fts/	lifts, rafts
/-ltòt/	belched	/-fqs/	fifths
/-lmd/	(over-) whelmed	/-spt/	lisped
/-lnz/	kilns	/-sps/	wasps, grasps
/-lfq/	twelfth	/-sts/	toasts
/-lfs/	gulfs	/-skt/	asked
/-lvd/	solved	/-sks/	asks, desks
/-lvz/	wolves		
/-ksts/	texts	/-mpst/	glimpsed
/-ksqs/	sixths	/-lpts/	sculpts
/-mpts/	prompts	/-lfqs/	twelfths

CHAPTER



Abbreviations and Acronyms

An *Abbreviation* is a form of a word, phrase, etc., that is shorter than the full form.

E.g. 'GB' is the abbreviation of /for 'Great Britain'

An *Acronym* is a word formed from the first letters of a group of words.

E.g. UNESCO, i.e. United Nations Educational, Scientific and Cultural Organisation.

Examples

PART - I

- | | | |
|------------------|--------------------------------------|--------------------|
| 1. A.C. | Alternating Current, Air-Conditioner | (Oct.2001) |
| 2. A.E.C. | Atomic Energy Commission | |
| 3. A.E.E. | Assistant Executive Engineer | |
| 4. Aero | Aeronautical | |
| 5. AI | Artificial Intelligence | (Nov.'96, Apr.'98) |
| 6. AIDS | Acquired Immuno Deficiency Syndrome | |
| 7. Al | Aluminium | |
| 8. ALGOL | Algorithmic Language | |
| 9. ALU | Arithmetic and Logic Unit | (Apr.'97) |
| 10. a.m. | Ante meridiem (before mid day) | |
| 11. Amp | Ampere | |
| 12. ant. | Antenna | |
| 13. APL | A Programming Language | |
| 14. A.P. | Arithmetic Progression | |
| 15. app. | Apparatus | |
| 16. asb | Asbestos | |
| 17. ASLV | Augmented Satellite Launch Vehicle | |
| 18. at. | Atomic | |
| 19. atm. | Atmosphere | |
| 20. auto | Automatic | |
| 21. AV | Audio Visual | |
| 22. AW | Atomic Weight | |
| 23. AWACS | Airborne Warning and Control System | |
| 24. ax. | Axis | |
| 25. bal. | Balance | |

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26. b and w	Black and white	
27. bar.	Barometer	
28. BASIC	Beginners All purpose Symbolic Instruction Code	(M.Q.P., Apr.'99, Apr.'96, Oct.'98)
29. B.B.C.	British Broadcasting Corporation	
30. BHEL	Bharat Heavy Electricals Limited	
31. b.p.	Boiling point	
32. B.P.	Blood Pressure	
33. B.S.I.	British Standards Institute	
34. CAD	Computer Aided Design	
35. CAT	Common Admission Test	
36. c.c.	Cubic centimetre	
37. C.D.	Compact disc	
38. Cent	Centigrade, centre	
39. CEO	Chief Executive Officer	
40. Cert	Certificate	
41. CFC	Chlorofluorocarbon	(Apr.'97, Nov.'99, Oct.'97)
42. c.g.s.	Centimetre-gram-second	
43. CIEFL	Central Institute of English and Foreign Languages	
44. Cir.	Circuit, circle	
45. COBOL	Common Business Oriented Language	(Nov.'94)
46. CPU	Central Processing Unit	(Nov.'94, Apr. 2000)
47. CRO	Cathode Ray Oscilloscope	
48. CRT	Cathode Ray Tube	
49. CSIR	Council for Scientific and Industrial Research	
50. CV	Curriculum Vitae	
51. D.C.	Direct Current	(Nov.'99)
52. D.D.T.	Dichloro-Diphenyl-Trichloroethane (a colourless chemical that kills insects and is also harmful to animals)	
53. def.	Definition	
54. dia.	Diameter	
55. dil.	Dilute	
56. div.	Divide	
57. DNA	Deoxyribonucleic Acid (the chemical in the cells of animals and plants which carries genetic information)	
58. DOS	Disk Operating System	
59. DP	Data Processing	
60. DTE	Director of Technical Education	
61. EAROM	Electrically Alterable Read Only Memory	
62. E.B.	Electricity Board	
63. E.C.G.	Electro Cardiogram	
64. e.g.	Exempli gratia (for example, for instance)	
65. E.H.P.	Effective Horse Power	
66. E.M.F.	Electro Motive Force	
67. emu	Electromagnetic unit	

68.	engg.	Engineering	
69.	EPROM	Electrically Programmable Read Only Memory	
70.	eq.	Equation	
71.	ex.	Exercise	
72.	f.	Force, frequency	
73.	F	Fahrenheit	
74.	FDD	Floppy Disk Drive	(Oct. 2000)
75.	F.M.	Frequency Modulation	
76.	FORTRAN	Formula Translator	
77.	F.P.	Freezing Point	
78.	F.P.S.	Foot-Pound-Second	
79.	GATE	Graduate Aptitude Test in Engineering	
80.	Geom	Geometry	
81.	GMAT	Graduate Management Admission Test	
82.	GMT	Greenwich Mean Time	
83.	GRE	Graduate Record Examination	
84.	H.C.F.	Highest Common Factor	
85.	H.F.	High Frequency	
86.	Hi-Fi	High Fidelity	
87.	H.P.	Horse Power	
88.	Hr	Hour	
89.	H.T.	High Tension	
90.	I.C.B.M.	Inter-Continental Ballistic Missile	
91.	ICE	Inter City Express	
92.	I.I.T.	Indian Institute of Technology	(Apr.'96)
93.	illus.	Illustration	
94.	in.	Inch	
95.	IQ	Intelligence Quotient	
96.	IT	Information Technology	
97.	J.E.	Junior Engineer	
98.	kg.	Kilogram (also Kilogramme)	
99.	kHz	Kilohertz	(Apr.'96)
100.	km.	Kilometre	
101.	kw.	Kilowatt	
102.	LAN	Local Area Network	
103.	LASER	Light Amplification by Stimulated Emission of Radiation	(Oct.'96)
104.	Lat	Latitude	
105.	lb.	Pound	
106.	LCD	Liquid Crystal Display	
107.	L.C.M.	Least Common Multiple	
107.	LD	Laser Disc	
109.	LISP	List Processing	(Apr.'95)
110.	LPG	Liquefied Petroleum Gas	(Apr.'98)

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111. LT	Low Tension	
112. MB	Megabyte	
113. mg.	Milligram	
114. min.	Minimum	
115. MIPS	Million Instructions Per Second	
116. MIT	Massachusetts Institute of Technology	
117. MOPS	Million Operations Per Second	
118. M.P.	Member of Parliament; Madhya Pradesh	
119. m.p.	Melting point	
120. NASA	National Aeronautics and Space Administration	
121. NLC	Neyveli Lignite Corporation	
122. N.T.P.	Normal Temperature and Pressure	
123. OCR	Optical Character Recognition	
124. OHP	Overhead Projector	
125. OPEC	Organisation of Petroleum Exporting Countries	
126. OR	Operational Research	(Oct. 2001)
127. oz	Ounce	
128. P.C.	Personal Computer	(Apr.'99, Apr.'97, Oct.'98, Nov.'96)
129. PCAT	Personal Computer Advanced Technology	
130. PC-XT	Personal Computer Extended Technology	
131. P.D.	Potential Difference	
132. Perc	Percent	
133. p.m.	Post meridiem (afternoon)	
134. PROM	Programmable Read Only Memory	(Nov.'94)
135. psi	Pounds per square inch	(Nov.'96)
136. PSLV	Polar Satellite Launching Vehicle	(Apr.'97)
137. PU	Public Undertaking	(Oct.'95)
138. r	Radius	
139. RAM	Random Access Memory	(Apr.'98, Apr. 2000, Apr.'94, Apr.'95, Apr.'96)
140. R&D	Research and Development	(Oct. 2000)
141. R.E.C.	Regional Engineering College	
142. R.F.	Radio Frequency	
143. R.M.S.	Root Mean Square	
144. ROM	Read Only Memory	(Nov.'98, Oct. 2000, Apr. 2001, Apr.'94, Apr.'95, Apr.'97, Nov.'96)
145. RPM	Revolutions Per Minute	(Apr. 2001)
146. SCR	Silicon Controllor Rectifier	
147. SD	Standard Deviation	
148. S.E.	Superintending Engineer	
149. S.G.	Specific Gravity	
150. SONAR	Sound Navigation And Ranging	(Apr. 2001)
151. SPOT	Satellite Positioning and Tracking	
152. STC	State Trading Corporation	

153. s.t.p.	At standard temperature and pressure	
154. t.	Time, tons	
155. T	Temperature	
156. TB.	Tuberculosis	
157. TGV	Train d' Grand Vitesse	
158. TOEFL	Test of English as a Foreign Language	
159. UFO	Unidentified Flying Object	
160. UHF	Ultra High Frequency	
161. UNO	United Nations Organisation	(Apr.'96)
162. UPS	Uninterrupted Power Supply	
163. US	United States	
164. VCP	Video Cassette Player	
165. VCR	Video Cassette Recorder	
166. VDU	Visual Display Unit	(M.Q.P., Nov.'98, Oct.2000, Oct.'95, Apr.'96)
167. VHF	Very High Frequency	
168. VIRUS	Vital Information Resource Under Seize	
169. vol.	Volume	
170. VR	Virtual Reality	
171. W.	Watt(s), width	
172. WAN	Wide Area Network	
173. wpm	Words per minute	
174. wt	Weight	
175. 6.28 m/s	Six Point Two Eight metres per second	(Oct.'96)
176. 15 Psi	Fifteen pounds per square inch	(Nov.'97)
177. 40% W/V	Forty percentage Weight per Volume	
178. 40% V/V	Forty Percentage Volume Per Volume	
179. 150 rpm	One hundred and fifty revolutions per minute	(Apr.'94, Nov.'96)
180. 273 K	Two hundred and seventy three Kelvin	
181. 300 ppm	Three hundred parts per million	(Nov.'97)
182. 300 rpm	Three hundred revolutions per minute	(Apr.'96)
183. 500 Btu/ft³	Five hundred British thermal unit per cubic feet	
184. 530 KHz	Five hundred and thirty kilo hertz	(Apr.'94)
185. 1500 Kg/cm³	One thousand five hundred kilogram per centimetre cube	
186. 3000/rev/min	Three thousand revolutions per minute	
187. 150 rpm	One hundred and fifty revolutions per minute	
188. VSNL	Videsh Sanchar Nigam Limited	
189. BSNL	Bharat Sanchar Nigam Limited	

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PART-II

1. **A/c.** Account
2. **Ack.** Acknowledgement
3. **advt.** Advertisement
4. **A.G.** Accountant General
5. **AIR** All India Radio
6. **ALA** American Library Association
7. **anon** Anonymous
8. **arch** Architect
9. **ASEAN** Association of South-East Asian Nations
10. **BBC** British Broadcasting Corporation
11. **bet.** Between
12. **BITS** Birla Institute of Technology and Science
13. **Brit** Britain
14. **BSF** Border Security Force
15. **CBI** Central Bureau of Investigation
16. **Cert** Certificate
17. **CIA** Central Intelligence Agency
18. **C-in-C.** Commander-in-Chief
19. **cir** Circular, circle
20. **cit.** Citation
21. **C.J.** Chief Justice
22. **C/o.** Care of
23. **Corp.** Corporation
24. **D.A.** Dearness Allowance
25. **D.C.E.** Director of Collegiate Education
26. **D.D.** Demand Draft
27. **D.Litt.** Doctor of Literature
28. **EEC** European Economic Community
29. **E.&O.E.** Errors and Omissions Excepted
30. **et al.** Et alii/alia (and other people or things)
31. **etc.** Et cetera (and other similar things; and the rest, and so on)
32. **ETV** Educational Television
33. **FAO** Food and Agricultural Organisation
34. **FBI** Federal Bureau of Investigation
35. **FCI** Food Corporation of India
36. **Fn** Footnote
37. **FR** Fundamental Rules
38. **Gaz.** Gazette
39. **G.B.** Great Britain
40. **Gen.** General

41. Gk	Greek
42. G.O.	Government Order
43. Govt	Government
44. GNP	Gross National Product
45. GRD	German Democratic Republic
46. Hon.	Honorary
47. HRA	House Rent Allowance
48. IAS	Indian Administrative Service
49. ibid	Ibidem (in the same book, article, passage, etc., as previously mentioned)
50. i/c	Incharge
51. i.e.	Id est (that is to say; in other words)
52. illus	Illustration
53. INTERPOL	International Police
54. Jr	Junior
55. Lang	Language
56. LIC	Life Insurance Corporation
57. Lt	Lieutenant
58. Misc	Miscellaneous (of various types or from various sources)
59. MOU	Memorandum of Understanding
60. MS	Manuscript
61. Myth	Mythology
62. N.B.	Nota bene (take special notice that; note well)
63. NRI	Non-Resident Indian
64. orgn	Organisation
65. pp.	Pages
66. SF	Science Fiction
67. SR	Service Register
68. Sth.	Something
69. TA	Travelling Allowance
70. TANSI	Tamilnadu Small Industries Corporation Ltd.
71. TC	Transfer Certificate
72. TNPSC	Tamil Nadu Public Service Commission
73. UGC	University Grants Commission
74. Univ.	University
75. UPSC	Union Public Service Commission
76. USIS	United States Information Service
77. viz.	Videlicet (that is to say; in other words)
78. vs.	Versus
79. w.e.f.	With effect from
80. WHO	World Health Organisation
81. Yr	Your, year

CHAPTER

17

'Because of' 'On account of' 'Owing to' 'Due to'

These are conjunctions that can be used in place of one another to give the same meaning in most cases, when used appropriately.

Examples

Rewrite the following sentences using 'because of', 'on account of', 'owing to', 'due to'.

1. The computer produced nonsense because there was a mistake in the programming. (Apr. '96)

Answers

- (a) The computer produced nonsense because of a mistake in the programming.
 - (b) The computer produced nonsense on account of a mistake in the programming.
 - (c) The computer produced nonsense owing to a mistake in the programming.
 - (d) The computer produced nonsense due to a mistake in the programming.
2. The information was easily stolen because there were no security checks in the system. (Use the word *lack*)

Answers

- (a) The information was easily stolen because of lack of security checks in the system.
 - (b) The information was easily stolen on account of lack of security checks in the system.
 - (c) The information was easily stolen owing to lack of security checks in the system.
 - (d) The information was easily stolen due to lack of security checks in the system.
3. The trade unions fear that computerisation will lead to large-scale retrenchment.

Answers

- (a) The trade unions fear that there will be large-scale retrenchment because of computerisation
 - (b) The trade unions fear that there will be large-scale retrenchment on account of computerisation.
 - (c) The trade unions fear that there will be large-scale retrenchment owing to computerisation.
 - (d) The trade unions fear that there will be large-scale retrenchment due to computerisation.
4. All the data were lost because the power supply was interrupted.

Answer

- (a) All the data were lost because of power supply interruption (interruption in power supply).

Similarly 'because of' = 'on account of', 'owing to', 'due to'

1. 'Because' (not followed by of) must always be followed by a clause.
(There must be a subject and a verb)

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2. 'Because of' is followed only by a noun or noun phrase.
(There must NOT be a verb).
Because + subject + verb
Because of + noun (Phrase)
 1. He was worried because it had started to rain.
He was worried because of the rain. (noun phrase)
 2. The students arrived late because there was a traffic jam.
The students arrived late because of the traffic jam.

EXERCISE I

Use 'because of' instead of 'because' in the following sentences.

1. Because the cost of labour is high, a mechanical stoker was installed. (M.Q.P.)
2. Because the velocity of the steam was high, the blades are caused to rotate. (M.Q.P.)
3. Because the temperature is high, special alloys are used. (M.Q.P.)
4. Because the project is expensive, government assistance is necessary. (M.Q.P.)
5. After the cinema, he hesitated to go home because he was afraid of facing his wife. (Apr. '99)
6. Many of the planets are crated because meteors had bombarded them. (Nov. '99)
7. He couldn't venture out because it was raining heavily. (Nov. '99)
8. Alex came up in life because he worked hard. (Apr. 2000)
9. Because it is cheap, many people prefer using internet to phoning. (M.Q.P.)
10. Computers have become smaller because they are using miniature components. (M.Q.P.)
11. Because the steam is wet, it must be superheated. (Nov. '94)
12. Because a lubricant has been applied, there is no wear and tear in the shaft. (Oct. '95, Apr. '96, Oct. '98)
13. Because grease is applied on the plate, it repels water and consequently only the non printing area becomes wet. (Apr. '95)

Beginning with 'because of'.

Note: Use 'Because of' instead of 'Due to'

e.g. : Due to the strike there was unrest everywhere.

Because of the strike, there was unrest everywhere.

EXERCISE II

Begin with 'Because of'.

1. Due to the increase in temperature, there is an increase in pressure. (M.Q.P., Apr. '94, Apr. '96)
2. Due to the high temperature, special alloys are used.
3. Due to the condensation in the cylinder, the steam pressure falls.
4. Due to drop in temperature, there is a partial evaporation of liquid.
5. Due to increased demand for power, large capacity turbines were produced.

EXERCISE III**Complete the sentences using 'because of'.**

e.g. He could not come because of ill health.

1. The dam collapsed _____. (Apr.'99, Oct.'97)
2. Objects fall to the earth _____. (Nov.'99)
3. The machine stopped _____. (Oct. 2001, Nov.'96)
4. Ramanujan failed to obtain a college education _____. (Oct.2000)
5. The building caught fire _____. (Apr.'98)
6. The area is still backward _____. (Oct.'98)

Joining the sentences using 'because'.

e.g : He did not work hard. He did not pass.

Sentence No.2 + because + Sentence No.1

He did not pass because he did not work hard.

EXERCISE IV**Join the sentences using 'because'.**

1. Hydrogen is lighter than air. A hydrogen balloon will rise. (Nov.'99)
2. He wanted to become rich. He went to the United States of America. (Oct. 2000)
3. Tamilnadu is in the tropical region. It is very hot in summer. (Oct. 2001)

EXERCISE V**Join (Rewrite) these sentences using 'because of'.**

1. Increased efficiency was achieved because they devised a new method of superheating steam. (Apr. 2001)
2. The volume of gas increased because the temperature increased. (Apr. 2001)
3. The per capita income of an average Indian always remains low. The main reason is population explosion. (Oct. 2001)
4. Most of the people in this area are illiterate. That is why the area continues to be backward. (Oct. 2001)
5. In the Bible he found some teachings of Jesus which he liked very much because they were similar to certain ideas in the Gita. (Apr. 2001)
6. The steam must be superheated because it is damp. (Apr. 2001)
7. Top rankers prefer to study Information Technology because there is a great demand for software engineers abroad. (Oct. 2001)
8. The building collapsed because there were faults in the structure. (Apr.'97)

CHAPTER



Sentence Patterns

S V O C A

S - Subject V - Verbal O - Object
C - Complement A - Adjunct

In every sentence the most important word is the verb. A verb shows action or activity or work done.

Look at the following sentences:

1. Sita sings.
 V
2. Gopal speaks.
 V
3. They play.
 V

Subject(s):

To get the subject 'S' ask the question 'Who?' before the verb.

For example, Who sings Sita sings.

Who speaks? Gopal speaks, etc.

Object(O):

To get the object 'O' ask the question 'What' or 'Whom'. 'What' is for things and 'Whom' is for persons. Persons may be nouns or pronouns.

Pronouns : me, us, you, him, her, it, them

Examples

He bought a book (a book=O)

I saw him (him=O)

Adjunct (A):

To get 'A' ask the question when, where or how.

When : Time: at 4 O' clock, in the morning, yesterday, tomorrow, last year, etc.

Where : Place : at the railway station, etc.

How: Manner: slowly, fast, etc.

Examples

I saw him at the station : Where? at the station (A)

He wrote a letter yesterday :When? Yesterday (A)

He walks very fast : How? Very fast (A)

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The Adjunct (A) can come before S, after S, before V and after O.

(It does not often come between V and O)

A A A

To my surprise, he hardly ever touched his books last month.

Complement (C):

A Complement completes the meaning of a sentence.

For example, in the sentence: 'He painted the door red', the word 'red' completes the meaning of the sentence. Therefore 'red' is 'C'.

The following sentence is incomplete in meaning: 'They appointed him'. We do not know they appointed him as what, as Secretary, Clerk, Accountant, or as a Steno.

But if the sentence is: 'They appointed him (as) Secretary', the word 'Secretary' completes the meaning of the sentence and as such it is 'C'.

The basic difference between the 'Object' and the 'Complement' is that 'Object' can be used to change the verb into the Passive Voice but a 'Complement' cannot be used for this purpose. For example.

He wrote a letter. (Active Voice)

A letter was written by him. (Passive Voice)

'They appointed him Captain'. The word 'Captain', cannot become the Subject in the Passive form, only 'he' (him) can serve this purpose.

'C' comes after verbs in the 'be' form, am, is, are, was, were, etc.

Examples

He is a doctor.

I am a student.

Similarly the verbs 'become' 'make' 'appoint', 'choose', 'select', 'elect' 'nominate', etc. have a 'C'

Examples

He became a Journalist.

They chose him Captain.

Examples

1. He met his friend yesterday.

He	-	S
met	-	V
his friend	-	O
yesterday	-	A

2. I will write an essay tomorrow.

I	-	S
will write	-	V
an essay	-	O
tomorrow	-	A

3. Yesterday he met his friend at his house at 6 O' clock in the evening.
- | | | |
|----------------|---|---|
| yesterday | - | A |
| he | - | S |
| met | - | V |
| his friend | - | O |
| at his house | - | A |
| at six o'clock | - | A |
| in the evening | - | A |

EXERCISE

Analyse the following sentences into S, V, O, C and A.

1. Today he has come.
2. I met him yesterday at his office.
3. They play chess everyday.
4. They made him Chief Secretary last year.
5. She sings songs beautifully.
6. I can drive a car easily.
7. You must read your lessons regularly.
8. Last week an accident occurred at P.S. Park.
9. We speak English fluently.
10. He wrote the reply carefully.
11. Geetha gave a dance performance last month.
12. My friend is a doctor.
13. They play chess everyday.
14. He was elected president last year.
15. The leader addressed the crowd cheerfully.
16. By the beginning of March, Iraq withdrew its forces from Kuwait.
17. The door opened with a bang.
18. You must read your lessons regularly.
19. He wrote the answer carefully.
20. I met my friend last week.
21. He was going to his office.
22. The sun rises in the east.
23. The magazine published my poem.
24. Last week I met him at Madras.
25. The postman brought her a parcel yesterday.
26. Babu writes slowly.
27. I met him yesterday at the office.
28. They appointed him captain last year.

CHAPTER

19

Subject – Verb Agreement

The verb must agree with its subject in number and person.

If the subject is singular, the verb will also be singular. If the subject is plural, the verb must also be plural.

E.g. I am, we are, you are, he is, she is, it is, they are.

Examples

- Two or more singular subjects connected by *and* usually take a verb in the plural.
Rajan and Gopal *are* friends.
Fire and water *do* not agree.
Alex and his parents *have* gone home.
Vijay and his father *have* not returned yet. (not *has*)
- If two singular nouns refer to the same person or thing, the verb must be singular. The Article is used once when the two nouns refer to the same person.
The Secretary and Correspondent *has* come.
The orator and statesman *is* dead.
If different persons were referred to, the article would be used before each noun and the verb would be plural.
The Secretary and the Correspondent *have* come.
- If two subjects together express one idea, the verb may be in singular.
Bread and butter *is* wholesome food.
Slow and steady *wins* the race.
The long and the short of the matter *is* this.
- Either, neither, any, each, everyone, many a, must be followed by a singular verb.
Neither of them *is* good at English.
Either of them *deserves* a prize.
Many a man *has done* this before.
Everybody who *has* a fever must go home immediately.
Each student *has won* the prize.
- Nobody, no one, nothing, somebody, someone, something*, should be followed by a singular verb.
Nobody *works* harder than Alex does.
No problem *is* harder to solve than this one.
Something *is* better than nothing.
Someone *has broken* the chair.

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6. Two or more singular subjects connected by *or*, *nor*, *either or*, *neither nor*, take a verb in singular.
 Either Abdul or Rahim *has* taken your pen.
 Neither John nor his brother *was* there.
7. When subjects joined by *or*, *nor* are of different numbers, the verb must be plural and the plural subject must be placed next to the verb.
 Sita or her parents *have* come.
 Neither the Principal nor the Professors *were* present.
 Either he or his friends *have made* this mistake.
8. When the subjects joined by *or*, *nor*, are of different persons, the verb agrees in person with the subject nearer to it.
 Either you or he *has* done it.
 Either he or I *am* responsible for it.
9. A collective noun takes a singular verb when the collection is thought of as one whole; a plural verb when the individuals of which it is composed are thought of.
 The committee *has* chosen its President.
 The committee *are* divided on this point.
10. If a title of a literary work, or the name of a house or a hotel, is a plural, for purposes of agreement it is treated as a singular, since it is only one title or one building.
Gulliver's Travels *was* written by Swift.
The Arabian Nights *has* delighted many generations.
11. When the subject is *one of*, followed by a plural noun, the verb is singular.
 One of my friends *has* gone abroad.
 One of his uncles *is* a doctor.
12. When the subject is the formal *there*, the verb agrees with the 'real' subject that follows it.
 There *are* many books in our library.
 There *is* a book on a table.
 There *are* several pages missing from this book.
 There *is* a cause for everything.
 There *was* an accident here last week.
13. When a plural number applies to distances, weights, heights or amounts of money and represents a single figure or quantity, it is treated as a singular and takes a singular verb.
 Fifty kilometres *is* a good distance.
 Five hundred rupees *is* a good sum of money.
14. 'Class' nouns such as clothing, food, furniture, crockery, cutlery, stationery and footwear are singular, and must therefore take a singular verb.
 The furniture in this room *is* very old.
 Much food *was* wasted.

15. *A pair of* when applied to things where the two components are always thought of together is singular.
 There *is* a pair of scissors on the table.
 A pair of shoes *costs* much.
 But if you omit the words 'a pair of' and merely use the plural word, then, of course, it must take a plural verb.
 Those scissors *are* costly.
 These shoes *are* new.
16. *A lot of, a great deal of, plenty of, most of* and *some of* are singular when they refer to amount or quantity, but plural when they refer to number.
A lot of work *is* still pending.
A lot of people *prefer* tea to coffee.
There are plenty of I.T. courses available now.
17. *Poultry, people* and *cattle* are plural.
 Those poultry *are* mine.
 These people *are* good.
 Whose cattle *are* these?
18. Some nouns which are plural in form, but singular in meaning, take a singular verb: news, politics, economics, physics, ethics, civics, innings, mathematics, etc.
 No news *is* good news.
 Mathematics *is* a very interesting subject.
 The first innings *is* over.
19. Words joined to a singular subject by *with, together with, in addition to*, or, *as well as*, etc., are parenthetical, and therefore do not affect the number of the verb.
 The Chief with his followers *was* present there.
 The cow as well as the horse *eats* grass.
 The President, with the members of the Trust, *has* arrived.
20. *One* should be followed by *one*.
One should do *one's* duty.
21. The expression *one of* is followed by a plural noun but always takes a singular verb:
 One of my sisters *is* a doctor.
 One of his friends *is* a mill owner.
22. In the present tense of most English verbs the third person singular ends in –s.
 She *speaks* English fluently.
 She dances well.
 My friend *likes* swimming.
23. *None* can take either a singular or plural verb depending on the noun which follows it.
 None + of the + non-count noun + singular verb
 E.g. None of the counterfeit money *has* been found.
 None + of the + plural count noun + plural verb.
 E.g. None of the students *have* finished the exam yet.

EXERCISE

Correct the following sentences using Subject – Verb agreement.

1. The book about the changes in airplanes during the two World Wars were quite interesting. (M.Q.P. 2001)
2. None of the tomatoes was salvaged from the overturned truck. (M.Q.P. 2001)
3. Each are confident that he or she knows all the facts. (M.Q.P. 2001)
4. The cost of the computers are dropping day-by-day. (M.Q.P. 2001)
5. A series of lectures were delivered last month. (Apr. '94)
6. A team of civil engineers have just inspected the site. (Apr. '97)
7. The equipments from Delhi have not arrived yet. (Nov. '97)
8. Either Raja or Mani have taken my key. (Apr. '98)
9. I am now remembering what he said. (Nov. '98)
10. You are ready, isn't it? (Apr. '99)
11. One must do his duty. (Nov. '99)
12. Kumar is one of my good friend. (Oct. 2000)
13. One of the students have a car. (Oct. 2000)
14. Neither his father nor his mother are alive.
15. The difficulty of obtaining pure milk and ghee are great.
16. Iron as well as gold are found in India.
17. Bread and butter are wholesome food.
18. Not one of you have done their work properly.
19. Each of the boys were rewarded.
20. No news are good.
21. These news are good.
22. *Tom Brown's School Days* are highly interesting.
23. One or the other of those fellows have stolen the watch.
24. Each of the suspected men were arrested.
25. The formation of paragraphs are important.
26. Five rupees are an excessive price for this pen-knife.
27. The jury is divided in their opinion.
28. Rama, as well as his brother, have come.
29. Which one of these umbrellas are yours?
30. Three tons of tin costs six hundred pounds.
31. Neither of them are remarkable for precision.
32. Milton was one of the greatest poets that has ever lived.
33. He is one of my best friend.
34. All the food have been wasted.
35. Most of the money have now been spent.
36. All the luggage have now been inspected by the customs officials.

37. Ill news travel fast.
38. A pair of spectacles are lying on the table.
39. There is plenty of books on the subject.
40. Each student have answered the first three questions.
41. A new car cost a lot of money.
42. One of the players come from Coimbatore.
43. Four ounces are the smallest quantity we sell.
44. Ten miles are a long way to walk.
45. The tallest of the three boys live next door to me.
46. The cost of all these articles have risen.
47. Mathematics are his weakest subject.
48. The stationeries have been ordered.
49. His father gave him good advices.
50. Politics are a very interesting subject.
51. Neither side have scored any goal.

CHAPTER

20

Tag Questions

Tag questions are questions attached to the end of a statement in order to draw attention to it or to give it added force.

For example : It is correct, isn't it?

Formula : $V + n't + S?$

He is a doctor, *isn't* he?

I was busy, *wasn't* I?

They have plenty of money, haven't they?

Short forms

can + not - can't

will + not - won't

shall + not - shan't

You can do it, *can't* you?

He will go there, *won't* he?

Verbs like am, is, are, was, were, do, does, did, has, have, had, will, would, can, could, shall, should, may, might, and must are repeated.

If the verb is in the present tense, use *do* or *does*. If the verb is in the past tense, use *did*

Examples

They speak English, *don't they?*

She speaks English, *doesn't she?*

I know you, *don't I?*

He knows you, *doesn't he?*

They play cricket, *don't they?*

He plays cricket, *doesn't he?*

You wrote that essay, *didn't you?*

He went to Madras, *didn't he?*

They came late, *didn't they?*

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Rule I

In the formula V+n't+S? the 'S' or subject must always be a pronoun: I, We, You, He, She, It and They. The formal subject 'There' is also the subject of the tag.

Examples

Your father is a doctor, *isn't he?*

Rajan is a student, *isn't he?*

Gopal came late, *didn't he?*

There are forty students in this class, *aren't there?*

1. I am = aren't I?
I am your neighbour, aren't I?
I am a student, aren't I?
2. Let us or Let's = shall we?
Let us do it, shall we?
Let's go for a walk, shall we?
3. Verb + other words = will you? or won't you?
Do this work, will you? or won't you?
4. Everybody, everyone, etc. + verb singular = verb plural +n't + they?
Everyone has come, haven't they?
Everybody cheered wildly, didn't they?
5. Some of us = S = We
Some of us wanted to stay longer, didn't we?
6. Some of you = S = You
Some of you are learning English, aren't you?

Rule II**Negative Statements**

A positive statement takes a negative tag and a negative statement takes a positive tag.

Compare :

1. It is correct, isn't it? (V+n't+S?)
It is not correct, is it? (V+S?)
2. He will come, won't he?
He won't come, will he?
 - (a) No, none, no-one, nothing, nowhere, etc. are negative.
None of the food was wasted, was it?
We saw no-one we knew, did we?
A small scratch like that is nothing, is it?
Money goes nowhere nowadays, does it?
 - (b) Little, few, hardly, scarcely, rarely and seldom are treated as negatives and take a positive tag.
Few people know the answer, do they?
Little progress has been made, has it?
We could scarcely hear what he said, could we?
We seldom see them nowadays, do we?

- (c) Though few and little are negative, a few and a little are positive and therefore need a negative tag.
 A few people knew the answer, didn't they?
 A little progress has been made, hasn't it?
- (d) The adverb 'only' may take either a positive or a negative tag.
 There were only six people present, were there?
 There were only six people present, weren't there?
 The positive is more usual.
- (e) Used to = did
 She used to be quite a good tennis player, didn't she?
- (f) I am = aren't I?
 I am not = am I?
 I am your friend, aren't I?
 I am not happy, am I?

EXERCISE

Remember that when you add the tag the existing full stop must be changed to a comma.

Add the appropriate tag to the following sentences.

1. We haven't had our lunch yet.
2. We were only just in time.
3. The car broke down at a most awkward time.
4. Everyone is liable to make mistakes.
5. She will miss the train if she doesn't hurry.
6. The garden looks very attractive.
7. The journey was not an easy one.
8. The attendant would not let us in.
9. I never drink tea.
10. The hotel was not expensive.
11. Let's go and see their new house.
12. He easily loses his temper.
13. Most of us voted against the proposal.
14. There won't be time to get lunch before the lecture.
15. The house needs re-painting.

CHAPTER

21

Phrasal Verbs

A *Phrasal verb* is a simple verb combined with an adverb or a preposition, or sometimes both, to make a new verb with a meaning that is different from that of the simple verb.

e.g. *go in for*, *win over*, and *blow up*.

Examples

1. *abide by* (to accept or obey an agreement, rule, or decision)
If you join a club, you have to *abide by* its rules.
2. *abound in / with* (to contain a lot of something)
This river *abounds in* fish.
3. *accede to* (to agree to something that someone has asked for)
He did not *accede to* my request.
4. *account for* (to explain the reason for something or the cause of something)
Can you *account for* your absence last Friday?
5. *add up to* (to become a particular amount)
The numbers *add up to* exactly 100.
6. *adhere to* (to obey a rule or principle)
Companies failing to strictly *adhere to* safety guidelines are penalised.
7. *aim at* (to try to achieve something)
We must *aim at* increasing exports.
8. You must *allow for* some variations in the theme (to provide something for a purpose or in estimating something)
You must *allow* three metres *for* a long-sleeved dress.
9. *allude to* (to mention somebody, something briefly or indirectly)
You *alluded* in your speech *to* certain developments - what exactly did you mean? You *alluded to* certain developments in your....
10. *arrive at* (to reach a place, especially at the end of a journey)
We *arrived at* the station three minutes late.
11. *aspire to* (to have a strong desire or ambition to gain or achieve something)
The film *aspires to* be a serious historical study.
12. *attend to* (to concentrate on somebody/ something)
You must *attend to* your work and stop talking.
13. *back out* (to withdraw from an agreement, a promise, etc.)
It's too late to *back out of* the deal now.

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14. *back up* (to support)
He was *backed up* by his friends.
15. *bank on* (to rely on)
I'm *banking on* your help.
16. *bear out* (to show that a story, etc., is true)
The other witnesses will *bear out* what I say.
17. *believe in* (to feel sure of the existence of something)
Do you *believe in* ghosts?
18. *belong to* (to be the property of somebody)
The earth does not *belong to* man; man *belongs to* the earth.
19. *blow over* (to go away without having a serious effect)
The storm *blew over* in the night.
20. *blow up* (to explode)
The bomb *blew up*.
21. *break off* (to stop speaking)
He *broke off* in the middle of a sentence.
22. *break down* (to stop working because of a mechanical, electrical fault)
Our car *broke down* on the way.
23. *break out* (to start suddenly)
Fire *broke out* during the night.
24. *break up* (of members of a group to go away in different directions)
The meeting *broke up* at 11 O' clock.
25. *build up* (become greater, larger in number or more intense)
Traffic is *building up* on roads into the city.
26. *burst into* (to start producing something suddenly and with great force)
The aircraft crashed and *burst into* flames.
27. *call off* (to cancel or abandon something)
The strike has been *called off*.
28. *call on / upon* (formally to invite or request somebody to speak)
I now *call upon* the chairman to address the meeting.
29. *call for* (request or demand for something)
The President made a *call for* national unity.
30. *carry on* (to continue)
Carry on with your work.
31. *carry out* (to fulfil something)
We will *carry out* the necessary work.
32. *catch on* (to become popular or fashionable)
Mini-skirts first *caught on* in the 1960s.

33. *come about* (to happen)
Can you tell me how the accident *came about*?
34. *come across* (to meet or find somebody / something by chance)
She *came across* some old photographs in a drawer.
35. *consist of* (to be composed of)
The committee *consists of* ten members.
36. *cut down* (to reduce the amount or quantity of something)
The doctor told him to *cut down* on his drinking.
37. *deal in* (to sell something)
We *deal in* computer software.
38. *deal with* (to have social, business, etc., relations with somebody)
He has to *deal with* all kinds of people.
39. *drop out* (to leave school, university, etc., without finishing one's courses)
She started doing an engineering degree but *dropped out* after only a year.
40. *end in* (to have something as a result or conclusion)
Their long struggle *ended in* failure.
41. *end up* (to reach or come to a certain place)
If you go on like this you'll *end up* in prison.
42. *fall out* (to become loose and drop)
His hair is *falling out*.
43. *fall back on* (to go to somebody for support or have something to use when in difficulty)
We can always *fall back on* candles if the electricity fails.
44. *fall through* (to fail to be completed)
Their plans *fell through* because of a sudden death in the family.
45. *fill in* (to add what is necessary to make something complete)
He *filled in* the application form.
46. *fill up* (to become or make something completely full)
He *filled up* the tank with petrol.
47. *fit in* (to be in harmony with somebody / something)
Do these plans *fit in* with your arrangements?
48. *get away* (to escape from somebody or a place)
Two of the prisoners *got away* from their captors.
49. *get rid of* (to be / become free of somebody / something that causes one annoyance or trouble)
He *got rid of* his bad habits.
50. *get through* (to be successful in or pass an examination, a test, etc.)
Raj failed but his sister *got through*.
51. *give up* (to abandon an attempt to do something)
They *gave up* without a fight.

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52. *go through* (to look up or to examine something carefully, especially in order to find something)
I always start the day by *going through* the mail.
53. *insist on / upon* (to demand something forcefully)
I *insist on* your taking immediate action to put this right.
54. *look out for* (to be aware of the possibility of somebody coming or something happening and try to avoid them / it).
You should *look out for* pick pockets.
55. *look through* (to examine or read something especially quickly)
She *looked through* her notes before the examination.
56. *make out* (to manage, to survive, to fare)
How did he *make out* while his wife was away?
57. *make up* (to form or constitute something)
Animal bodies are *made up* of cells.
58. *put on* (to dress oneself in something)
Which dress shall I *put on* for the party?
59. *put out* (to stop something burning, to extinguish)
Foremen soon *put out* the fire.
60. *put up with* (to tolerate or bear somebody / something)
I don't know how she *puts up with* his drinking.
61. *rely on / upon* (to need or be dependent on somebody / something)
Nowadays we increasingly *rely on* computers to regulate the flow of traffic in the town.
62. *see through* (to realise the truth about somebody / something so that one is not deceived)
We *saw through* him from the start.
63. *set out* (to leave a place and begin a journey)
We *set out* at dawn.
64. *set up* (to place or build something)
They *set up* a monument in memory of their departed hero.
65. *settle down* (to become or make somebody calm, less lively, excited, etc.)
Settle down and be quiet!
66. *turn up* (to arrive; to make one's appearance)
We arranged to meet at the cinema at 1.30, but he never *turned up*.

CHAPTER

22

Modal Verbs

Modal verbs give a degree of certainty to the action performed.

I. CAN

1. **Ability** to be able to

Examples

Can you drive?

She *can* speak four languages.

2. **Permission** to be allowed to

Examples

Can I use your bike, John?

You *can* park over there.

3. **Request** used to request something

Examples

If you see Adrian, *can* you tell him I'm in London next weekend?

Can you make a little less noise, please? I'm trying to work.

4. **Possibility** used to express possibility

Examples

You *can* get stamps from the local news agents.

Smoking *can* cause cancer.

5. **Offer** used in polite offers of help

Examples

Can I help you with those bags?

6. **Cannot** the negative form of the verb, 'can'

Examples

I *cannot* predict what will happen next year?

II. COULD

1. **Permission** used as a more polite form of 'can' when asking for permission

Examples

Could I speak to Mr Davis, please?

Excuse me, *could* I just say something?

2. **Request** used as a more polite form of 'can' when asking someone to provide something or do something

Examples

Could you lend me £5?

3. **Possibility** used to express possibility, especially slight or uncertain possibility

Examples

A lot of crime *could* be prevented.

She could arrive anytime now.

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4. **Suggest** used for making a suggestion

Examples

We *could* go for a drink after work tomorrow, if you like.

You *could* always call Susie and see if she might babysit.

III. HAVE

1. **Must** have (got) to do something to need to or be forced

Examples

I *have* to go to Manchester tomorrow on business.

What time *have* you got to be there?

Do we *have* to finish this today?

IV. MAY

1. **Possibility** used to express possibility

Examples

There *may* be other problems that we don't know about.

I *may* see you tomorrow before I leave.

2. **Permission** used to ask or give permission

Examples

A reader *may* borrow up to six books at any one time.

3. **Wish** used to introduce a wish or a hope

Examples

May you have a long and fruitful marriage.

V. MIGHT

1. **Possibility** used to express the possibility that something will happen or be done, or that something is true although not very likely

Examples

I *might* come and visit you in America next year, if I can save enough money.

2. **Permission** used as a more polite form of 'may' when asking for permission

Examples

Might I ask a question?

I wonder if I *might* have a quick look at your newspaper?

3. **Suggestion** used to make a suggestion or suggest a possibility in a polite way

Examples

You *might* like to try a little more basil in the sauce next time.

I thought you *might* like to join me for dinner.

VI. MUST

1. **Necessary** used to show that it is necessary or very important that something happens in the present or future

Examples

Meat *must* be cooked thoroughly.

I *must* get some sleep.

You *mustn't* show this letter to anyone else.

Luggage *must* not be left unattended.

2. **Necessary** If you say that you must do something, you mean that you have a definite intention to do something in the future
Examples
 I *must* phone my sister.
 We *must* get someone to fix that wheel.
3. **Necessary** used for emphasis
Examples
 I *must* say, you're looking extremely well.
 I *must* admit, I wasn't looking forward to it.
4. **Necessary** If you tell someone else that they must do something pleasant, you are emphasising that you think it is a good idea for them to do that
Examples
 You *must* come and stay with us for the weekend.
 We *must* meet for lunch soon.
5. **Probably** used to show that something is very likely, probable or certain to be true
Examples
 Harry's been driving all day—he *must* be tired.
 There's no food left—we *must* have eaten it all.
 When you got lost in the forest you *must* have been very frightened.
 "You *must* know Frank." "No, I don't."

VII. OUGHT

1. **Duty** used to show when it is necessary, desirable or advantageous to perform the activity referred to by the following verb
Examples
 You *ought* to be kinder to him.
 We *ought* not/*oughtn't* to have agreed without knowing what it would cost.
 "We *ought* to be getting ready now." "Yes, I suppose we *ought* (to)."
2. **Probable** used to express something that you expect will happen
Examples
 He *ought* to be home by 7 O'clock.
 They *ought* to have arrived at lunchtime but the flight was delayed.
 If you show the receipt, there *ought* not/*oughtn't* be any difficulty in getting your money back.

VIII. SHALL

1. **Future** used instead of 'will' when the subject is 'I' or 'we'
Examples
 If you do that one more time, I *shall* be very cross.
 I *shall* never forget you.
Shall we be able to get this finished today, do you think?
 I'm afraid I *shall* not/*shan't* be able to come to your party.
2. **Suggest** used, with 'I' or 'we', to make a suggestion
Examples
 "I'm cold." "Shall I close this window?"
Shall we go out for dinner tonight?
Shall I pick the children up from school today?

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3. **Certainly will** used to say that something certainly will or must happen, or that you are determined that something will happen

Example

Don't worry, I *shall* be there to meet you today.

IX. SHOULD

1. **Duty** used to say or ask what is the correct or best thing to do

Examples

If you're annoyed with him, you *should* tell him.

You *should* change trains at Peterborough if you're going to Newcastle.

"*Should* I apologise to him?" "Yes, I think you *should*."

You *should* be ashamed of yourselves.

This computer isn't working as it *should*.

There *should* be an investigation into the cause of the disaster.

He said that I *should* see a doctor.

I *should* have written to her but I haven't had time.

2. **Probable** used to show when something is likely or expected

Examples

My dry cleaning *should* be ready this afternoon.

You *should* find this guidebook helpful.

I wonder what's happened to Annie. She *should* be here by now. (it was expected that she would be)

3. **Possibility** used when referring to a possible event in the future

Examples

If anyone *should* ask for me, I'll be in the manager's office.

Should you (if you) ever need anything, please don't hesitate to contact me.

4. **Possibility** used after 'that' and adjectives or nouns that show an opinion or feeling

Examples

It's odd that she *should* think I would want to see her again.

It's so unfair that she *should* have died so young.

5. **Possibility** used after 'that' to suggest that a situation possibly exists or might come into existence

Example

We agree that the money *should* be paid tomorrow.

6. **Possibility** used after 'so that' and 'in order that' to show purpose

Example

He took his umbrella so that he *shouldn't* get wet.

7. **Possibility** used after 'for fear that', 'in case' and 'lest'

Example

He took his umbrella in case it *should* rain.

8. **Advise** used after 'I' when giving advice

Examples

I *shouldn't* worry about it if I were you.

I *shouldn't* (I advise you not to) let it worry you.

9. **Reason** used after 'why' when giving or asking the reason for something

Examples

Why *should* anyone want to eat something so horrible?

Why *shouldn't* she buy it if she can afford it?

X. WILL

1. **Future** used to talk about what is going to happen in the future, especially things that you are certain about or things that are planned

Examples

Clare *will* be five years old next month.

The train leaves at 8.58, so *we'll* be in Scotland by lunchtime.

I'll see him tomorrow. *I'll* be seeing him tomorrow.

Will Susie be there?

It *won't* be easy to find another secretary.

There'll be trouble when she finds out.

2. **Able/Willing** used to talk about what someone or something is able or willing to do

Examples

I'll give you a lift.

Ask Ian if *he'll* take them.

I've asked her but she *won't* come.

The car *won't* start.

3. **Request** used to ask someone to do something

Examples

Will you give me her address?

Will you give that to Tony when you see him, please?

4. **Request** used as a polite way of inviting someone to do something, or of offering someone something

Examples

Will you join us for a drink, Evie?

Will you come in for a while?

You'll have some cake, won't you, Charles?

5. **If** used in conditional sentences that start with 'if' and use in the present tense

Examples

If he's late again, *I'll* be very angry.

6. **Always** used when referring to something that always or usually happens

Examples

Accidents *will* happen.

The product with the better-known brand name *will* always sell better.

She's 85 now, but she *will* insist on doing all her own housework.

7. **Likely** used to refer to what is likely

Examples

That'll be Scott at the door.

That'll be his mother with him.

As you *will* all probably already know, election day is next week.

XI. WOULD

1. **Future** used to refer to future time from the point of view of the past

Examples

He said he *would* see his brother tomorrow.

They knew there *would* be trouble unless the report was finished by the next day.

We realised it *wouldn't* be easy to find another secretary.

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2. **Future** would have used to refer back to a time in the past from a point of view in the future

Example

We thought they *would* have got home by 5 O'clock, but there was no reply when we phoned.

3. **Intention** used to refer to an intention from the point of view of the past

Examples

He said he *would* always love her (He said "I will always love you").

They promised that they would help.

There was nobody left who *would* (was willing to) do it.

I asked him to move his car but he said he *wouldn't* (he refused).

4. **Possible** used to refer to a situation that you can imagine happening

Examples

I *would* hate to miss the show.

I'd go myself but I'm too busy.

It *would* have been very boring to sit through the whole speech.

5. **Possible** used with 'if' in conditional sentences (sentences which refer to what happens if something else happens)

Examples

What *would* you do if you lost your job?

If I'd had time, I *would* have gone to see Graham.

6. **Request** used as a more polite form of 'will' in requests and offers

Examples

Would you mind sharing a room?

Would you like me to come with you?

Would you like some cake?

7. **Wish** would rather/sooner used to show that you prefer to have or do one thing more than another

Examples

I'd rather have a beer.

Which *would* you sooner do—go swimming or play tennis?

Wouldn't you rather finish it tomorrow?

He'd rather die than (He certainly does not want to) let me think he needed help.

8. **Opinion** used to express an opinion in a polite way without being forceful

Examples

I *would* imagine we need to speak to the headteacher about this first.

It's not what we *would* have expected from a professional service.

9. **Likely** used to refer to what is quite likely

Example

"The guy on the phone had an Australian accent." "That *would* be Tom, I expect."

10. **Advise** should

Example

I *wouldn't* (= I advise you not to) worry about it, if I were you.

11. **Reason** should

Example

Why *would* anyone want to eat something so horrible?

(Courtesy: Cambridge Advanced Learner's Dictionary)

CHAPTER

23

E-mail

In e-mail and other computer applications (for example, chat rooms) people also use unusual kinds of English. Internet abbreviations are sometimes used, taking the first letter from longer phrases: Emoticons or 'smileys' are also common. These are punctuation marks used to show your feelings. Here are some examples:

WRITING E-MAILS

INTERNET ABBREVIATIONS		SMILEYS
FYI	= for your information	;-) = joking
BTW	= by the way	:-) = happy
LOL	= laughing out loud	:-(= sad

People communicate using e-mail for many different reasons. It can be used to send single word answers, formal documents or even jokes. The way you write your e-mail depends on how well you know the person you are sending it to. People often write e-mails in the same way they speak so it is typically less formal than other forms of writing.

The diagram illustrates the components of an email and provides context for each part through annotations:

- Header:**
 - To:** Mairi MacDonald <mmacdonald@cambridge.org>
 - From:** Harriet Duffton <hdufton@mellor.net>
 - Subject:** party
 - Cc:** annbarber@mail.com
 - Bcc:**
 - Attached:** C:\My Documents\map.doc;
- Body:**
 - Greeting: Mairi,
 - Message: Sat 29th July - We are having a house-warming party and it would be great if you could come - you are more than welcome to stay over - I think Ann is coming too :-)
 - Response: Thanks for your email - I will talk to you properly - email soon - lots to catch up on !!! But I just wanted to check if you could come to our party - if you are able to come then I can pick you up at the station.
 - Closing: Anyway - talk to you soon and hopefully see you soon too !
love
Harriett xxx

Annotations:

- the email address of anyone who you want to have a copy of the message** (points to the 'To' field)
- other computer files which you are sending with the email** (points to the 'Attached' field)
- Emails often contain symbols known as 'smileys'.** (points to the smiley :-)
- If you know the other person well, it is not necessary to write in complete sentences.** (points to the informal tone of the body text)
- Emails can start like ordinary letters "Dear..." , but often this is left out. You can start an email without writing anybody's name or with "Hello" or "Hi!"** (points to the informal greeting 'Mairi,')

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Notes on Writing E-mails

1. Do not write in capitals because it looks as if you are SHOUTING.
2. You can use *asterisks* to emphasise something important: *Please note there is *no* meeting today.*
3. Use _underscores_ for titles or something you want to underline.
4. /Slashes/ can be used around a word or phrase that you want to put in italics.

INTERNET ABBREVIATIONS

1. .ac.uk
The last part of an Internet address that belongs to a British university or college
2. AFAIK, afaik
As Far As I Know: used when you believe that something is true, but you are not completely certain
3. AFK, afk
Away From Keyboard: used when you stop taking part in a discussion in a chat room for a short time
4. a/s/l?
Age, Sex and Location: used when you are talking to someone in a chat room and you want to ask how old they are, if they are male or female, and where they live:
“a/s/l?” “20/f/London (I am 20, I am female and I live in London)”
5. BAK, bak
Back At the Keyboard: used when you return to a discussion in a chat room after you have left it for a short time
6. BCNU, bcnu
Be seeing you: a way of saying goodbye at the end of an e-mail or when leaving a discussion in a chat room
7. BF, bf
Boyfriend
8. <bg>
Big grin: used to show that you are smiling a lot in an e-mail or when talking to someone in a discussion in a chat room
9. BRB, brb
Be Right Back: used when you stop taking part in a discussion in a chat room for a short time
10. BTW, btw
By The Way: used when you are writing something that relates to the subject you are discussing, but is not the main point of the discussion:
I hope you enjoyed your holiday in Paris. BTW, can you recommend a good hotel?
11. .com
Company: used in some Internet addresses which belong to companies or businesses:
www.yahoo.com
12. co.uk
The last part of an Internet address that belongs to a British company
13. CU, cu
See you: used when saying goodbye at the end of an e-mail or text message (text sent by telephone) to a friend
14. .edu
Education: used to show that an Internet address belongs to a university or college:
To contact our Australian branch, e-mail us at info@cambridge.edu.au
15. f2f
face to face: used in an e-mail or chat room to describe a situation where you meet and talk to someone, rather than communicate electronically

16. FWIW, fwiw
For What It's Worth: used when you are giving someone information and you do not know if it is useful or not
17. FYA, fya
For Your Amusement: used when you send someone a joke by email
18. FYI, fyi
For Your Information: used when you send someone an announcement or tell them something that you think they should know
19. GMTA, gmta
Great Minds Think Alike: used when two people write the same thing when they are discussing something in a chat room, or when two people have the same idea
20. gov
government: used to show that an Internet address belongs to a government organisation:
www.nasa.gov
21. GTG, gtg
Got To Go
22. HHOK, hhok
Ha Ha Only Kidding: used in an e-mail or in a discussion in a chat room to show that you have written something that is not true and is a joke
23. HTH, hth
Hope This Helps: used when you send somebody information that you think is useful, often when answering a question
24. IIRC, iirc
If I Remember Correctly
25. IMHO, imho
In My Humble Opinion: used when you tell somebody your opinion
26. IMO, imo
In My Opinion
27. IOW, iow
In Other Words: used to introduce an explanation that is simpler than the one given earlier
28. <L>
laughing
29. L8R, l8r
later
30. LOL, lol
Laughing Out Loud: used when you think something is very funny
31. ltd.uk
the last part of an Internet address for a British company whose shares can be bought by members of the public
32. .mil
military: used to show that an Internet address is connected with a country's army
33. OIC, oic
Oh, I See: used to show that you understand what someone has said
34. .org
organisation: used to show that an Internet address belongs to an organisation which does not intentionally make a profit:
You can search Cambridge dictionaries online at www.dictionary.cambridge.org.

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35. OTOH, otoh
On The Other Hand
the one hand ... on the other hand at hand (BODY PART)
36. PMJI, pmji
Pardon My Jumping In: used when you join a conversation in a chat room:
PMJI but what are you talking about?
37. ROTE, rotf
Rolling On The Floor: used to show that you think something is amusing
38. ROTFL, rotfl (Also ROFL)
Rolling On The Floor Laughing: used to show that you think something is very amusing
39. ROTFLOL, rotflol
Rolling On The Floor Laughing Out Loud: used to show that you think something is extremely amusing
40. <sp?>
Spelling?: used after a word whose spelling you are not certain of
41. TAFN, tafn
That's All For Now: used at the end of an e-mail or when you finish taking part in a discussion in a chat room
42. THX, thx
Thanks
43. TIA, tia
Thanks In Advance: used in an e-mail when you ask somebody for information or want them to do something for you
44. TPTB, tptb
The Powers That Be: used when you are referring to people who have authority and control:
If it were up to me, I'd say yes, but I'll have to check with TPTB.
45. TTFN, ttfn
Ta-Ta For Now: a way of saying goodbye at the end of an e-mail
46. YMMV, ymmv
Your Mileage May Vary: used to warn people that a piece of advice, although it has helped you, might not help them, or to say that different things are attractive to different people:
Their first album is better, but of course YMMV.
Courtesy : Cambridge Advanced Learner's Dictionary CD-Rom.

INTERNET SYMBOLS

1. %-)
confused, happy or drunk
2. :-&;
Tongue-tied: used when you find it difficult to express yourself
3. :-*
a kiss
4. :-(
Sad or angry
5. :-)
Happy

6. :-/ Mixed feelings: used when you have good and bad feelings about something
7. :-@ A scream: used when you want to say something loudly because you are angry
8. :'-(Crying
9. ;-) A wink: used to show friendliness or that you are not serious about what you have just written
10. {{ }} A hug
11. @ >-- , -- A rose
12. {{{}}} Hugs and kisses
13. <:-(A dunce (a stupid person)
14. >:-(Very angry
15. 0:-) An angel: used to show that you do not intend to be unkind, or that you have not done something illegal, immoral, etc.
16. 8-) Someone wearing glasses
17. :-I Bored or not interested
18. :-o Surprised or shouting
18. :-O Very surprised or shouting loudly
19. =:-o Frightened or surprised
20. :-P Tongue sticking out: used when you want to be rude to someone
21. :-X My lips are sealed: used when you do not want to or cannot tell someone about something

CHAPTER



Odd Words

An *odd word* is a word that is different from the others; it does not belong to the group.

- E.g. 1. Doctor, nurse, hospital, militant, patient
All the words in the group are related to health, but 'militant' is not. So 'militant' is the odd word.
2. Banana, grape, apple, rose, orange
All the words in the group are fruits, but 'rose' is not, it is a flower. So 'rose' is the odd word.

Examples

Identify the word that does not belong to the group. Say why it is different from the rest of the words in the group.

E.g. Doctor, Nurse, Hospital, Nomad, X-ray (Answer: Nomad) All the other words are about Health.

- I. (a) Iron, silver, mercury, zinc, copper
(b) Cars, ships, motorbikes, buses, vans
(c) Computer, chip, taperecorders, microprocessor, robot
(d) Agriculture, industry, harvest, farmer, seed (Apr./May 2003)

Answer

- (a) Mercury - All the others are solid metals.
(b) Ship - All the others are road vehicles.
(c) Taperecorders - All the others are related to the computer.
(d) Industry - All the others are related to agriculture.
- II. (a) Incident, happening, event, experiment, occurrence
(b) Lime, cement, bricks, juice, sand
(c) Wind power, petrol, solar power, bio-gas, pedal power
(d) Moon, stars, sun, satellite, mars (Nov./Dec. 2003)

Answer

- (a) Experiment - All the others refer to some event.
(b) Juice - All the others are from civil construction.
(c) Petrol - All the others are some form of power.
(d) Satellite - All the others are natural bodies, stars or planets.
- III. (a) Incident, happening, event, experiment, occurrence
(b) Lime, cement, juice, bricks, sand
(c) Angular, rectangular, circular, triangular, muscular
(d) Gold, silver, mercury, copper, iron (Jan. 2005)

Answer

- (a) Experiment - All the others refer to some event.
(b) Juice - All the others are from civil construction.
(c) Muscular - All the others are from geometry.
(d) Mercury - All the others are solid metals.

Do it Yourself

Identify the word that does not belong to the group. Say why it is different from the rest of the words in the group.

I

- (a) economy, per capita income, wealth, treasure
- (b) industrial, rates of production, prices, dramatic, consumption
- (c) schools, deserts, universities, rampant, colleges
- (d) swords, standstill, muskets, arms, weapons

II

- (a) schools, colleges, universities, institutions, temples
- (b) earth, sky, ocean, mountain, cricket
- (c) kerosene, diesel, petrol, sand, LPG
- (d) cement, juice, lime, sand, bricks

III

- (a) doctor, engineer, teacher, theatre, gardener
- (b) notebook, paper, pen, pencil, chair
- (c) sun, stars, sky, computer, moon
- (d) football, hockey, cricket, food, tennis

IV

- (a) maths, chemistry, lecturer, physics, english
- (b) multiplication, subtraction, addition, raining, division
- (c) breakfast, cinema, lunch, tiffin, supper
- (d) novel, essay, poem, fruit, drama

V.

- (a) ship, shoes, choose, sheep, share
- (b) got, lot, pot, hat, hot
- (c) same, shame, name, go, lame
- (d) high, dry, make, buy, fly

VI

- (a) radio, radar, reign, slow, reach
- (b) ring, sing, wing, take, king
- (c) Sunday, Monday, March, Tuesday, Wednesday
- (d) rice, wheat, vegetables, run, oil

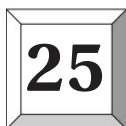
VII

- (a) accuse, prosecute, execute, play, punish
- (b) vote, elect, choose, smile, select
- (c) brother, sister, monkey, father, mother
- (d) train, ship, slow, plane, bus

VIII

- (a) manager, cashier, clerk, teller, jockey
- (b) urdu, Hindi, sweets, English, Tamil
- (c) India, street, Pakistan, England, Russia
- (d) tea, coffee, milk, water, laddu

CHAPTER



Infinitives and Gerunds

I. INFINITIVES

Infinitive = to+ verb; e.g., to go, to do, to write, to eat, etc.

Example

Seeing is believing.

To see is to believe.

Examples

Use Infinitives

1. Teach me swimming.
2. Giving is better than receiving.
3. Walking is a good exercise.
4. Waiting for the bus is tedious.
5. I like reading poetry.
6. Teaching grammar is very interesting.
7. I like swimming.
8. Talking loudly is bad manners.
9. He is glad meeting you.
10. Reading in poor light will affect the eyes.
11. Sheela did not like staying indoors during holidays.
12. Saying hundred words where none is called for is the mark of a successful politician.
13. He was afraid of hurting your feelings.
14. I do not like peeling potatoes.
15. Nobody really loves working.
16. She loves singing songs.
17. The miser hated spending money.
18. Mary hates riding her bicycle to school.
19. Smith gave up smoking because of his doctor's advice.
20. Harry is thinking of going to London in March.
21. We are accustomed to sleeping late on weekends.
22. There is no reason for leaving this early.
23. I can't risk going there.
24. Hunting tigers is a favourite sport in this country.
25. Teaching grammar is very interesting.

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26. He is afraid of hurting your feelings.
27. Leave the key with the Manager before going out.
28. He locked the bicycle before going to the post office.
29. After leaving the party, John drove home.

ANSWERS

1. Teach me to swim.
2. To give is better than to receive.
3. To walk is a good exercise.
4. To wait for the bus is tedious.
5. I like to read poetry.
6. To teach grammar is very interesting.
7. I like to swim.
8. To talk loudly is bad manners.
9. He is glad to meet you.
10. To read in poor light will affect the eyes.
11. Sheela did not like to stay indoors during holidays.
12. To say hundred words where none is called for is the mark of a successful politician.
13. He was afraid to hurt your feelings.
14. I do not like to peel potatoes.
15. Nobody really loves to work.
16. She loves to sing songs.
17. The miser hated to spend money.
18. Mary hates to ride her bicycle to school.
19. Smith gave up to smoke because of his doctor's advice.
20. Harry is thinking to go to London in March.
21. We are accustomed to sleep late on weekends.
22. There is no reason to leave this early.
23. I can't risk to go there.
24. To hunt tigers is a favourite sport in this country.
25. To teach grammar is very interesting.
26. He is afraid to hurt your feelings.
27. Leave the key with the Manager before you go out.
28. He locked the bicycle before he went to the post office.
29. After he left the party, John drove home.

II. GERUNDS

Definition A Gerund is that form of the verb which ends in *-ing* and has the force of a Noun and a Verb.

Example

Use the gerund form of the verb in the following

1. To modernise sick industries is difficult.

Answer

Modernising sick industries is difficult.

2. Her favourite pastime is to sing.
Singing is her favourite pastime.
Singing is formed from the Verb *sing* by adding *-ing*.
 We also see that it is used here as the Subject of a verb, and hence does the work of a Noun. It is therefore, a Verb-Noun and is called a Gerund.

Example

Use Gerund.

1. Always check the oil, before you *start* the car. (M.Q.P)
2. *To praise* all alike is to *praise* none.
3. I cannot go on *to do* nothing.
4. *To amass* wealth ruins health.
5. *To see* is *to believe*.
6. *To give* is better than *to receive*.
7. *To talk* like this is foolish.
8. I am tired *to wait*.
9. Children love *to make* mud castles.
10. He started *to study* after dinner.
11. We enjoyed *to see* them again after so many years.
12. Matthew was considering *to buy* a new car.
13. Ravi confessed *to steal* the jewels.
14. She insisted on *to take* the bus instead of the plane.
15. Lata is afraid *to get* married now.
16. Tom stopped *to study*.
17. I enjoy *to watch* T.V.
18. I can't help *to do* it.
19. He finished *to write* the essay.
20. Teach me *to swim*.
21. *To run* is always good for health.
22. I like *to read* poetry.
23. *To walk* is a good exercise.
24. *To talk* loudly is bad manners.
25. He is glad *to meet* you.
26. *To read* in poor light will affect the eyes.
27. Sheela did not like *to stay* indoors during holidays.
28. *To say* hundred words where none is called for is the mark of a successful politician.
29. Nobody really loves *to work*.
30. Before *I made* the decision, I thought carefully about it.
31. I like listening to music while *I drive* to work.
32. They sold their house before *they went* abroad.
33. After *he left* the party, John drove home.
34. He thought for a moment before *he answered* the call.

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35. _____ is good for health (run). (Apr. '97)
36. _____ more food is one of India's priorities (grow). (Nov. '94)
37. It is expensive to *modernise* sick industries(modernise). (Nov. '96, Apr. '97)
38. The government plans to *open* the market for foreign investors. (Oct. '97)
39. It is difficult to *achieve* 100 percent production in the plant. (Apr. '96)
40. His main concern was to *make* the citizens aware of their responsibilities (make). (Nov. '96)
41. His main concern was to *raise* money for the river cleaning project. (Apr. '97)
42. Complete the following sentence using a gerund and a suitable form of the given pronoun.
Do you mind (he, see) those photos again? (Apr. '98)

ANSWERS

1. Always check the oil, before starting the car.
2. Praising all alike is to praise none.
3. I cannot go on doing nothing.
4. Amassing wealth ruins health.
5. Seeing is believing.
6. Giving is better than receiving.
7. Talking like this is foolish.
8. I am tired of waiting.
9. Children love making mud castles.
10. He started studying after dinner.
11. We enjoyed seeing them again after so many years.
12. Matthew was considering buying a new car.
13. Ravi confessed stealing the jewels.
14. She insisted on taking the bus instead of the plane.
15. Lata is afraid of getting married now.
16. Tom stopped studying.
17. I enjoy watching T.V.
18. I can't help doing it.
19. He finished writing the essay.
20. Teach me swimming.
21. Running is always good for health.
22. I like reading poetry.
23. Walking is a good exercise.
24. Talking loudly is bad manners.
25. He is glad of meeting you.
26. Reading in poor light will affect the eyes.
27. Sheela did not like staying indoors during holidays.
28. Saying hundred words where none is called for is the mark of a successful politician.
29. Nobody really loves working.
30. Before making the decision, I thought carefully about it.
31. I like listening to music while driving to work.
32. They sold their house before going abroad.

33. After leaving the party, John drove home.
34. He thought for a moment before answering the call.
35. Running is good for health.
36. Growing more food is one of India's priorities.
37. It is expensive modernising sick industries.
38. The government plans opening the market for foreign investors.
39. It is difficult achieving 100 percent production in the plant.
40. His main concern was making the citizens aware of their responsibilities.
41. His main concern was raising money for the river cleaning project.
42. Do you mind my seeing those photos again?

EXERCISE I

Use Gerund

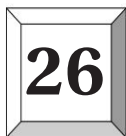
1. She loves to sing songs.
2. The miser hated to spend money.
3. Harry is thinking to go to London in March.
4. We are accustomed to sleep late on weekends.
5. I can't risk to go there.
6. He finished to write the essay.
7. To hunt tigers is a favourite sport in this country.
8. To teach grammar is very interesting.
9. He is afraid to hurt your feelings.
10. Leave the key with the Manager before you go out.
11. He locked the bicycle before he went to the post office.
12. They interview the candidates before they appoint them.

EXERCISE II

Use Infinitive

1. Teach me swimming.
2. Seeing is believing.
3. Lata is afraid of getting married now.
4. Tom stopped studying.
5. There is no reason for leaving this early.
6. I enjoy watching T.V.
7. I can't help doing it
8. Before making the decision, I thought carefully about it.
9. He thought for a moment before answering the call.

CHAPTER



Framing of Questions (‘Wh’ Type)

Example

The train arrives at 9 a.m.

Q: When does the train arrive?

‘Wh’-type questions begin with question words like ‘when’, ‘where’, ‘why’, ‘who’, ‘whose’, ‘while’, and ‘whom’.

Examples

Frame suitable questions for the statements given below.

1. He came here last week.
2. I was late because the bus was late.
3. I reached home at 9 O’clock.
4. The Principal gave away the prizes.
5. My father goes to the office at 8.30 a.m.
6. He bought the book yesterday.
7. The function is on Wednesday.
8. The Correspondent will preside over the function.
9. I am going to my native place next week.
10. Gopal knows the answer to this question.
11. He sells good cakes.
12. Mr John teaches us English.
13. She passed the examination last year.
14. The book costs Rs.50/-.
15. There are 15,000 books in our college library.
16. I keep it in my pocket.
17. Sugar makes tea sweet.
18. I have done ten exercises this week.
19. He met me this morning.
20. John Milton wrote *Paradise Lost*.

ANSWERS

1. When did he come here?
2. Why were you late?
3. When did you reach home?

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4. Who gave away the prizes?
5. When does your father go to the office?
6. When did he buy the book?
7. When is the function?
8. Who will preside over the function?
9. When are you going to your native place?
10. Who knows the answer to this question?
11. What does he sell?
12. Who teaches you English?
13. When did she pass the examination?
14. How much does this book cost?
15. How many books are there in your college library?
16. Where do you keep it?
17. What makes tea sweet?
18. How many exercises have you done this week?
19. When did he meet you?
20. Who wrote *Paradise Lost*?

CHAPTER



Close-ended Questions (‘Yes’ or ‘No’ Type)

These are questions for which one may be able to give only two possible answers—‘Yes’ or ‘No’.

Examples

Can you do it?

Yes, I can do it.

Did he come yesterday?

No, he did not come yesterday.

EXERCISE

Frame ‘Yes’ or ‘No’ type questions.

1. Yes, I am an old student of this college.
2. No, he is not a doctor.
3. Yes, yesterday was a holiday.
4. Yes, he won the first prize.
5. No, he does not know how to drive a car.
6. Yes, she is very happy.
7. Yes, I’ll attend the meeting tomorrow.
8. No, he is not an American.
9. Yes, I have passed the examination.
10. No, she didn’t qualify for the finals.
11. Yes, I can drive a car.
12. No, it is not my bicycle.
13. Yes, I can wait for a few minutes.
14. Yes, my father is a doctor.
15. No, she can’t speak French.
16. No, he won’t come tomorrow.
17. No, she is not a graduate.
18. Yes, he knows me.
19. Yes, this topic is interesting.
20. No, he did not attend the function.

CHAPTER



Describing a Process

A *Description* is a brief, factual, impersonal and vivid picture of words.

A *Process* is a series of actions or operations performed in order to make, do, or achieve something.

IMPORTANT TRAITS

1. Choice of Vocabulary
Words are not general and abstract. They are specific and concrete.
2. Clarity and Coherence
Step-by-step guidance is given specifying the action in a sequential order.
3. Unity
This feature is achieved by restricting the description to the related process and avoiding any deviation. The description should be in the impersonal tone. Passive Voice is used to achieve this. It is very common in scientific writing. We are more interested in the things that happen around us than the people who are behind them. The present tense is usually used.
e.g. The watch glass is washed and dried.
The mixture is heated.
A pinch of salt is added, etc.

Examples

1. Describe very briefly the process involved in the extraction of sugarcane juice. (Apr./May 2003)

Answer

Well-cleaned sugarcane pieces are inserted into the space between two serrated cylindrical rollers, which are then rotated manually causing clockwise and anticlockwise movements. Sugarcane pieces get crushed and then the extracted juice is collected.

2. Describe very briefly the process involved in washing clothes.

Answer

Soiled clothes are collected. A bucket of water is taken and three spoons of detergent are mixed with it. When the mixture is well lathered, the soiled clothes are soaked in it. After twenty minutes, the clothes are rigorously scrubbed to get the dirt out. Then they are rinsed in clean water twice, wrung and hung up on the line.

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3. Process involved in the purification of gold.

Answer

There are three ways in which gold is purified. They are flotation, amalgamation and cyanidation. In the first method, a frothing agent is added to produce foam. A collecting agent is used to produce a film on the gold, which then sticks to the air bubbles. Gold is then separated from the top. In amalgamation, the ore, mixed with water to form a pulp, is collected on a copper plate covered with mercury. The mercury is then removed, partly by squeezing it out and partly by distillation. The cyanide process is now widely used. In this process, a weak solution of sodium, potassium or calcium cyanide is used to dissolve the gold. The gold is then precipitated by the addition of zinc dust.

The gold thus obtained is smelted and cast into bars.

- (4) Process of extracting silver.

Answer

Silver occurs in ores of several metals. The froth process of extracting silver accounts for about 75 per cent of all silver recovered. Here the ore is ground to a powder, placed in large vats containing water suspensions of frothing agents and thoroughly agitated by jets of air. Depending on the agent used, either the silver bearing ore or the gangue adhering to the bubbles of the froth is skimmed off and washed. The final refining is done using electrolysis.

Do it Yourself

1. Describe the process of planting a sapling in your college.
2. Describe the process of opening a Savings Bank Account in a bank.
3. Describe very briefly the process of recording a song in a cassette.
4. Describe briefly the method of giving first aid to a person who has received an electric shock.
5. Describe very briefly the process of making a cup of tea.
6. Describe the process of mending the punctured tube of your two-wheeler.

CHAPTER



Reading Comprehension

‘Comprehension’ means ‘the power of understanding’. It is an exercise aimed at improving or testing one’s understanding of a language.

A comprehension exercise consists of a passage upon which questions are set to test the student’s ability to understand the content of the given text and to infer information and meanings from it.

Part II of the Question Paper will have a passage followed by a set of questions in the form of True or False statements, short answers, choosing the correct answer etc.,

Here are a few practical hints for your guidance:

1. Read the passage fairly quickly to get the general idea.
2. Read again, a little slowly, so as to know the details.
3. Study the questions thoroughly. Turn to the relevant portions of the passage, read them again, and then rewrite them in your own words, neatly and precisely.
4. If you are asked to give the meaning of any words or phrases, you should express the idea as clearly as possible in your own words.
5. Finally, after you have answered all the questions, go through them to check the grammar, spelling and punctuation of what you have written.

Examples

Passage 1

Read the following passage and answer the questions that follow.

It is like a horror movie without an end. Scenes of death and devastation brought on by the “worst ever quake to hit the country since independence” are now etched permanently in our memory. On the morning of January 26, the unstable earth under the Rann of Kutch in northern Gujarat heaved and collapsed causing an earthquake that recorded 6.9 in the Richter scale (China recorded 7.4 and the U.S. measured 7.9 due to different methods of calculation). But no scale can possibly measure the magnitude of the desolation and sorrow that the killer quake left behind in the villages, towns and cities of Gujarat. Places like Bhuj, Anjar, Bachau and Sukhpur have been completely flattened. Buildings collapsed trapping thousands of people in the rubble and left the survivors with nothing to live for. We saw the grief-stricken faces of those who had lost their families, distraught men, women and children huddled in the open in the cold night, terrified villagers on foot desperately looking for places that might be safe.

What causes an earthquake? The surface of the earth is made of huge plates. They slowly move over, under, and past each other. Sometimes the movement is gradual. At other times the plates lock into one another unable to release the energy created by the movement. When this accumulated energy grows strong enough, the plates break free and snap into a new position. Vibrations make the structures around quiver and shake and fall.

The fracture in the earth’s crust is called a “fault”. If all the stress has not been released, more tremors (aftershocks) can occur in the fault zone. The epicentre is the point on the earth’s surface directly above where the quake is focussed.

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Earthquakes can occur beneath the ocean floor. Then immense waves (tsunamis) as high as 15 metres caused by the freed energy travel across the waters at great speeds and reach the shores. They engulf the coastal areas and cause severe damage.

India has a grim history of earthquakes. Calcutta (1737, 300,000 dead) and Assam (1897) saw the worst of them. A series of tremors ravaged Udaypur, Uttarkashi, Chamoli, Latur and Jabalpur in the last twelve years. The Rann of Kutch itself lost 2000 people in the 1819 quake and again last year. Dams built in the quakeprone areas, concentration of population, decrease in ground water level can all be reasons for these disasters, say environmentalists. Dr. R. Bilham of Colorado warns that because of the southward movement of the surface, 60 per cent of the Himalayas are overdue for a quake.

1. Say whether the following statements are True/ False.
 - (a) Rann of Kutch suffered earthquake in the year 1897.
 - (b) Earthquakes in the oceans cause huge waves upto 15 metres.
2. Write short answers within 1 or 2 sentences.
 - (a) Mention what is 'fault'.
 - (b) What is epicentre?
3. Choose the correct option among the following.
 - (a) Mention which one of the following is not a cause for earthquake:
 - (i) Dams built in the quake prone areas.
 - (ii) Concentration of population.
 - (iii) Decrease in ground water.
 - (iv) Himalayan mountains.
 - (b) The exact power of January 26 earthquake in Kutch is
 - (i) 6.9 in Richter scale (ii) 7.4 in Richter scale
 - (iii) 7.9 in Richter scale (iv) 6.7 in Richter scale
4. (a) The worst earthquake which hit independent India is _____. (Complete the sentence)
 (b) Because of the _____ movement, 60% of the Himalayan region is overdue for a quake. (Fill in the blank with a suitable word)
5. (a) Tsunami is the name of _____. (Complete the sentence)
 (b) Another name for earthquake is _____. (Fill in the blank with suitable words)

ANSWERS

1. (a) False (b) True
2. (a) A 'fault' is a fracture in the earth's crust.
 (b) The epicentre is point on the earth's surface directly above where the quake is focussed.
3. (a) Himalayan Mountains.
 (b) 6.9 in Richter scale.
4. (a) The worst earthquake which hit independent India is the one which occurred on 26th January 2001 at the Rann of Kutch.
 (b) Because of the southward movement, 60% of the Himalayan region is overdue for a quake.
5. (a) Tsunami is the name of huge waves caused by earthquakes occurring beneath the ocean floor.
 (b) Another name for the earthquake is 'killer quake'.

Passage 2

Read the following passage and answer the questions given below.

The heavy damage caused by the recent spell of rain has made the experts in highways put forward a strong case for the laying of Cement Concrete (CC) roads. They say that the advantages of CC roads far outstrip those of bituminous roads in cost, longevity, maintenance and riding comfort. They stress that while the Tamil Nadu Government spends Rs.10 crores for relaying the bituminous roads in Madras alone after every strong monsoon, the CC roads will last 40 years and require no maintenance. Moreover, cement is available in plenty now.

As Cement Concrete roads have a smooth surface, they provide better riding comfort and the consumption of fuel will be less. Visibility at night will be better. It will not disintegrate due to ageing. Many experts say that the laying of CC roads on the national highways will be cheaper than the laying of bituminous roads. However, the supervisory engineering staff and the quality control staff should be strict when laying the CC roads. According to rough calculations, while the laying of bituminous roads over a stretch of one km will cost Rs.15 lakh, the CC road will entail an expenditure of Rs. 10 lakh only. But the construction of CC roads in rural areas will be initially costlier than bituminous roads.

Bituminous roads do not last long because water penetrates the bitumen layer and seeps into the cavities below, thus forming a film between the two. Later, when vehicles ply over the wet surface, the upper layer is stripped away and 'pot holes' are formed. But this does not happen on CC roads.

Cement Concrete roads have a few disadvantages. It is not easy to cut them open to lay electricity or telephone cables. During day-time, visibility is better on bituminous roads; on the other hand, on CC roads visibility is better at night. Joints pose a problem on CC roads and research is being done on how to avoid joints in them.

1. Give the meaning of the following as used in the passage.
(a) spell (b) longevity (c) seep
2. Complete the following by adding not more than 15 words each.
(a) If the quality control staff are not strict when the CC roads are being laid,.....
(b) Although the CC roads have a few disadvantages,.....
3. Give short answers in not more than 15 words each.
(a) Why are bituminous roads no longer an economical proposition?
(b) Why is it necessary to relay the bituminous roads after the monsoon?
(c) Give two disadvantages of CC roads.
(d) How are 'pot-holes' formed?
4. State whether the following statements are true or false:
(a) The initial cost of laying CC roads in rural areas will be more than Rs.15 lakhs per km.
(b) Bituminous roads have less life than CC roads.
(c) Now there are a few CC roads in Madras.
(d) At all times, the visibility on CC roads is better than the visibility on bituminous roads.
5. Choose the best alternative.
(a) The root cause for stripping is
(i) Poor supervision.
(ii) Lax quality control.
(iii) Vehicles plying on wet surfaces.
(iv) The water between the two layers of the road.

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- (b) How could CC roads reduce the fuel consumption?
- (i) Bumpy roads increase the fuel consumption.
 - (ii) Riding comfort is directly related to fuel consumption.
 - (iii) Visibility will be better at night.
 - (iv) CC roads will not disintegrate due to ageing.

ANSWERS

1. (a) a period of time during which something lasts
(b) long life
(c) to flow slowly
2. (a) If the quality control staff are not strict when CC roads are being laid, their cost will be very high.
(b) Although the CC roads have a few disadvantages, the advantages of CC roads outstrip those of bituminous roads in cost, longevity, maintenance and riding comforts
3. (a) Bituminous roads are no longer an economical proposition because they cost more than CC roads and also they do not last long.
(b) It is necessary to relay the bituminous roads after the monsoon because water penetrates the bitumen layer and seeps into the cavities below, thus forming a film between the two.
(c) It is not easy to cut them open to lay electricity or telephone cables. Visibility is better only at night. Joints pose a problem on CC roads.
(d) When vehicles ply over the wet surface of bituminous roads, the upper layer is stripped away and 'pot holes' are formed.
4. (a) True (b) True (c) False (d) False
5. (a) The root cause for stripping is vehicles plying on wet surfaces.
(b) Riding comfort is directly related to fuel consumption.

Passage 3

Read the passage and answer the questions that follow it.

(Apr./May 2003)

The Underworld

Let us take a brief look at the planet on which we live. As earth hurtles through space at a speed of 70,000 miles per hour, it spins, as we all know, on its axis, which causes it to be flattened at the Poles. Thus, if you were to stand at sea level at the North or South Pole you would be 13 miles nearer the centre of the earth than if you stood on the Equator.

The earth is made up of three major layers—a central core, probably metallic, some 4000 miles across, a surrounding layer of compressed rock and to top it all a very thin skin of softer rock, only about 20 to 40 miles thick—that's about as thin as the skin of an apple, talking in relative terms.

The pressure on the central core is unimaginable. It has been calculated that at the centre it is 60 million pounds to the square inch, and this at a temperature of perhaps 10,000 degrees Fahrenheit. The earth's interior, therefore, would seem to be of liquid metal and evidence for this is given by the behaviour of earthquakes.

When an earthquake occurs, shock waves radiate from the centre just as waves radiate outwards from the point where a stone drops into a pond. And these waves pulsate through the earth's various layers. Some waves descend vertically and pass right through the earth, providing evidence for the existence of the core and an indication that it is fluid rather than solid. Thus, with their sensitive instruments, the scientists who study earthquakes, the seismologists, can in effect X-ray the earth.

Iceland is one of the most active volcanic regions of the world. And it was to Iceland that Jules Verne sent the hero

of his book '*A Journey to the Centre of the Earth*'. This intrepid explorer clambered down the opening of an extinct volcano and followed its windings until he reached the earth's core. There he found great oceans, and continents with vegetation. This conception of a hollow earth we now know to be false. In the 100 years since Jules Verne published his book, the science of vulcanology, as it is called, has made great strides. But even so the deepest, man has yet penetrated is about 10,000 feet. This hole, the Robinson Deep mine in South Africa, barely scratches the surface; so great is the heat at 10,000 feet that were it not for an elaborate air-conditioning system, the miners working would be roasted. Oil borings down to 20,000 feet have shown that the deeper they go, the hotter it becomes.

The temperature of the earth at the centre is estimated to be anything between 3,000 and 11,000 degrees Fahrenheit. Some scientists believe that this tremendous heat is caused by the breaking-down of radio-active elements, which release large amounts of energy and compensate for the loss of heat from the earth's surface. If this theory is correct, then we are all living on top of a natural atomic power house.

1. Choose the response which best reflects the meaning of the text.
 - (a) The outer layer of the Earth is compared to the skin of an apple because
 - (i) it is only 20 to 45 miles thick.
 - (ii) it is thin in proportion to the Earth's mass.
 - (iii) it is relatively thin compared with the central core.
 - (iv) it is softer than the other layers.
 - (b) Which of the following is not true?
It is thought that the interior of the Earth is not solid because
 - (i) there is great pressure at the centre.
 - (ii) earthquake waves can move vertically.
 - (iii) the outer layer is made of rock.
 - (iv) the heat at the centre is too great.
 - (c) The Robinson Deep mine in South Africa is
 - (i) too deep to work in.
 - (ii) too hot to work in.
 - (iii) still in use.
 - (iv) very close to the surface.
 - (d) Since the publication of Jules Verne's book it has been proved that
 - (i) the centre of the earth is not hollow.
 - (ii) oil borings cannot go deeper than 20,000 feet.
 - (iii) the earth is hot at the centre because heat is lost at the surface.
 - (iv) the earth is in danger of exploding.
 - (e) The behaviour of earthquakes is the evidence to show that
 - (i) the outer layer is not semi-solid.
 - (ii) the interior of the earth is not solid.
 - (iii) the interior layer consists of compressed rock.
 - (iv) earthquakes can be controlled.
 - (f) An elaborate air-conditioning system was indispensable in Robinson Deep Mine because of the
 - (i) excessive internal pressure.
 - (ii) extreme cold condition.
 - (iii) excessive internal heat.
 - (iv) depth of the mine itself.

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2. Decide whether the following statements are true or false.
 - (a) If you stand at the Equator you will be closer to the centre of the Earth than if you stand at the Poles.
 - (b) The shock waves from an earthquake cannot pass through the Earth's central core.
 - (c) Jules Verne suggested that the Earth's centre was hollow.
 - (d) It is not known exactly how hot it is at the centre of the Earth.
 - (e) The earth travels through the space at a speed of 90,000 miles per hour.
 - (f) The earth is compared to a natural atomic power house.
3. Choose the definition which best fits these words or phrases as they are used in the text.
 - (a) in effect
 - (i) probably
 - (ii) effectively
 - (iii) actually
 - (iv) accurately
 - (b) intrepid
 - (i) daring
 - (ii) foolish
 - (iii) experienced
 - (iv) curious
 - (c) has made great strides
 - (i) caused a sensation
 - (ii) been accepted by scientists
 - (iii) developed immensely
 - (iv) improved mining techniques
 - (d) compensate for
 - (i) prepare for
 - (ii) allow for
 - (iii) make up for
 - (iv) exchange for

ANSWERS

1.
 - (a) (ii) it is thin in proportion to the Earth's mass
 - (b) (ii) the outer layer is made of rock.
 - (c) (ii) too hot to work in.
(iii) still in use.
 - (d) (i) the centre of the earth is not hollow.
 - (e) (ii) the interior of the earth is not solid.
 - (f) (iii) excessive internal heat.
2.
 - (a) False
 - (b) False
 - (c) True
 - (d) True
 - (e) False
 - (f) True
3.
 - (a) actually
 - (b) daring
 - (c) developed immensely
 - (d) make up for

Passage 4

Read the following passage and answer the questions given below.

The idea of generating energy from the electrochemical compound of hydrogen and oxygen can be traced back more than 150 years to the British physicist Sir William Robert Grove (1811-1896). In 1839, he constructed a battery which could indeed generate energy directly from hydrogen and oxygen. Barely 3 years later, in 1842 he improved his design. However, his invention did not catch on.

Daimler Benz of Germany is the first company in the world to introduce a road-worthy electronic car which does not draw its energy from storage batteries. It obtains it directly, depending on its requirements, on the basis of a chemical reaction between hydrogen and air. The energy is generated by means of fuel cells which are fed by two hydrogen tanks. This enables a large passenger-car in the new V-class Mercedes to accommodate and transport six passenger cars for a distance of approximately 250 km on a full tank.

More importantly, this car is eco-friendly and relatively noiseless. The electronic motor under the bonnet purrs so softly that it is drowned by the other sounds such as those made by the wheels and the wind current. Even the energy generator the fuel cell is silent. Occasionally you can hear the muffled sound of the compressor. The exhaust termed the 'used air pipe' by researchers emits only vapour. There are no traces of environmentally harmful nitric oxides and soot particles or carbondioxide which are responsible for the 'green house effect'. The fuel cell used in these cars is a true alternative to petroleum based fuels.

1. Give the meaning of the following as used in the passage.
(a) Physicist (b) Alternative
2. State whether the following statements are true or false.
(a) This car uses petroleum based fuel.
(b) The British physicist discovered generating energy from chemical reaction between hydrogen and air.
3. Give short answers in not more than 15 words each.
(a) Why is the exhaust of this car termed the 'used air pipe'?
(b) How is the fuel cell used in this car different from storage battery?
(c) Give any two main parts of this car.
(d) Give any two items which cause the green house effect.
4. Choose the best alternative.
(a) The fuel cell used in this car is a true alternative to petroleum-based fuels because_____
(i) It is eco-friendly and noiseless (ii) It is eco-friendly and renewable
(iii) It is cheap (iv) It is available in plenty
(b) Which one of the following makes the least noise in this car?
(i) Electronic motor (ii) Wheels
(iii) Compressor (iv) Fuel cell
5. Complete the following by adding not more than 15 words each.
(a) Other electronic cars derive their energy from storage batteries; in contrast _____
(b) The sounds made by the wheels and the wind current are _____

ANSWERS

1. (a) an expert in physics
(b) choice, that can be used instead of something
2. (a) False (b) False

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3. (a) The exhaust of this car is termed the 'used air pipe' because it emits only vapour.
 (b) The fuel cell used in this car is different from storage battery because it obtains energy directly on the basis of a chemical reaction between hydrogen and air. It is fed by two hydrogen tanks.
 (c) The two main parts of this car are: (i) The fuel cell and (ii) The exhaust
 (d) Environmentally harmful nitric oxides and soot particles or cabondioxide cause the 'green house effect'.
4. (a) The fuel cell used in this car is a true alternative to petroleum-based fuels because it is eco-friendly and noiseless.
 (b) Fuel cell
5. (a) Other electronic cars derive their energy from storage batteries, in contrast this car obtains it directly on the basis of a chemical reaction between hydrogen and air.
 (b) The sounds made by the wheels and the wind current are eco-friendly and relatively noiseless. They drown the sound of the electronic motor.

EXERCISE**I. Read the following report and answer the questions that follow it.**

(M.Q.P.)

It has always been clear, of course that a properly designed media programme uses press, posters, printed leaflets and so on in proportions suitable to the nature of the product itself. In such a programme television occupies a relatively important place if the product is sold in small quantities, at a low price to the vast mass of the people. It is regarded as a quick acting medium, peculiarly suited to prompting 'impulse purchases'.

Larger items, such as cars and refrigerators, may be more profitably advertised in the press or other media which are examined in greater detail and more at leisure than television 'commercials' can possibly be. Nevertheless, in most mass advertising campaigns, the media are used in combination with each other, in proportions which tend to be more and more carefully, and even scientifically, determined.

It is significant, in this connection, that the poster medium and outdoor advertising generally, are now staging something of a recovery, after sustaining what at first looked like being a severe blow at the time of the introduction of commercial television into the United Kingdom in 1955.

Media planning is only one of the branches of the British advertising business, where more exact methods of measurement and the close study of statistical data have made considerable headway in recent years. The marketing and research departments of the advertisers themselves, and of the agents who act as middlemen between advertisers and media owners in the case of more than 50 percent of British advertising business, are constantly expanding. These departments have for sometime included a number of University graduates. Usually with particular qualification in statistics and the movement of University trained men into advertising, the business is growing as is the study of advertising problems in the universities themselves, particularly in the departments of economics, psychology and sociology.

1. Complete the following sentences choosing one of the options given below each sentence.

- (a) A properly designed media programme uses
 - (i) television - if the commodity is produced on a large scale.
 - (ii) different sources of media according to the type of the product.
 - (iii) a media which depends on the impulse.
- (b) The producers advertise large items
 - (i) on television 'commerical' to appeal to the people.
 - (ii) in press so that the customer may see details leisurely.
 - (iii) to make profit through poster advertisement.

- (c) The poster medium and outdoor advertisement
 - (i) were started in the United Kingdom in 1955.
 - (ii) are again becoming popular these days.
 - (iii) nowadays depend upon commercial television.
 - (d) British advertising business
 - (i) is one of the branches of media planning.
 - (ii) has a close study of roads and ways in recent years.
 - (iii) studies closely measuring methods of advertisement.
 - (e) The marketing and research departments of advertisers
 - (i) have employed a number of university graduates.
 - (ii) have appointed 50 percent middlemen.
 - (iii) have started departments of economics, psychology and sociology.
 - (f) The advertising agents act as middlemen between
 - (i) university students and advertisers.
 - (ii) media owners and economists.
 - (iii) those who are interested in advertising and those who own the media.
2. Give the most suitable meanings of the following words as they are used in the text choosing from the lists given below.
- (a) Nevertheless
 - (i) never before (ii) never (iii) however
 - (b) Severe blow
 - (i) air (ii) a hard hit (iii) a flight
 - (c) Sociology
 - (i) a study of ecology.
 - (ii) a study of the nature and development of society.
 - (iii) a study of the history of a nation.
 - (d) Headway
 - (i) progress in difficult circumstances.
 - (ii) the path of the leader.
 - (iii) the movement of one's head.
 - (e) In proportions
 - (i) in parts.
 - (ii) in correct relation to other things.
 - (iii) in proper terms.
 - (f) A close study
 - (i) a thorough, detailed study.
 - (ii) a study of secret material.
 - (iii) the end of reading.
3. Answer the following questions.
- (a) What are the different media available for advertising products?
 - (b) When were the poster medium and outdoor advertising affected terribly?
 - (c) What are the reasons for the growth in advertising?

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II. Read the passage carefully, and then answer the following questions.

(M.Q.P.)

Getting a chocolate out of a box requires a considerable amount of unpacking: the box has to be taken out of the paper bag in which it has arrived; the cellophane wrapper has to be torn off, the lid opened and the paper removed; the chocolate itself then has to be unwrapped from its own piece of paper. It is now becoming increasingly difficult to buy anything that is not wrapped in cellophane, polythene, or paper.

The package itself is of no interest to the people, who usually throw it away immediately. Useless wrapping accounts for much of the heap of garbage in the streets. So why is it done? Some of it, like the cellophane on meat is necessary, but most of the rest is simply competitive selling. This is absurd. Packaging is using up resources and messing up the environment.

Little research is being carried out on the costs of alternative types of packaging. Just how possible is it, for instance, for local authorities to salvage paper, pulp it, and recycle it as egg boxes? Would it be cheaper to plant another forest? Paper is the material most used for packaging – but very little is recycled.

A machine has been developed that pulps paper then processes it into packaging, e.g. egg-boxes and cartons. This could be easily adapted for local use. It would mean that people would have to separate their refuse into paper and non-paper, with a different dustbin for each. Paper is, in fact, probably the material that can be most easily recycled; and now, with massive increases in paper prices, the time has come at which collection by local authorities could be profitable.

Recycling of this kind is already happening with milk bottles, which are returned to the dairies, washed out, and refilled. But both glass and paper are being threatened by the growing use of plastic. More and more dairies are experimenting with plastic bottles. If all the milk bottles necessary were made of plastic, then British dairies would be producing the equivalent of enough plastic tubing that would encircle the earth every five or six days!

The trouble with plastic is that it does not rot. Some environmentalists argue that the only solution to the problem of ever growing mounds of plastic containers is to do away with plastic altogether in the shops, a suggestion unacceptable to many manufacturers who say there is no alternative to their handy plastic packs.

More research is needed for the recovery and re-use of various materials and for the cost of collecting and recycling containers as opposed to producing new ones. Unnecessary packaging, that is used just once, can be avoided. But it is not so much a question of doing away with packaging as using it sensibly. What is needed now is a more sophisticated approach to packaging. Let it be simplified to a considerable extent to minimize land pollution.

1. Choose the response which best reflects the meaning of the text.

- (a) The 'local authorities' are
 - (i) the town council.
 - (ii) the police.
 - (iii) the paper manufacturers.
 - (iv) the most influential citizens.
- (b) If paper is to be recycled
 - (i) more forests will have to be planted.
 - (ii) the use of paper bags will have to be restricted.
 - (iii) people will have to use different dustbins for their rubbish.
 - (iv) the local authorities will have to reduce the price of paper.
- (c) British dairies are
 - (i) producing enough plastic tubing to go round the world in less than a week.
 - (ii) giving up the use of glass bottles.
 - (iii) increasing the production of plastic bottles.
 - (iv) re-using their old glass bottles.

- (d) The environmentalists think that
 - (i) more plastic packaging should be used.
 - (ii) plastic is the most convenient form of packaging.
 - (iii) too much plastic is wasted.
 - (iv) shops should stop using plastic containers.
 - (e) The author thinks that
 - (i) the function of packaging is not important.
 - (ii) people will soon stop using packaging altogether.
 - (iii) not enough research has been done into the possibilities of recycling.
 - (iv) the cost of recycling is so great that it is better to produce new materials than use old ones.
2. State whether the following statements are true or false.
- (a) Too many products nowadays are wrapped in unnecessary packaging.
 - (b) The countryside is being spoilt by the overproduction of packaging.
 - (c) It is possible to use paper again.
 - (d) The rising price of paper will make it worthwhile for local authorities to collect waste-paper.
 - (e) Plastic is difficult to destroy.
3. Choose the meaning or explanation which best fits the context in which it is used.
- (a) Confined
 - (i) used for
 - (ii) restricted to
 - (iii) needed for
 - (iv) suited to
 - (b) Accounts for
 - (i) makes up
 - (ii) compensates for
 - (iii) is recovered from
 - (iv) is kept out of
 - (c) So why is it done?
 - (i) Why do people buy things they don't need?
 - (ii) Why is so much wrapping thrown away?
 - (iii) Why do the shops try to sell things people don't want?
 - (iv) Why is so much unnecessary wrapping used?
 - (d) Messing up
 - (i) spoiling
 - (ii) altering
 - (iii) improving
 - (iv) poisoning
 - (e) Recycled
 - (i) reduced
 - (ii) reproduced
 - (iii) re-used
 - (iv) retailed
 - (f) Handy
 - (i) attractive
 - (ii) easy to hold
 - (iii) convenient
 - (iv) easy to destroy

III. Read the passage and answer the questions following it.

(Nov./Dec. 2002)

Almost all the energy that living things make use of comes from the sun. The chief exception is the gravitational pull of the earth itself, and of the moon upon the waters of the earth. The sun gives out enormous quantities of energy in the form of radiation.

The energy given out by the sun is created by the process known as nuclear fusion. Fusion means 'joining together'. The opposite process is nuclear fission, meaning, 'splitting apart' or 'dividing'. If either fission or fusion takes place quickly, the result is a great and sudden release of energy - an explosion, in fact. Both kinds of nuclear events can be created on earth but so far the only one that can be slowed down and controlled is fission.

Nuclear fission is the splitting of the nucleus of an atom. Only a few elements are suitable for use in this way, the most important ones being Uranium-235, Uranium-233 and Plutonium-239. When a nucleus of one of these elements is struck by a free neutron it breaks down into two lighter nuclei which fly apart at high speed, colliding with surrounding atoms. Their kinetic energy is converted into heat energy. At the same time, two or three free neutrons are released and one of them enters the nucleus of a neighbouring atom, causing fission to occur again; and so on. The reaction spreads very quickly, with more and more heat energy released and this is called a 'chain' reaction because the splitting of each nucleus is linked to another, and another and another.

If this reaction takes place in an atomic bomb, where nothing is done to slow it down, the result is a violent explosion that can destroy a town in a few seconds. Fission can also, however, take place within a construction called a nuclear reactor, or atomic pile. Here the highly fissile material (U-235, U-233, Pu-239) is surrounded by a substance that is non-fissile, for instance graphite. This material is called a moderator. The neutrons lose some of their energy and speed through colliding with the atoms of the moderator. Energy - heat energy - is still created on an enormous scale, but no expansion takes place. The moderator has another function : by slowing down the speed of the free neutrons, it makes it more likely that one of them will collide with the nucleus of a neighbouring atom to continue the chain reaction.

The chief advantage of nuclear energy is that it does not depend on any local factors. A nuclear reactor, unlike an oil-well or a coalmine does not have to be sited on top of a fossil-fuel source; unlike the solar energy unit, it does not have to go out of production when the sun is not shining; unlike hydro-electric power, it does not depend on a large flow of water which may be reduced during some seasons of the year. With an atomic power station, the only limiting factor is that of safety.

In the opposite process, nuclear fusion, two nuclei come together to form a new nucleus of a different kind and this process also releases energy on an enormous scale. Fusion can only occur under conditions of very great heat - at least 50,000,000 degrees Celsius. A fusion reaction on earth has already been created - the hydrogen bomb. This is an uncontrolled reaction. It is not yet possible to produce a controlled fusion reaction that can be used for the production of useful energy.

1. Match the headings with the relevant paragraphs.**A**

- (a) Uncontrolled and moderate nuclear reaction
- (b) The advantages of nuclear energy
- (c) Fission and fusion
- (d) The nuclear fission chain reaction
- (e) Energy from the sun

B

- Paragraph I
- Paragraph II
- Paragraph III
- Paragraph IV
- Paragraph V

2. Complete the following sentences by selecting the most suitable one from the options listed:

- (a) The aim of a nuclear reactor is
 - (i) to establish a controlled chain reaction.
 - (ii) to absorb neutrons travelling at a particular speed.
 - (iii) to cause a rapid chain reaction in order to release the greatest amount of energy.
- (b) Destructive weapons can be obtained from
 - (i) nuclear fusion.
 - (ii) nuclear fission.
 - (iii) both nuclear fission and nuclear fusion.
- (c) One of the functions of a moderator is
 - (i) to speed up the nuclear reaction.
 - (ii) to slow down the speed of free neutrons.
 - (iii) to slow down the splitting of an atom.
- (d) A violent nuclear explosion can destroy a whole town.
 - (i) within a few hours.
 - (ii) within a few minutes.
 - (iii) within a few seconds.
- (e) Nuclear fission gets repeated
 - (i) when a group of neutrons enter the nucleus of the adjoining atom.
 - (ii) when one of the neutrons enters the nucleus of the adjoining atom.
 - (iii) when two or three neutrons go away from the adjoining atom.

3. Read the following statements and state whether they are 'True' or 'False'.

- (a) The hydrogen bomb is a good example of nuclear fission.
- (b) A few elements alone are suitable for use as nuclear fuels.
- (c) Nuclear energy depends upon the supply of fossil fuels.
- (d) An atomic power supply can supply the same quantity of energy throughout the year.
- (e) A hydro-electric power station can be built anywhere.
- (f) The sun's energy is released by the process of nuclear fusion.

IV. Read the text and answer the questions that follow it.

(Apr./May 2003)

Space is a dangerous place, not only because of meteors but also because of rays from the sun and other stars. The atmosphere again acts as our protective blanket on earth. Light gets through, and this is essential for plants to make the food which we eat. Heat, too, makes our environment tolerable and some ultraviolet rays penetrate the atmosphere. *Cosmic rays* of various kinds come through the air from outer space, but enormous quantities of radiation from the sun are screened off. As soon as men leave the atmosphere they are exposed to this radiation but their spacesuits or the walls of their spacecraft, if they are inside, do prevent a lot of radiation damage.

Radiation is the greatest known danger to explorers in space. Doses of radiation are measured in units called 'rems'. We all receive radiation here on Earth from the sun, from cosmic rays and from radioactive minerals. The 'normal' dose of radiation that we receive each year is about 100 millirems (0.1 rem); it varies according to where you live, and this is a very rough estimate. *Scientists have reason to think* that a man can put up with far more radiation than this without being damaged; the figure of 60 rems has been agreed. The trouble is that it is extremely difficult to be sure about radiation damage, a person may feel perfectly well, but the cells of his or her sex organs may be damaged, and this will not be discovered until the birth of (deformed) children or even grandchildren.

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Early space probes showed that radiation varies in different parts of space around the Earth. It also varies in time because, when great spurts of gas shoot out of the sun (solar flares), they are accompanied by a lot of extra radiation. Some estimates of the amount of radiation in space, based on various measurements and calculations, are as low as 10 rems per year, others are as high as 5 rems per hour. Missions to the moon (the Apollo flights) have had to cross the Van Allen belts of high radiation and, during the outward and return journeys, the 'Apollo 8' crew accumulated a total dose of about 200 millirems per man. It was hoped that there would not be any large solar flares during the times of Apollo moon walks because the walls of the LEMS (Lunar Excursion Modules) were not thick enough to protect the men inside, though the command modules did give reasonable protection. So far, no dangerous doses of radiation have been reported, but the Gemini orbits and the 'Apollo 8' missions have been quite short. We simply do not know yet how men are going to *get on* when they spend weeks and months outside the protection of the atmosphere, working in a space laboratory or in a base on the moon. Drugs might help to decrease the damage done by radiation, but no really effective ones have been found so far. At present, radiation seems to be the greatest physical hazard to space travellers, but it is impossible to say just how serious the hazard will *turn out to be* in the future.

1. Choose the response which best reflects the meaning of the text.
 - (a) Scientists have fixed a safety level of
 - (i) 10 rems per year.
 - (ii) 60 rems per year.
 - (iii) 100 millirems per year.
 - (iv) 5 rems per hour.
 - (b) The spacemen were worried about solar flares when they were
 - (i) Crossing the Van Allen belts.
 - (ii) Setting up a moon base.
 - (iii) Exploring the surface of the moon.
 - (iv) Waiting in the command module.
 - (c) When men spend long periods in space how will they protect themselves?
 - (i) By taking special drugs.
 - (ii) By wearing special suits.
 - (iii) By using a protective blanket.
 - (iv) No solution has been found yet.
 - (d) Which of the following is true?
 - (i) The grandchildren of astronauts are deformed.
 - (ii) The children of astronauts have damaged sex organs.
 - (iii) Radiation damage may show only in later generations.
 - (iv) Radiation does not seem to be very harmful.
2. Choose the definition which best fits these words or phrases as they are used in the text.
 - (a) Cosmic rays
 - (i) Rays from outer space
 - (ii) Sun beams
 - (iii) Ultraviolet rays
 - (iv) Rays from spacecraft
 - (b) Scientists have reason to think _____
 - (i) Scientists are right to think _____
 - (ii) Scientists have evidence to suggest _____
 - (iii) Scientists need to think _____
 - (iv) Scientists are certain _____

- (c) Get on
(i) Mount (ii) Walk
(iii) Survive (iv) Advance
- (d) Turn out to be
(i) Change (ii) Harm
(iii) Remain (iv) Prove
3. Look at the passage and decide whether the following statements are 'true' or 'false':
- (a) The atmosphere screens off the Earth from excessive radiation.
(b) Everyone on earth is exposed to exactly the same amount of radiation.
(c) Solar flares are not dangerous.
(d) Space is a dangerous place because it is not fully explored.
(e) The 'Apollo 8' missions have been quite long in duration.
(f) The drugs that have been found to decrease radiation are ineffective.
(g) The greatest physical hazard to space travellers is remaining for long hours in space.
(h) In space travel, space suits are absolutely necessary for the scientists.

Do it Yourself

I. Read the following passage and answer the questions given below.

The three-month period October to December is called the North-East monsoon period during which South Andhra Pradesh and Tamil Nadu get abundant rainfall. It is also the main cyclone period for the country.

During the above period, two or three low pressure cells keep forming every now and then in the South Bay. When atmospheric conditions become favourable, one of them concentrates into a well-marked 'low' and later into a 'depression'. The depression draws all the low level winds around it, the surface wind (SW) reaching 25 knots (one knot=1.85 kph).

Almost invariably, in the next twenty-four hours, the depression concentrates into a 'deep depression' with SW of 30 knots. Long streaming thunder clouds in the form of spirals start converging towards the deep depression and are clearly seen in satellite photographs.

Roughly another day passes when the central region of the deep depression becomes a circular disc of dense overcast clouds, signifying the intensification of a deep depression into a 'cyclone'. With SW ranging from 35 to 50 knots, the sea becomes very rough and navigation is dangerous.

Again another 12 to 24 hours pass before a cyclone concentrates into a severe cyclone with SW of 55 knots. The sea becomes turbulent and large swells start pounding the adjacent coasts.

The place of origin of the cyclonic system and the duration of the sea travel before its landfall cause further intensification of a severe cyclone into a 'hurricane' with SW of 65 to 90 knots.

The weather satellite has made a big breakthrough in cyclone warning work. With geo-stationary satellites, visible photographs are taken during the day and infrared photographs are taken day and night. Facilities also exist to measure parameters like wind speed, direction and temperatures at different levels of the storm field.

While the satellites have a great role to play in detecting storms out in the sea, the radar has a greater role to play when the storm is approaching the coast. A network of cyclone detection radar exists along the Indian coasts. When cyclones are within 400 km range the radar can track them continuously.

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1. State whether the following statements are true or false.
 - (a) North-East monsoon period is the period of cyclones in South India.
 - (b) A depression concentrates into a low.
 - (c) Within 24 hours a depression intensifies into a cyclone.
 - (d) As a depression becomes stronger, the surface winds also show an increase in their speeds.
 - (e) During a depression it is dangerous for vessels to go into the sea.
2. Give short answers in not more than 15 words each.
 - (a) Which factors decide the intensification of a severe cyclone into a hurricane?
 - (b) What can be seen in a satellite photograph when a deep depression is formed?
 - (c) Give the two types of photographs taken by weather satellites.
 - (d) Apart from taking photographs which other measurements are made by weather satellites?
3. Give the meaning of the following as used in the passage.
 - (a) Turbulent (b) Navigation
4. Complete the sentences suitably by adding not more than 15 words.
 - (a) While radars are useful for tracking cyclones within 400 kms from the coast, _____
 - (b) Not all low-pressure cells in the Bay _____
5. Choose the best alternative.
 - (a) The correct increasing order of intensification is _____
 - (i) Hurricane, cyclone, deep depression, depression.
 - (ii) Depression, deep depression, cyclone, hurricane.
 - (iii) Depression, deep depression, hurricane, cyclone.
 - (iv) Deep depression, depression, cyclone, hurricane.
 - (b) The surface wind speed of 25 knots during a deep depression is caused mainly by _____
 - (i) atmospheric conditions (ii) thunder clouds
 - (iii) gathering of low level winds (iv) dense overcast clouds

II. Read the given passage and answer the questions that follow.

(Apr./May 2004)

The secrets of sleep were a mystery for centuries simply because there was neither the means to explore them, nor the need. Only when candles gave way to gas light and double his output by working shifts around the clock, did people seriously start wondering if sleep could be a waste of time. Our ability to switch night into day is very recent, and it is questionable if we will ever want, or be able, to give up our habit of enjoying a good night's sleep. However, a remarkable research project in London has already discovered a few people who actually enjoy insomnia. Even chronic insomniacs often get hours more sleep than they think. But, by placing electric contacts beside the eyes and on the head, it is possible to check their complaint by studying the tiny currents we generate which reveal the different brainwaves of sleep and wakefulness. This has shown that for some people seven or eight hours of sleep a night are quite unnecessary.

A lot of recent work has shown that too much sleep is bad for you, so that if you are fortunate enough to be born with a body which needs only a small amount of sleep, you may well be healthier and happier than someone who sleeps longer.

Every attempt to unravel the secrets of sleep and be precise about its function, raises many problems. The sleeper himself cannot tell what is going on and even when he wakes, has only a very hazy idea of how good or bad a night he has had. The research is expensive and often unpopular, as it inevitably involves working at night. Only in the last few years have experts come up with theories about the function of sleep and the laws which may govern it.

The real advance in sleep research came in 1937 with the use of the electroencephalogram. This machine showed small 50 microvolt changes in the brain, so, for the first time, we could observe sleep from moment to moment. Before that time one could put the person to bed, watch him mumble, toss, turn, bring back a few rough memories of dreams, and that was about all. In 1937 it was possible to read out these changes, second by second. Then in 1959 two other things happened. Kleitman and Aserinsky, as they were looking at eye movements, trying to understand the brainwaves, noticed that after about ninety minutes there would be a burst of the EEG, as if the person was awake, and the eyes would move rapidly. It was not hard to guess that it was a dream. And indeed it was. Waking people up during that period, they found they were dreaming; waking them up at other periods, they found no dreams.

The electroencephalograph shows that when we fall asleep we pass through a cycle of sleep stages. At the onset of sleep, the cycle lasts about ninety minutes during which you pass through stages one, two and three to stage four. This deepest form of sleep, and from it you retreat to stage two, and from there into REM, or rapid eye movement sleep. Here, for ten minutes on the first cycle and then gradually longer, it is thought that we do most of our dreaming.

Studies of people who volunteered to be locked up for weeks in an observation chamber with no idea of whether it is night or day, give remarkable results. We are not in fact, 24 hour creatures. Put people in such circumstances and even though the patterns of sleep continue, the day is extended to about 25 1/2 hours. Without any clues to time, these people go to sleep the first night about an hour later than usual, the next night an hour later, and the next night. So that, after about ten days, the person is going to sleep at three o'clock in the afternoon, thinking that he is still going to sleep at midnight.

Today, jet-lag is a familiar hazard for the seasoned traveller. Travel across time zones plays havoc with the biological clock rhythm of the human body. For the active pilot, who is rarely in one place enough to know if it is time for breakfast or dinner, the impact of jet-lag on his sleep is critical. Several air disasters have been partly caused by overtired pilots ignoring the natural laws of sleep. Much research is directed to finding out what these laws are and to what extent pilots and astronauts dare disobey them. But they are laws which affect all of us, and not just pilots.

1. Choose the response which best reflects the meaning of the text.

- (a) Only after the invention of electricity did people start
 - (i) to really enjoy insomnia.
 - (ii) asking themselves if sleep was a waste of time.
 - (iii) to need to do research into sleep.
 - (iv) giving up the habit of sleeping so much.
- (b) It seems that most people
 - (i) need a lot of sleep.
 - (ii) sleep too much.
 - (iii) need less sleep than we thought.
 - (iv) need more sleep than we thought.
- (c) The electroencephalograph records
 - (i) eye movements.
 - (ii) the frequency of dreams.
 - (iii) the time it takes to have a dream.
 - (iv) small currents in the brain.
- (d) Dreams seem to be associated with
 - (i) deep sleep.
 - (ii) rapid eye movements.
 - (iii) jet-lag.
 - (iv) overtiredness.

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- (e) The people in the observation chamber
 - (i) went to sleep an hour earlier than usual each night.
 - (ii) started to go to bed in the afternoon.
 - (iii) slept for a much longer period than usual.
 - (iv) went to sleep about an hour later than usual.
 - (f) Jet-lag means
 - (i) being unable to sleep properly on aeroplanes.
 - (ii) the clock says it is one time the body says it is another.
 - (iii) it is a different time in different parts of the world.
 - (iv) prolonging the day from 24 hours to 24 1/2 hours.
2. State whether the following statements are true or false.
- (a) People who suffer from insomnia often get much more sleep than they imagine.
 - (b) Research into sleep is now quite easy.
 - (c) When people dream, their eyes move.
 - (d) The cycle of sleep-stages lasts ten minutes.
3. Choose the definition which best fits these words or phrases as they are used in the text:
- (a) Gave way
 - (i) were rejected in favour of
 - (ii) gradually replaced
 - (iii) were replaced by
 - (iv) came back into use after
 - (b) Which of the following is not a suitable alternative for convert? (1st paragraph)
 - (i) change
 - (ii) turn
 - (iii) alter
 - (iv) transform
 - (c) Unravel
 - (i) disentangle
 - (ii) disrupt
 - (iii) disturb
 - (iv) discredit
 - (d) Seasoned traveller
 - (i) someone who travels at certain times of the year only
 - (ii) someone who is accustomed to travelling
 - (iii) someone who does not like travelling
 - (iv) someone who suffers from travelling
 - (e) Impact
 - (i) result
 - (ii) loss
 - (iii) effect
 - (iv) cause
 - (f) Clues
 - (i) clockwork
 - (ii) certainty
 - (iii) assistance
 - (iv) information

III. Read the following passage carefully and answer the question that follow it.

(Nov./Dec. 2004)

Three great challenges dominate the scene as one contemplates the global environmental campaigning in the first few decades of the 21st century. First, there is huge legacy of industrial pollution which is not being responded to second, societies can live and work cleanly and sensitively but the means to do so are neglected. And third, governments are failing to organise politics and policies to protect public goods.

The first of these is a failure to respond to and deal with the pollution *legacy* of the 20th century, and in particular global warming which is leading to climate change. Disruption of the world's climate is already having *catastrophic* consequences for human and ecological well-being. While the International Climate Convention was signed at the Rio Earth summit in 1992 and although some progress has been made, effective action has not yet been agreed on, either in terms of targets or timetables.

The appropriate response to climate change is not *mitigation* or adaptation measures such as planting trees in the hope (not very well-founded) that they will mop up carbon dioxide or even constructing flood shelters for low-lying villages (though that is necessary). The appropriate response is to shift our energy economies rapidly out of fossil fuels and into renewable energy. It will be necessary to make *extensive* use of energy efficiency to make this task feasible in the necessary timescale.

The appropriate timescale is the time available to us before climate warming goes too far before it reaches the upper limit of a rise of around 0.2 degree Celsius per decade beyond which United Nations advisors anticipate that unpredictable and drastic ecological damage will *ensue*. (By Greenpeace calculations this is a matter of a few decades, although evidence from coral reefs and the Arctic and from the increasing extreme weather conditions now suggest that dramatic change is indeed underway). All nations need to make this switch and obviously industrial nations have a proportionately greater responsibility to act first. It is the World's number one environmental concern.

1. Say whether the following statements are true or false.
 - (a) The legacy of industrial pollution is being dealt with concern by the government.
 - (b) We need to rapidly shift to alternative and clean forms of energy sources.
 - (c) Targets have been set for effective action to deal with the problem of pollution.
 - (d) The well-being of human beings is being affected due to environmental pollution.
2. Choose the word that comes closest to mean the words or phrases as they are used in the text.
 - (a) Catastrophic
 - (i) disastrous
 - (ii) important
 - (iii) far-reaching
 - (iv) sudden
 - (b) Mitigation
 - (i) lessening
 - (ii) increasing
 - (iii) shift
 - (iv) investigation
 - (c) Legacy
 - (i) inheritance
 - (ii) problem
 - (iii) responsibility
 - (iv) ignorance

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- (d) Extensive
 - (i) widespread
 - (ii) appropriate
 - (iii) careful
 - (iv) necessary
3. Choose the response that best reflects the meaning of the text.
- (a) One of the alarming effects of global warming is
 - (i) damage of coral reefs.
 - (ii) great climatic changes leading to adverse effects on man's health.
 - (iii) worldwide pollution.
 - (iv) worldwide floods.
 - (b) Appropriate timescale is
 - (i) the lifespan of an average human being.
 - (ii) the time it takes for complete ecological destruction.
 - (iii) the time that man has taken to pollute the environment.
 - (iv) the time that has been given to man before which he must tackle the problem of pollution.
 - (c) Countries all over the world need to shift to renewable sources of energy but ones that need to shift immediately are:
 - (i) developing countries.
 - (ii) countries that rely heavily on industries.
 - (iii) prosperous countries.
 - (iv) countries where fossil fuels are available in plenty.
 - (d) The best manner in which climate change can be addressed is by
 - (i) planting trees.
 - (ii) constructing flood shelters.
 - (iii) shifting to renewable sources of energy cleaning the oceans.

CHAPTER



Jumbled Sentences

Rewrite the following jumbled sentences in the correct order.

Examples

I

1. At first it was thought that water supply could be delivered through centralised pumping systems.
2. Their conclusion was that the most feasible option would be the use of ground water and handpumps.
3. But when the global cost estimates ranged as high as US \$ 600 billion, planners started to think about other cheaper and more practical options.
4. This had the specific objective of providing clean drinking water to every person around the globe by 1990.

Answer

4. This had the specific objective of providing clean drinking water to every person around the globe by 1990.
1. At first it was thought that water supply could be delivered through centralised pumping systems.
3. But when the global cost estimates ranged as high as US \$ 600 billion, planners started to think about other cheaper and more practical options.
2. Their conclusion was that the most feasible option would be the use of ground water and handpumps.

II

The Egyptians knew the art of jewellery-making as early as 3000 BC.

1. It is malleable and we can, therefore, change its shape by pressing and hammering.
2. It has been accepted by the nations of the world as a medium of international exchange.
3. It is also ductile; this means that we can draw it out into a wire.
4. In ancient India, too, exquisite gold ornaments were made by skilled craftspeople.
5. Although we do not use gold for coinage nowadays, there was a time when gold coins were in use. The Greeks developed the art of coin-making to a high degree of skill.
6. Gold is important for another reason.
7. Gold possesses two properties which make it easy for the artisan to work on.

Answer

The Egyptians knew the art of jewellery-making as early as 3000 BC.

4. In ancient India, too, exquisite gold ornaments were made by skilled craftspeople.
6. Gold is important for another reason.
2. It has been accepted by the nations of the world as a medium of international exchange.
5. Although we do not use gold for coinage nowadays, there was a time when gold coins were in use. The Greeks developed the art of coin-making to a high degree of skill.
7. Gold possesses two properties which make it easy for the artisan to work one.
1. It is malleable and we can, therefore, change its shape by pressing and hammering.
3. It is also ductile; this means that we can draw it out into a wire.

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III

1. If that strikes oil, then production wells can be drilled.
2. They carry out surveys from the ground and from the air using a variety of instruments, and they bore into the rocks to take samples.
3. When petroleum engineers search for oil, they look for certain types of rock layers, or strata, which they know from past experience can trap oil.
4. If it indicates that oil may be present, a test well is drilled.
5. Oil is found underground trapped in the layers of rock.
6. When all the information is collected and analysed, a picture of the underground strata is obtained.
7. They also set off explosions in the ground and record the waves reflected from the underground rock layers.
8. This is called seismic surveying.

Answer

5. Oil is found underground trapped in the layers of rock.
3. When petroleum engineers search for oil, they look for certain types of rock layers, or strata, which they know from past experience can trap oil.
2. They carry out surveys from the ground and from the air using a variety of instruments, and they bore into the rocks to take samples.
6. When all the information is collected and analysed, a picture of the underground strata is obtained.
7. They also set off explosions in the ground and record the waves reflected from the under ground rock layers.
4. If it indicates that oil may be present, a test well is drilled.
1. If that strikes oil, then production wells can be drilled.
8. This is called seismic surveying.

EXERCISE

Rewrite the following jumbled sentences in the correct order.

(Nov./Dec.2002)

I

1. In the long term, certain chemicals in tobacco smoke intensify the damage in the lung region.
2. But, giving up smoking progressively reduces such risks of lung cancer.
3. Consequently, the mucus remains and starts accumulating in the lungs, making them liable to infection.
4. However, without any doubt it can be said that smoking is injurious to health.
5. The damage caused to the lungs and respiratory passages inhibits the process that removes mucus and dust particles.
6. There is an overwhelming statistical and experimental evidence to associate smoking with diseases like lung cancer and coronary heart attacks.
7. This, in turn, induces cancer in the lung tissues.
8. Apart from early death from these two diseases, heavy smokers suffer from persistent coughs which damage the lungs.

II.

(Nov./Dec.2002)

1. Another disadvantage is that diesel engines are difficult to start in cold weather.
2. For one, the higher compression that makes the diesel more efficient necessitates the use of heavier engine components.

3. Thirdly, diesel engines have been noted for their loud noise and vibration.
4. However, the popularity of diesel engines still continues, because the price of diesel is low when compared to the price of petrol.
5. Finally, these engines are known for the emission of heavy smoke.
6. The diesel engine, an increasingly popular engine in automobiles has its own disadvantages.
7. But, plugs are available to preheat the engines to provide easier starting.
8. Therefore, diesel engines remain heavier than petrol engines.

III. (Apr./May 2003)

1. The dissolved cellulose is formed into threads by a technical process.
2. This fibre is, in fact, a reconstituted natural fibre.
3. After that, they are dried on a heated roller.
4. The cellulose is obtained from shredded wood pulp.
5. Finally, they are wound on to a bobbin.
6. It is made by dissolving cellulose in a solution of sodium hydroxide.
7. The threads are drawn from the setting bath of dilute sulphuric acid. Then, they are wound on reel and washed.
8. Rayon is a man-made fibre.

IV. (Apr./May 2003)

1. Antarctica which is regarded as a continent by itself is located in this southern polar region.
2. Geographers have found that there are some important differences between the northern and southern polar regions of the earth.
3. Antarctica is snow-bound almost throughout the year, but the snow in the Arctic melts in summer.
4. The Arctic region, in the north, is mostly sea, surrounded by masses of land.
5. But, on the whole, both the polar regions help nature, in maintaining the ecological balance.
6. The southern pole, on the other hand, is situated in a land mass surrounded by oceans.
7. Both the regions, in general, have very cold climate.
8. The winter in the Arctic is not so severe as in the Antarctic.

CHAPTER



Instructions

To give instructions the root forms of verbs should be used. (root : the part of a word on which the other words are formed. 'Walk' is the root form of 'walks', 'walked', 'walking' and 'walker').

Examples

1. Don't touch.....
2. Shut down.....
3. Open only.....
4. Wear apron.....
5. Handle.....
6. Rinse.....
7. Get ready.....
8. Never board.....
9. Always form a queue.....
10. Move away.....

I. Eight instructions to maintain a computer in good working condition.

1. Don't touch the cables.
2. Avoid touching the open sockets.
3. In case of sparks or short circuits, switch off the main supply and open all the doors and windows.
4. If any sound comes from the UPS, immediately shut down the system.
5. Avoid touching the monitor.
6. Always shut down the system when it is not in use.
7. Don't misplace and replace the equipment.
8. Don't handle the equipment roughly.
9. Shut down the system properly.
10. Don't rest your legs anywhere on the stabilisers or UPS.
11. While working on the net, open only minimum number of required sites so that you can get quick access.

II. Safety instructions in a chemical engineering lab.

1. Do not work in the laboratory barefoot. Wear shoes to protect your feet.
2. Do not handle the apparatus and instruments roughly.
3. Do not wear gold ornaments, wrist watches, etc., while working in the lab.
4. Do not allow chemicals to come into contact with your skin.
5. Keep all the doors and windows open while working in the laboratory.

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6. Keep your working place neat and tidy.
7. Switch off the power supply immediately after completing the experiment.
8. Arrange the apparatus in order after the experiment is over.
9. Dilute acids and prepare solutions only under the guidance of the staff.
10. Don't wear loose clothes.
11. Wear apron and gloves while handling the chemicals.
12. Take care not to spill the chemicals on the floor.
13. Handle all glassware items carefully.
14. Always rinse the apparatus well both before and after use.

III. Eight instructions that must be followed by all pedestrians.

1. Walk on the pavement or keep to the extreme left of the road.
2. Use subways; though long, they are absolutely safe.
3. Avoid crossing suddenly.
4. Don't walk on road dividers.
5. Don't ignore traffic signals; they are meant for your safety.
6. Cross the road only at the zebra crossing or when the traffic constable signals to you.
7. Before crossing the road, look on either side to make sure that the road is clear of fast moving vehicles.
8. Avoid using the cell phone while walking along the road.
9. Be sober. Don't be under the influence of liquor or drugs.
10. Be familiar with the rule of the road and traffic signals.
11. When you see a vehicle approaching, better stop and let it go.

IV. Eight instructions to save petrol.

1. For fuel economy, keep the engine in good condition.
2. Fit the vehicle with an engine that gives high mileage.
3. Don't keep the engine running while the vehicle is not in motion.
4. Inflate the tyres at an optimum level of air pressure.
5. Use the correct engine oil for the proper functioning of the engine.
6. Service the vehicle regularly; an ill-maintained vehicle consumes more petrol.
7. Avoid clutch driving. Resting one's foot on the clutch pedal leads to more fuel consumption.
8. Avoid frequent change of gear to save petrol.

V. Eight instructions to be followed by the users of buses.

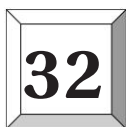
1. It is necessary that you should get in or out of the bus when it comes to a complete halt. A moving or running bus can cause fatal accidents.
2. You should avoid foot-board travelling and hanging out on the sides and back of the bus. It could prove extremely dangerous. After all, "Prevention is better than cure".
3. You should not run after a bus which has already left the stop.
4. You should get ready to alight before your stop arrives.
5. You should never board or get out of the bus at intersections.

6. You must always form a queue for getting into the bus leaving way for people to get down.
7. You ought to move away from the bus after you get off or in case you are not able to board.
8. In the interest of your safety, it is necessary that you look out for vehicles coming from behind while getting down.
9. You should not keep your elbow or head out of the window. Vehicles coming from the side could hit you.
10. You must not lean out of the bus to wave. You could hit a pole.
11. To be sure of catching your bus, you should arrive well in time, and make sure that you catch the right bus.
12. While travelling on a bus, you should not smoke or be under the influence of drugs.
13. You should not carry explosives.
14. It is aptly said, "Less luggage, more comfort". You should not carry heavy luggage.
15. You should be considerate to the old as well as to the handicapped.

Do it Yourself

1. As the Maintenance Engineer of a Software Company, give a set of eight instructions that are to be followed by the lab assistants while handling sophisticated equipment. (M.Q.P.)
2. Write eight instructions to maintain a computer in good working condition. (Apr./May 2002)
3. Write eight instructions that must be followed by all pedestrians. (Apr./May 2002)
4. Write a set of eight instructions to control air pollution in metropolitan cities like Chennai. (Apr./May 2000)
5. What instructions would you give your tourist friend from the USA, to make his trip to Chennai, a pleasant one? Give a list of eight most important instructions pertaining to food, stay, travel, etc. (Apr./May 2003)
6. Write a set of eight instructions that are to be followed in a computer laboratory. (Apr./May 2003).
7. Write a set of eight instructions that must be followed in a Chemical Engineering Lab.
8. Write a set of eight instructions that must be followed by the users of buses.
9. Write a set of eight instructions that must be followed as safety measures in a Chlorine Plant.

CHAPTER



Recommendations

Some useful expressions for making recommendations are:

1. It is necessary to _____
2. _____ should be developed _____
3. _____ have to be _____
4. _____ ought to _____

I. Eight recommendations to control noise pollution.

Noise Pollution

Abnormally high noise levels not only impair hearing but also create nervous and emotional tension leading to high blood pressure and other health problems. Noise reduces the depth and quality of sleep and may adversely affect overall mental and physical health. School children are among the worst victims of noise pollution which causes a steep fall in concentration and loss of memory. Prolonged exposure to a high level of noise results in Noise Induced Hearing Loss (NIHL), both temporary and permanent.

Loudspeakers are the main source of noise. The other factors are road and rail traffic, aircraft and industrial units, shrill pressure horns and fire-crackers.

The following is a set of eight recommendations to control noise pollution.

1. There should be restrictions on the volume and pitch of loudspeakers. Especially at night the use of loudspeakers should not be permitted.
2. Election meetings and processions should not be permitted near educational institutions and hospitals as they are often noisy.
3. Every vehicle must have a silencer to absorb noise.
4. People should not live in the neighbourhood of airports. They should live outside the range of the airport din.
5. Industrial units should be established away from residential areas.
6. The use of shrill pressure horns should not be permitted.
7. The use of fire-crackers especially high-sounding 'bombs' should be stopped.
8. Trees and shrubs should be planted in front of buildings to absorb sound. Roadside plantations are also needed for this purpose.
9. Government should pass the "Noise Pollution Control Act" to check noise pollution.
10. People should be educated through the mass media about noise pollution.
11. Noise producing vehicles should be put out of use.
12. Silence zones should be observed where there are educational institutions, hospitals, etc.

II. Eight recommendations to control air pollution in metropolitan cities like Chennai.**Air pollution**

Air pollution is considered to be one of the most dangerous kinds of environmental pollution. Severe air pollution affects human health and causes many diseases. For instance, there occurs black lung disease among coal miners who have inhaled mine dust for many years. Similarly carbon monoxide which comes from gasoline motor exhausts and burning of coal reduces oxygen-carrying capacity of blood in man. Chlorine from bleaching cotton and flour attacks the entire respiratory tract and mucous membrane. Air pollution affects not only man but also the climate and ecology. Air pollution is mostly caused by the discharge of gases and particles from domestic fires, motor vehicles and factories.

The following is a set of eight recommendations to control air pollution.

1. Air pollution can be controlled by keeping the factories and mills away from residential areas.
2. Planting of trees helps in keeping the air clean.
3. People should be educated about the importance of preservation of our health and protection of plant and animal life.
4. Pollution from industry and power generation can be controlled by electrostatic precipitators which reduce smoke and dust.
5. Gaseous pollutants of industry and power station can be removed by differential solubility of gases in water.
6. Technology for control and emission needs to be adopted for all types of vehicles using petrol or diesel. In case of three wheelers, the authorities should insist that their engines are designed to run on liquefied petroleum gas.
7. A substitute to diesel should be found.
8. Licences to polluting industries should be revoked.
9. Emission standards should be enforced.
10. Rules and regulations should be framed to effectively control air pollution.

III. Eight recommendations to control water pollution.**Water Pollution**

Clean drinking water is the key to human survival. It is a symbol of life. The UN agency, the World Health Organisation (WHO) estimates that 80 percent of all diseases in the world are caused by contaminated water. For example, typhoid and cholera are two common water-related diseases.

Water pollution is the result of domestic sewage mixing with drinking water. Drinking water contains germs. Rivers, lakes, ponds and seas are polluted by the chemicals, industrial effluents, suspended solids and bacteria. The sewage has damaged our water resources. Such discharges cause water borne diseases and epidemics. Wastes from slaughter houses, dairy and poultry farms, breweries, tanneries, paper and sugar mills, dyeing and viscose factories cause havoc to the rivers.

The following are the recommendations to control water pollution.

1. Pollution laws must be enforced and people should be educated about the seriousness of the situation.
2. All effluent, to be discharged should be treated up to a certain standard so that ground water doesn't get polluted.
3. Many industries are still discharging untreated effluent. Stringent punishment should be inflicted on such people. So the law needs to be very strict in handling such a situation.
4. Various kinds of wastes like paper pulp, municipal and industrial effluents, sewage and thermal pollutants can be recycled to advantage. For example, urban waste can be recycled to generate cheaper fuel gas or electricity.

5. The regulated use of thermonuclear reactions in controlled fusion reactors to produce cheap electricity could solve the problem of accumulation of waste.
6. Techniques introduced by CSIR for the control of water pollution should be successfully used for the removal and reuse of pollutants from industrial wastes.
7. A technical cell should be created to advise the private contractors (who just drill and install a tube well) on the designs of the tube well so that India's underground system does not get destroyed.
8. Water pollution can be prevented through chemical treatment.
9. The Ganga Action Plan aims at setting up sewage treatment and renovating and augmenting considerably the capacity of existing sewage pumping stations, constructing new stations and laying additional sewers.

IV. Eight suggestions for the proper maintenance of two-wheelers.

An indifferently maintained vehicle breaks down when one badly needs it. A badly maintained vehicle could also be a source of danger as it is more prone to road mishaps than a well-maintained one. For safety and vehicle longevity the following tips should be followed.

1. The brakes should be checked every day. The brake cable should also be checked for cracks or signs of wear that could cause sticking or failure. Further, the brakes ought to be lubricated with cable lubricant.
2. The tyres should be maintained properly. An optimum level of air pressure will provide maximum road-grip, stability, riding comfort and tyre life. Therefore, the tyres are to be checked for cuts, embedded nails or other sharp objects. The tyre pressure should be checked once a week.
3. It is always better to encounter speed breakers and pot holes at a slow speed. This way, one can avoid both loss of control and mechanical damage to the vehicle.
4. The spark plug should be cleaned at least once in 15 days. It will always be better to have a spare spark plug.
5. For the smooth running of the vehicle, petrol and diesel should not be mixed.
6. The two wheelers should not be exposed to too much rain or sunshine.
7. Frequent use of the clutch should be avoided.
8. The two-wheeler is primarily meant for two people. In their own interest the owners of two-wheelers should not overload the vehicle.
9. Above all, the vehicle should be serviced regularly to keep it in good running condition.

(Courtesy: Learning to Communicate by Dr. V. Chellamall)

V. Eight guidelines to be followed by pedestrians (or) Eight recommendations for road safety.

Traffic volumes on roads have increased manifold. And with that, one witnesses a staggering increase in the number of accidents, several of them causing grievous injuries such as loss of a limb or even life. Road safety is important for every one, be it pedestrians, car drivers, users of public transport or two wheelers. Every road user must be concerned not to be a cause for road accidents. He/ She must cultivate respect for law of the road as well as for life.

The following guidelines are meant for pedestrians.

1. You should walk on the pavement or keep to the extreme left of the road. Walking in the middle of the road could be risky.
2. Where there are subways you should use them. Though long, they are absolutely safe.
3. You should not ignore traffic signals as they are meant for your safety.
4. If you wish to walk across the road, do so only at the zebra crossing or when the traffic constable signals to you to cross.

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5. Before crossing the road, look on either side to make sure that the road is clear of fast moving vehicles.
6. You should avoid using the cell phone while walking along the road. Better concentrate on the road than on your cell phone.
7. As a pedestrian you should be familiar with the rule of the road and traffic signals.
8. When you see a vehicle approaching, better stop and let it go. After all, wheels move faster than legs.
9. You should avoid crossing suddenly and you should not walk on road dividers.

VI. Eight recommendations to save water.

Cool drinking water is the key to human survival. It is a symbol of life. More than 80% of rural and 50% of urban, industrial and irrigation water requirements in the country are met from ground water. We should be economical in the use of water.

1. A hotel could save water by using paper plates and napkins to avoid using water for cleaning.
2. We should use a device which will detect wastage of water and cut off water to the sources of wastage.
3. When we don't need water, we should turn the tap off and not leave it running.
4. We should see to it that the water-pipe is not leaking.
5. More and more dams should be constructed to store water.
6. There should be roof-top rain-water harvesting to recharge the underground table through existing wells or bore-wells or by constructing new wells, bore-wells, shafts or spreading basins.
7. We should capture and recharge city storm water run-off through wells, shafts and storm water drains.
8. We should harness run-off in catchments by constructing structures such as check dams, percolation trenches, and sub-surface dykes.
9. Surplus run-off in the village catchments and watersheds should be impounded in the village ponds and percolation tanks.

(Source: Learning to Communicate)

VII. Eight recommendations to save petrol.

Petrol is becoming dearer day-by-day. It is truly said, "Waste not, want not." We should not waste petrol. We should take all possible steps and precautions to save petrol.

1. For fuel economy, we should keep the engine in good condition.
2. A two-stroke engine gives less mileage. A vehicle should be fitted with an engine that gives a high mileage.
3. We should not keep the engine running when the vehicle is not in motion.
4. Frequent change of gear should be avoided to save petrol.
5. The tyres should be maintained properly. An optimum level of air pressure will provide maximum economy of fuel besides riding comfort and tyre life.
6. We should use the correct engine oil for the proper functioning of the engine.
7. The vehicle should be serviced regularly as an ill-maintained vehicle consumes more petrol.
8. To get maximum mileage there should be mileage tuning which in turn will lead to less consumption of petrol.
9. Clutch driving should be avoided. Resting one's foot on the clutch pedal leads to more fuel consumption.

VIII. Safety measures in nuclear power plants.

Nuclear fuels such as Uranium and Plutonium are radioactive. They give out dangerous and very penetrative radiation. During fission even more radiation is produced. This radiation is harmful even in small quantities. It attacks living tissues and it can alter the genes in body cells. Such mutation can affect later generations. In large quantities its effect is lethal.

Nuclear reactors produce wastes which remain dangerously radioactive for hundreds or perhaps thousands of years. The disposal of these wastes is a serious problem. At present, they are often stored in underground tanks or sealed in containers and dropped into deep ocean trenches. Neither method is very satisfactory. The threat of environmental pollution is always there.

Nuclear plants need to be suitably located away from densely populated areas. Adequate waste disposal facilities must be available. The reactor ought to be surrounded by concrete and steel walls thick enough to prevent any escape of radiation. The working of the reactor should be slowed down by inserting control rods, also known as neutron absorbing rods, into the core. It is necessary that the reactor has emergency systems to cope with the unexpected failure of the fuel elements of the cooling system. Workers at the plants must protect themselves against possible contamination by using gloves, overshoes, respirators etc. Radiation measuring instruments have to be used to monitor radiation levels in and around the plants. It should be ensured that all releases into air and water are kept well below permissible levels.

IX. Safety measures in a chlorine plant.

Cylinders should be stored in an upright-position. Full and empty cylinders should not be stored together. The storage area should be separate from places where compressed gas containers and other inflammable materials are stored. Also, care should be taken to keep the storage area far away from elevators, gangways or ventilating systems, because in the event of a chlorine leak dangerous concentrations of chlorine may spread rapidly.

While transporting chlorine cylinders, they must be carefully checked, clamped or otherwise suitably supported to prevent shifting and rolling. They should not be permitted to drop and no object should be allowed to strike them with force. They should not project beyond the sides or ends of the vehicles in which they are transported. *Prior to filling the cylinder*, each cylinder should be completely emptied, thoroughly cleaned and dried. Another foolproof test to rule out surface defects, corrosion and the presence of foreign matter must be carried out.

Only cylinders which have undergone a hydraulic test should be used for filling chlorine gas.

Special care must be taken not to fill cylinders with excess chlorine gas or liquid chlorine.

People who have asthma, certain types of bronchitis, other chronic lung conditions and other kinds of respiratory problems should not be employed in a chlorine plant.

The employees should be cautioned to prevent leaks and avoid inhalation of gas and direct contact with the liquid. They should be told to report to the authorities immediately in the case of equipment failure. All workers must be instructed and trained to adopt preventive measures, in case of an emergency.

All employees should be made aware of first aid equipment such as emergency showers, eye-baths, fire fighting equipment, fire alarms, the use of personal protector equipment and the like and their location in the plant. They should be trained to use them in case of emergency.

(Courtesy: Teachers' Book, pp.84-85)

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Do it Yourself

1. Write a set of eight recommendations to control water pollution. (Apr./May 2000)
2. Write a set of eight recommendations that will help the public to save petrol. (M.Q.P.)
3. Write a set of eight recommendations that should be followed to save water. (M.Q.P.)
4. Write a set of eight recommendations for safety measures in nuclear power plants.
5. Write a set of eight recommendations for safety measures in a chlorine plant.
6. Write a letter to your brother who is going to write his Board Examination in April 2003. Offer your suggestions and recommendations to him (at least 8) as to how he should prepare for the Examination. (M.Q.P.)
7. Write a set of eight important recommendations to a group of students from Europe who have come to spend their one month's vacation in India. The suggestions may be on the lines of food, travel, transport, climatic conditions, etc. to make their stay comfortable and enjoyable. (Nov./Dec. 2004)

CHAPTER

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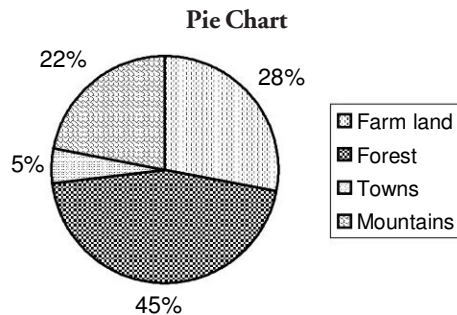
Charts and Diagrams

The letters or figures arranged in the code form convey certain meaning to us. When the meaning of such codes is decoded in the written form in a descriptive manner it is called transcoding.

Any set of symbols that communicates meaningful messages is a code. A language is a set of symbols and hence it is a code. Graphs, flow charts, bar charts, pie charts and tables are all set of symbols and are codes, too. Graphic aids make communication easy to understand.

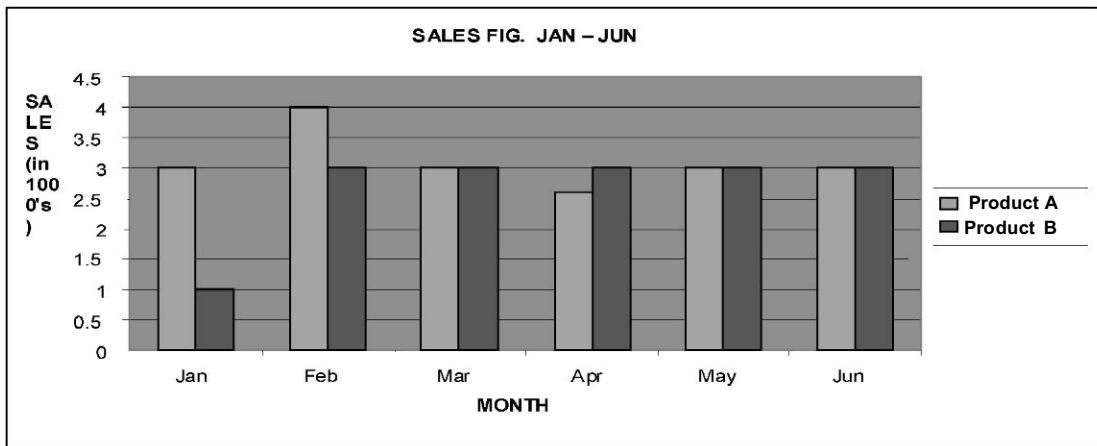
A *Table* is a list of facts or figures arranged in an ordered way, especially in columns.

A *Pie Chart* is a diagram consisting of a circle divided into sections in which each represents a specific proportion of the whole, e.g., in order to show spending in various areas in relation to total expenditure.



A *Bar Chart* is a diagram on which narrow bands of equal width but varying height are used to represent quantities.

Bar Chart



A *Flow Chart* is a diagram showing the development of something through different stages or processes.

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An *Organisational Chart* shows the line of authority in an organisation. It shows the hierarchy from the top to the bottom and indicates the function of each department, subdivision or section and their relationship to the organisation as a whole.

Procedure for decoding charts and symbols

1. Take a good look at the given chart or table.
2. Understand the meanings of the code symbols.
3. Interpret and infer messages from the figures or pictures.
4. Prepare a rough draft.
5. Put these messages in logical continuity.
6. Compare and contrast variables.
7. Begin the paragraph with a topic sentence, and follow it up with sentences that help to expand, explain, elaborate, exemplify.

Examples

1. Study the following carefully. Describe and comment on it in not more than 150 words.
Darow '99 (2 Wheeler Producer) Sales

S. No.	Item	No. of units sold in the first quarter of	
		1994-1995	1995-1996
1.	(100 cc) Motorbikes	22,250	34,441
2.	Mopeds	55,088	75,025
3.	Scooters	2,182	8,053

Answer

Darow '99 (2 Wheeler Producer) Sales

This chart is about the sales by Darow '99 (2 Wheeler Producer) in the first quarters of 1994-1995 and 1995-1996. The company produces three types of 2 wheelers, namely, 100 cc motorbikes, mopeds and scooters.

In the first quarter of 1994-1995, the company produced 22,250 units of 100 cc motorbikes. During the same period, namely the first quarter of the following year (1995-1996) the sales reached 34,441 units, showing an increase of 12,191 which is a great achievement, reflecting the popularity of the motorbikes produced by this company.

Even the sale of mopeds recorded an impressive upward trend. In the first quarter of 1994-1995, 55,088 mopeds were sold whereas in the first quarter of 1995-1996, the sales went upto 75,025 recording an increase of 19,937 units.

Not only that, even the sale of scooters showed a very great increase. In the first quarter of 1994-1995, 2,182 scooters were sold. But in the first quarter of 1995-1996 the company sold 8,053 scooters. This proves that the two wheelers produced by Darow '99 are in great demand.

2. Write about 15 sentences using the points given in the table. Make use of 'Contrast Words' where necessary.

S. No.	Property	Pig iron	Steel	Wrought iron
1.	Melting point	1000°C	1330°C – 1400°C	1539°C
2.	Weldability	cannot be welded	can be welded	can be welded
3.	Magnetisation	cannot be magnetised	can be permanently magnetised	can be temporarily magnetised
4.	Tempering	can be tempered	can be tempered	cannot be tempered

Answer

This table gives information about the various properties of Pig iron, Steel and Wrought iron. These properties are: melting point, weldability, magnetisation and tempering. Wrought iron has the highest melting point (1539°C) whereas pig iron has the lowest melting point (1000°C). Steel has a melting point ranging from 1330°C – 1400°C. While steel and wrought iron can be welded, pig iron cannot be welded. Pig iron cannot be magnetised. Though both steel and wrought iron can be magnetised, wrought iron can be magnetised only temporarily, whereas steel can be magnetised permanently. Further, wrought iron cannot be tempered whereas both pig iron and steel can be tempered.

3. Study the following carefully. Describe and comment on it in a paragraph of not more than 150 words.

S. No.	Producer	1988-89	1989-90
1.	Hindustan Motors	28,293	28,730
2.	Premier Automobiles	38,293	42,313
3.	Maruti Udyog	98,505	1,08,023
4.	Standard Motors	172	Nil
5.	Sipani Motors	85	Nil

Answer

Production of Passenger Cars in India

This table is about the production of passenger cars in India, in 1988-1989 and 1989-1990 by Hindustan Motors, Premier Automobiles, Maruti Udyog, Standard Motors and Sipani Motors. The table highlights the extremities in the production of passenger cars, with Maruti Udyog ranking first and Standard Motors and Sipani Motors stopping their production altogether in 1989-1990. The production of passenger cars by Hindustan Motors was 28,293 in 1988-89 and it rose to 28,730 in 1989-90 showing an increase of 437 cars. It shows that the demand for their cars increased in 1989-90. Similarly, there was an increase in the production of cars by Premier Automobiles, their figures being 38,293 and 42,313 respectively, with an increase of 4020 cars. But Maruti Udyog excelled them all with its figures in six digits, 1,08,023 in 1989-90 compared with 98,505 in 1988-1989, increasing its production by 9518 cars. It indicates that during this period people had the greatest preference for Maruti cars. It might be due to price, fuel economy, size, maintenance, resale value, etc. It is sad to think of Standard Motors and Sipani Motors whose production was 'NIL' in 1989-1990. Even in 1988-1989 their production was the lowest (172 and 85). It shows that their cars were no longer in demand. Perhaps the growing popularity of Maruti cars sealed their fate.

4. Organisation Structure of an Industrial Firm

Managing Director					
GM (Finance)		GM (Purchase and Production)		GM (Marketing)	
Manager (Resources)	Manager (Expenditure)	Manager (Purchase)	Manager (Production)	Manager (Market Research and Advt.)	Manager (Sales/ Export)
Section Head	Section Head	Foreman	Foreman		
Accountants	Accountants	Purchase	Skilled/		
Clerks	Clerks	Personnel	Unskilled		
Typists	Typists	Quality	Labourers		
Peons	Peons	Inspector			
Menials	Menials				

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Answer

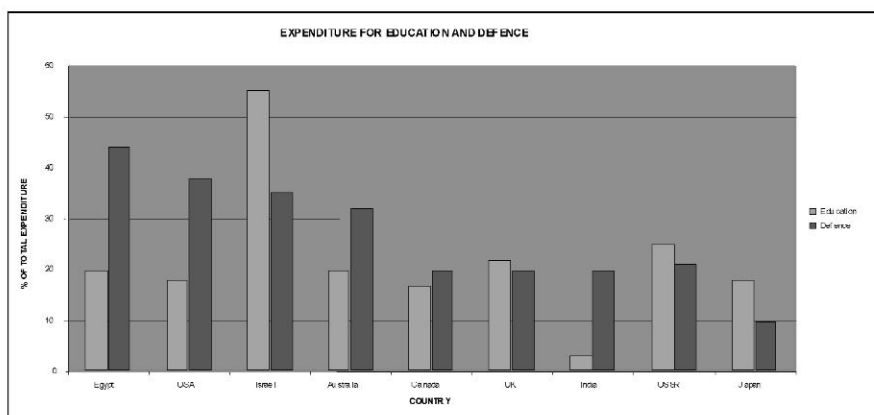
Organisation Structure of an Industrial Firm

This table shows the organisational structure of an industrial firm. The Managing Director is right on top. Under him there are three General Managers, one each for Finance, Purchase and Production and Marketing. The General Manager for Finance has two Managers under him, one for Resources and the other for Expenditure.

Similarly the General Manager for Purchase and Production has the Manager for Purchase and the Manager for Production under him. The General Manager for Marketing is assisted by Manager for Market Research and Advertising and Manager for Sales/Export respectively. Both the Managers for resources and expenditure have section heads under them who are assisted by their sub-ordinate staff—Accountants, Clerks, Typists, Peons and Menials. Without these staff, no office can work. The Manager for purchase and the Manager for production have a foreman each assisted by their sub-ordinate staff. The foreman in the purchase section has the purchase personnel and the Quality Inspector whereas the foreman in the production section has skilled/unskilled labourers.

It could be seen from the table that both the finance and the purchase and production sections are provided with more staff than the marketing section, which is thinly manned. The finance section has more sub-ordinate staff than the purchase and production section.

5. Look at the following bar chart which describes the expenditure on education and defence as percentages of the total expenditure incurred by different countries. Write a paragraph presenting the information contained in it using expressions of comparison. (M.Q.P.)



Answer

Expenditure on Education and Defence

The given bar chart describes the expenditure on education and defence as percentages of the total expenditure incurred by different countries. The nine countries are: Egypt, USA, Israel, Australia, Canada, UK, India, Russia and Japan.

Egypt spends 20% of its total expenditure on education. On the other hand, it spends 44% of its total expenditure on defence. It spends more on defence than on education.

USA, one of the richest countries in the world, with an expenditure of billions of dollars, spends as much as 18% of its total expenditure on education whereas it spends almost 38% of its total expenditure on defence, with its most sophisticated weapons of war.

It is interesting to note that a small country like Israel has the maximum thrust on education. It spends the maximum amount, about 55% of its total expenditure on education while it spends 35% of its total expenditure on defence. Obviously, its top priority is education.

Australia spends 20% of its total expenditure on education. The percentage is the same as in the case of Egypt. But Australia spends about 32% of its total expenditure on defence which is still one of its priorities.

When we consider Canada, there is a reduced percentage of its total expenditure on both education and defence. While it is about 17% on education, it is 20% on defence.

UK, on the other hand, spends about 22% of its total expenditure on education whereas it spends slightly less on defence, which is 20%.

Our own country, India, seems to be different from other countries. It is an eye-opener that expenditure on education is only about 3% whereas on defence it is as high as 20%. The country's defence is perhaps more important than its literacy.

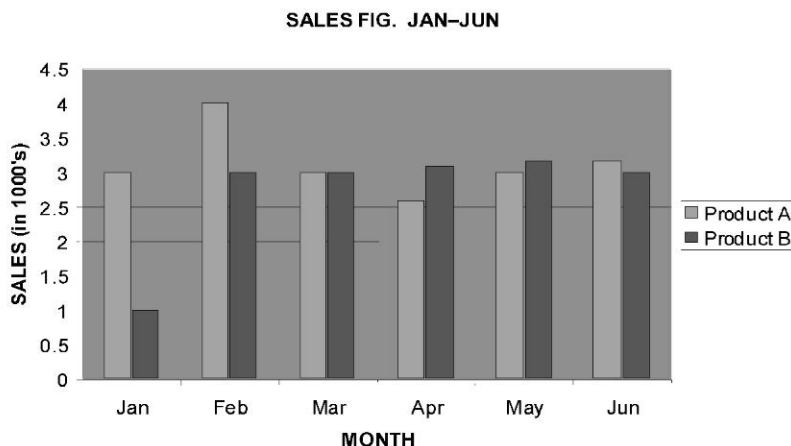
Russia, one of the most powerful countries in the world, spends a high percentage of its total expenditure on education, viz. 25% whereas it spends slightly less, that is about 21% on defence.

Japan also spends more on education. It spends 18% of its total expenditure on education. On the other hand, its percentage of total expenditure on defence is much less than 10%.

An overall view indicates that Israel leads the other eight countries in terms of its total expenditure on education which is 55%. The country that spends the least on education is India (3%).

Egypt spends the maximum percentage of its total expenditure on defence, namely, 45% whereas Japan spends only 7 to 8% of its total expenditure on defence.

6. Look at the following bar chart which describes the sales figures of products A and B for the period from January to June in respect of a firm. Write a paragraph presenting the information contained in it using expressions of comparison. (M.Q.P.)



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Answer

Sales Figures of Products A and B During January–June

This bar chart describes the sales figures of products A and B for the period from January to June in respect of a firm.

In January, 3000 units of product A were sold whereas only 1000 units of product B were sold in the same period. Product A sold three times as much as product B.

The situation improved in February when the sale of product A increased by 1000 when it touched the 4000 mark, which was the highest in the entire six month period, from January to June. Similarly, the sale of product B shot up to the 3000 mark.

In March, both products A and B were in equal demand. The demand for product A became less, from 4000 in February to just 3,000 in March. On the other hand, the demand for product B was the same as it was in February, namely, 3000.

The figures for the month of April present a different picture. The demand for product A further decreased to about 2600 whereas the demand for product B was more than what it was in March. The demand for product A further diminished while the demand for product B further increased.

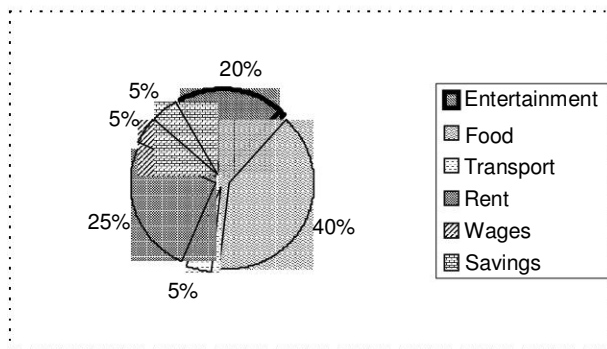
The month of May shows appreciation in demand for both the products. The sale of product A increased to 3,000, what it was in January, while the sale of product B was above the 3,000 mark, the highest during the period January to June.

In June, product A experienced a further rise in its sale, well beyond 3,000, next only to what it was in January but the sale of product B for the first time showed a decreasing trend, but still firm at 3,000, what it was in February.

The bar chart shows that the maximum sale of product A was in February when it touched the 4,000 mark, whereas the maximum sale of product B was in May, when it was above 3000. It was a big leap from 1,000 in January.

7. **Look at the following pie chart, which shows the different ways Mr. Gupta spends his monthly income. Write a paragraph presenting the information contained in the chart. In about 100 words, write whether Mr. Gupta is spending his income wisely or not.**

(Nov./ Dec.2002)



Answer

The given pie chart shows the different ways Mr. Gupta spends his monthly income.

Mr. Gupta has his own lifestyle. He spends the chunk of his income, 40% on food. For rent, he pays 25% of his monthly income. On entertainment, he spends 20% of his monthly income. He spends 5% of his monthly income on transport and an equal amount on wages. After all this, he is able to save only 5% of his monthly income.

Mr. Gupta is not spending his income wisely. Perhaps he believes in enjoying life without much thought for the future. That is why he spends 60% of his monthly income on food and entertainment. To make life comfortable, he lives in a house for which he pays 25% of his monthly income as rent. It seems he discounts the future heavily. That is why he saves only a meagre percentage (5%) of his monthly income.

If Mr. Gupta spends less on food, entertainment and rent, and saves more, he can have a secure and comfortable future.

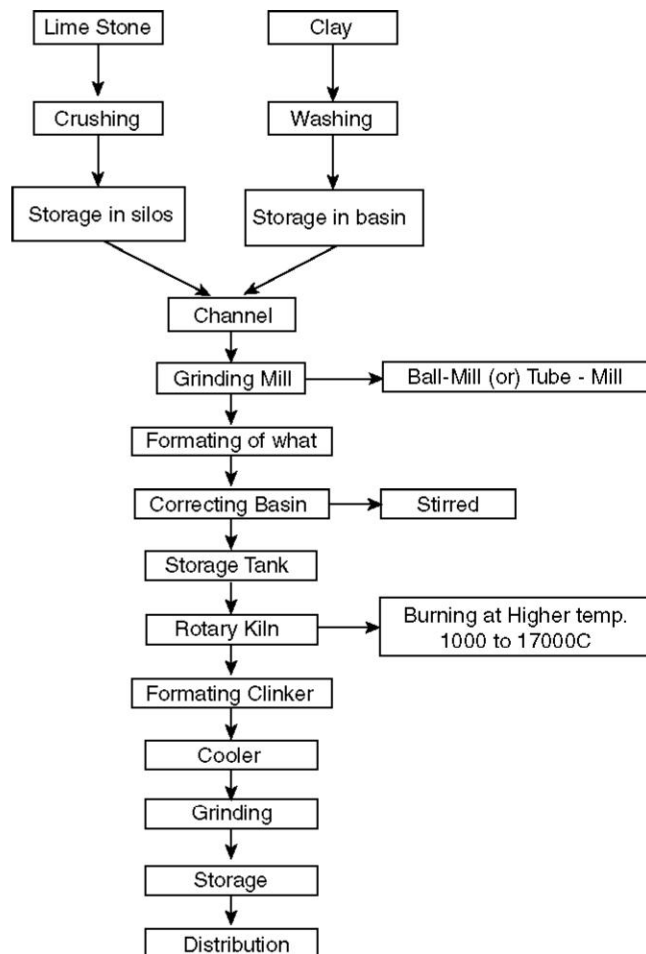
FLOW CHARTS

The following sequential expressions and connectives are used in describing a process or explaining a flow chart.

at first	then	until	thereafter	obtained	from
initially	finally	derived	from	subsequently	on

8. Flow Chart:

Stages in Making Cement



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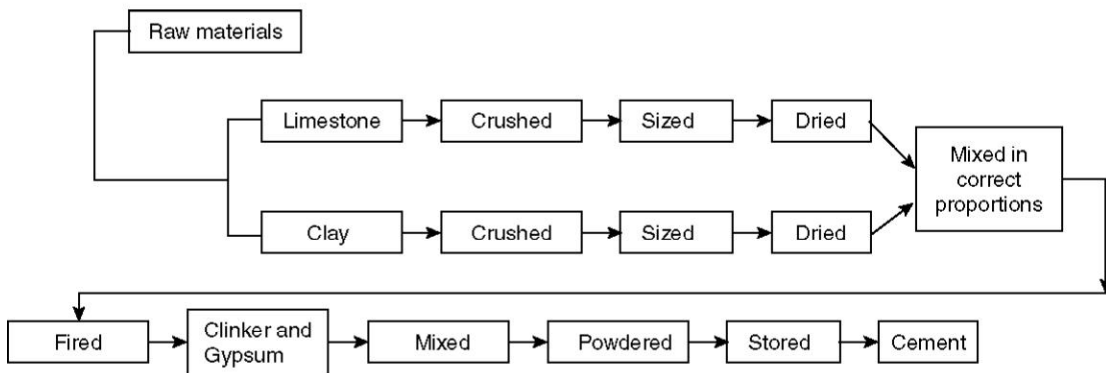
Answer

Stages in Making Cement

This flow chart describes the various stages in making cement. Limestone is crushed and sent to the storage silos. Clay is washed with water and stored in the storage basin. The crushed limestone and clay are mixed in proper proportions and are channelised to a grinding mill where they are ground and the formation is known as slurry. In order to grind, either ball-mill or tube-mill is used. The slurry is led to the correcting basin where it is stirred well to ensure the correct composition of the mixture. After that, it is taken to the storage tank. Then it is fed into the rotary kiln where it is burnt at a higher temperature (1000 to 1700°C). Clinkers formed are sent to the cooler. The clinkers are ground and sent to the storage silos. Now the finished product in the form of cement is ready for distribution.

9. Convert the following flow-chart into a paragraph of about 150 words. Use an introductory and a concluding sentence with proper sequential expressions and appropriate connectives. (M.Q.P.)

The Process of Making Cement



Answer

The Process of Making Cement

The flow chart describes the process of making cement. The two raw materials used in the process are limestone and clay. Limestone is crushed, sized and dried. After that, it is stored in the storage silos. Similarly, clay is crushed, sized, dried and stored in the storage basin. The crushed limestone and clay are mixed in correct proportions. The formation is known as slurry. The slurry is fed into the rotary kiln where it is burnt at a higher temperature (1000 to 1700°C). A chemical reaction takes place and clinkers are formed. Now gypsum is added to the clinker. The mixture is powdered and sent to the storage silos. Eventually the finished product is ready in the form of cement. In this way cement is made.

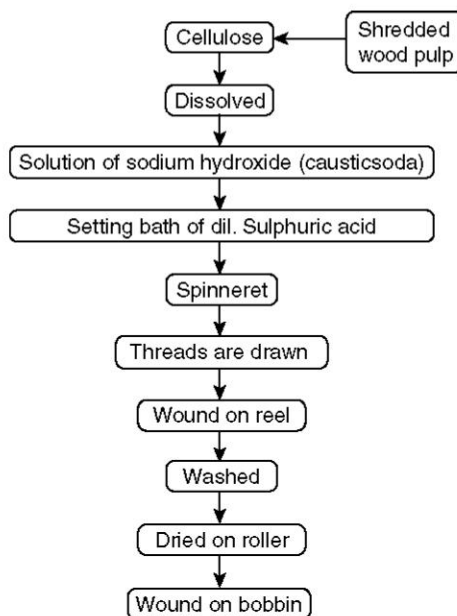
10. Given below is a process description. Read it and draw a flow chart representing the process described. (M.Q.P)

Rayon is a man-made fibre. It is, infact, a reconstituted natural fibre-cellulose. Rayon is made by dissolving cellulose in a solution of sodium hydroxide, or caustic soda, as it is usually called. The cellulose is obtained from shredded wood pulp. The dissolved cellulose is formed into threads by forcing it through a spinneret in a setting bath of dilute sulphuric acid. The threads are drawn from the setting bath, wound on reel, washed, then dried on a heated roller, and finally wound on to a bobbin.

Answer

The Process of Making Rayon

RAYON (Man-made fibre, reconstituted fibre - cellulose)



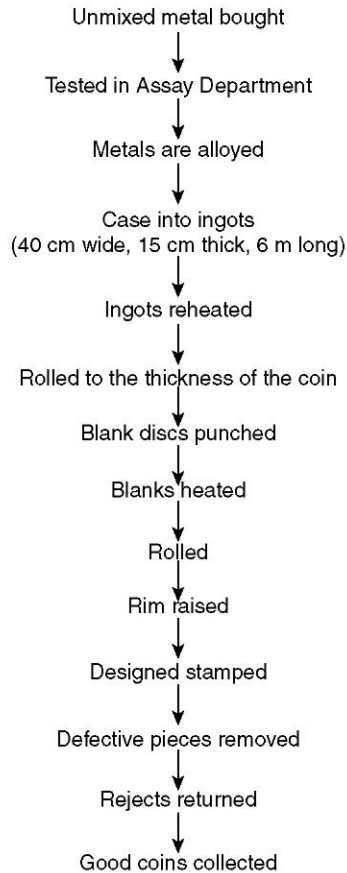
11. Using the information provided in the given text, draw a flow chart describing the different stages involved in the making of coins. Remember to give an appropriate title to your flow chart: (Apr./May 2003)

Coins are manufactured in a factory known as a mint. There are three mints in India: Bombay, Calcutta and Hyderabad. Production of coins at the mints is a complete process. It starts with the buying of unmixed metals and their testing by the Assay Department. Then the metals are alloyed in oil-fired or electric arc furnaces, and cast into ingots 40 cm wide, 15 cm thick and 6 m long. These ingots are reheated until the temperature is hot enough for hot rolling. During this stage, the ingots pass through a series of rollers until they form long, thin sheets which are the thickness of a coin. From these thin strips, blank discs are punched. These are the basic raw materials for the manufacture of coins. The blanks are heated to soften them, and they are rolled so that the rim is raised. Finally they are stamped with the design of the coin. At every stage, defective pieces are carefully sorted out, and (with the frequent checking and returning points) strict quality control is maintained. Rejects are returned to the alloying stage, together with the waste from the alloy strip.

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Answer

The Process of Making Coins



Do it Yourself

1. Study the following carefully. Describe and comment on it in not more than 150 words.
Steel Production (in million tons)

(Apr.'97)

S. No.	Country	1985	1986	1987
1.	Japan	105.3	98.3	98.5
2.	USA	80.1	74.0	81.0
3.	China	46.7	51.9	55.3
4.	Germany	40.5	37.1	36.3
5.	India	10.5	11.9	12.3
	Total world production	720.1	715.4	734.7

2. Production of Electricity in Tamil Nadu

(Apr. '98)

Sl. No.	Type	1986-87	1987-88	1989-90
1.	Hydro electricity	3,319	2,184	3,353
2.	Thermal electricity	6,129	7,161	7,868
3.	Wind power		1	3

3. Small Scale Industries

(Nov. '98)

S. No.	Year	No. of units in Tamil Nadu	No. of units in India
1.	1985-86	72,000	53,000
2.	1986-87	82,000	57,000
3.	1987-88	91,397	15,76,000
4.	1988-89	1,02,224	17,01,000

4. Differences Between Mass and Weight

(Apr. 2000)

Sl. No.	Mass	Weight
1.	Mass of a body is the measure of its inertia	Weight of a body is the gravitational pull acting on the body
2.	Mass of a body remains the same wherever the object is and hence is a scalar quantity	Weight of a body changes from place to place depending on the gravitational pull and hence is a vector quantity
3.	Mass is a fundamental quantity	Weight is a derived quantity
4.	Mass of a body is measured using a beam balance	Weight of a body is measured using a spring balance
5.	Units of mass are grams and kilograms	Units of weight are kilogram weight, gram weight and Newtons

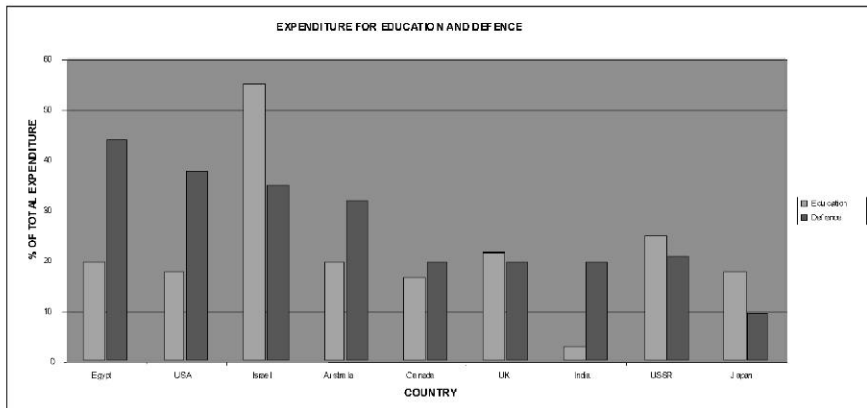
5. Foodgrain Production in India

(Oct. 2000)

Production in Million tons	1993-94	1994-95	1995-96	1996-97	1997-98
Rice	56	49	59	61	62
Sugarcane	25	24	28	29	30
Coffee	11	11	18	24	41

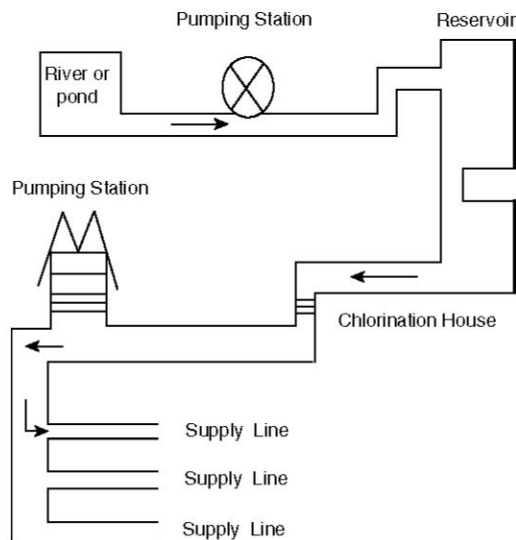
Look at the following bar chart which describes the expenditure on education and defence of the total expenditure incurred by different countries. Write a paragraph presenting the information contained in it using expressions of comparison. Also give your comments in about 100 words, on defence expenditure and whether you think it is necessary or not.

(Nov./Dec. 2002)



7. Look at the flow chart given below and write a paragraph describing the process involved in the purification of water and its supply to the people of a town in about 100 words. Also, write a paragraph of 100 words pointing out the importance of purifying water before it is supplied to the public. (Apr./May 2003)

Process of Purification of Water



8. Convert the following passage into a flow chart. (Jan. 2005)

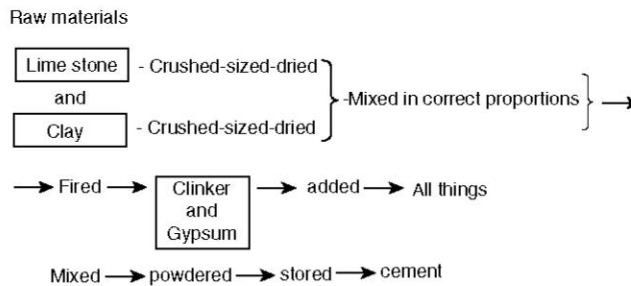
The earth contains a large number of metals which are useful to man. One of the most important of these is iron. The iron ore which we find in the earth is not pure. It contains some impurities which we must remove by smelting. The process of smelting consists of heating the ore in a blast furnace with coke and limestone and reducing it to metal. Blasts of hot air enter the furnace from the bottom and provide the oxygen which is necessary for the reduction of the ore. The ore becomes molten, and its oxides combine with carbon from the coke. The non-metallic constituents of the ore combine with the limestone to form a liquid slag. This floats on top of the molten iron and passes out of the furnace through a tap. The metal which remains is pig iron.

We can melt this again in another furnace—a cupola—with more coke and limestone, and tap it out into a ladle or directly into moulds. This is cast iron.

9. Convert the following flow chart into a running passage of 200 words :

(Jan. 2005)

Stages in Making Cement



10. Read the following passage carefully.

(Apr./May 2004)

Silver occurs in ores of several metals. The froth process of extracting silver accounts for about 75 percent of all silver recovered. Here the ore is ground to a powder, placed in large vats containing water suspensions of frothing agents and thoroughly agitated by jets of air. Depending on the agent used, either the silver-bearing ore or the gangue adhering to the bubbles of the froth is skimmed off and washed. The final refining is done using electrolysis. Represent this by means of a flow chart.

- 11. A manufacturing company realised the gross return of Rs. 2,75,000 during 1980. Rs. 75,000 was spent on maintenance of infrastructure, Rs. 1,20,000 towards wages for marketing the products; Rs. 30,000 was spent on transport and Rs. 10,000 on commissions. Rs. 30,000 was repaid towards loan. The remaining amount was reinvested in manufacture. Represent this allocation on a pie-chart showing the item of minimum expenditure, the item of major expenditure and work out each expenditure into percentage.**

(Apr./May 2004)

12. Read the following passage carefully and draw a flow chart.

(Nov./Dec. 2003)

Calcareous material like limestone/marl is one raw material. Argillaceous material like clay/shale is another raw material. Limestone/marl is crushed and powdered and sent to the storage silos. Clay/shale passes through washing and reaches the wash basins. The powdered limestone from the storage silo and the clay/shale from the wash basins are proportionately mixed and sent to the unit where they are ground. After grinding, the mixture becomes slurry. The slurry is passed through the correcting basin and the slurry storage tank into the rotary kiln. Coal which is crushed and dried and pulverised in the grinding ball mill reached the rotary kiln where the slurry is heated. From the kiln, the material reaches the cement clinker from where it reaches the stage for being cooled. After cooling, it passes into the clinker storage from where it reaches the clinker grinding elevators. Gypsum is added at this stage. From the grinding elevators, cement reaches the silos. From the silos, it becomes cement ready to be weighed and packed.

CHAPTER



Letter Writing

A letter has been defined as a conversation by post. Letters are perhaps the most commonly used form of written communication. We write letters when we need to communicate with people who are away from us.

There are several different kinds of letters such as friendly letters, Business letters, etc. each of which has its own particular form; but there are certain matters of form common to all. They are:

1. The Heading
2. Date
3. The Courteous Greeting or Salutation
4. The Communication or Message –the body of the letter
5. The Subscription or Courteous Leavetaking
6. The Signature
7. The Superscription on the envelope

The Heading This informs the reader *where* you wrote a letter. It should be the writer's full postal address. The position of the heading is the top right hand corner of the first page.

Date The sequence is day, month and year without any punctuation mark. Except March, April, May and June you can use the standard abbreviations of the other months. The date comes just below the address as shown below:-

5, Nethaji Road,
Erode - 638 001.
5th September, 2001.

or

5 Nethaji Road
Erode - 638 001
5th September 2001

The Courteous Greeting or Salutation This form of Greeting will depend upon the relation in which you stand to the person to whom you are writing:

- (i) To members of your family, for example, it will be
My dear Father, My dear Mother (Mummy), Dear Aunt,
Dear Ashok,
- (ii) To friends, it will be
Dear Shri Rajan or Dear Rajan,
- (iii) To business people, it will be
Dear Sir or Gentlemen,

If you address an officer by his designation, write "Dear Sir", "Dear Madam", "Sir", "Madam". If you address an officer by his or her name, you may write

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Dear Shri Ashok

Dear Dr (Mrs) Gupta

Dear Miss Johnson

The Communication or Body of the letter The body contains the contents or message of the letter and the style in which it is written will depend upon the kind of letter you wish to write. The body of the letter has three sections.

- (a) The opening which states the purpose of writing the letter and reference to any previous correspondence on the subject.
- (b) The message, giving essential details and explanation.
- (c) The concluding remarks which indicate what action you expect the receiver to take.

You should use simple and direct language and short sentences. The message should be complete. The letter should be written neatly taking utmost care with regard to the punctuation marks.

The Subscription or Courteous Leave-taking It is a formal way of signalling the end of the letter and is written two spaces below the end of the body. The first letter of the first word of a complimentary close is written in capitals.

Yours faithfully or Yours truly or Yours sincerely

The following forms of Subscription can be used in various type of letters.

- (i) To relatives and near friends:

Yours affectionately, Your affectionate (or loving) son, or brother or friend.

With love and best wishes.

From your affectionate friend.

'Sincerely' should not be used in letters beginning with Dear Sir, after which the proper word is faithfully or truly.

The Signature Two spaces below the complimentary close, the writer signs the letter.

Yours faithfully,

S.P. Gopal.

In letters to strangers the name is typed below the actual signature. A lady should prefix to the name Smt. or Kumari in brackets.

Yours faithfully,

(Smt.) K.S. Rajan.

The Superscription on the envelope:

This may be spaced and punctuated in either of the following ways.

Shri.S.K. Nagarajan,

5 Big Street,

Chennai - 600 005.

or

Shri.S.K. Nagarajan

5 Big Street

Chennai - 600 005

INFORMAL LETTERS

1. You have received a letter from a friend abroad asking you to tell him something about your family. Draft a suitable reply.

167, Main Road,
Vandalur.

1st September, 2001.

My dear Alex,

Thanks for your loving letter dt. 24th August. I am glad that you are fine and are working very hard for your examination. I wish you all the best and a very bright future.

Well, you have asked me to write about my family. I am pleased to learn that you are interested in knowing about my family. We are five of us, my father, mother, elder brother, elder sister and myself.

My father is an Engineer. He is working as Chief Engineer (Production) in Binny Engineering Co., Chennai. He had his education (M.E.) at IIT, Chennai and did his M.B.A. at Indian Institute of Management, Ahmedabad. He is now 50 but by God's grace still looks young, robust and smart. I am lucky to be his son—he does so much for me, spends so much on my education and provides us all with comforts of life.

My mother is very beautiful. Even at this age (47) she looks extremely attractive. Her face is her fortune. My father married her mainly because of her good looks. She is a Postgraduate in English Language and Literature. In her M.A. Degree Examination she got the first rank. Her days at Presidency College, Chennai are still fresh in her memory. Mainly because of her, we are able to speak and write good English. She has one great plus point. She is an excellent cook. She can prepare very tasty and mouth-watering North Indian, South Indian and Chinese dishes. The result is that we have all become good eaters. She is a very loving mother and a devoted wife. Her day starts with Pooja.

(She begins the day with God.)

My elder brother is married and has two children—a son and a daughter—both of whom are studying in an English medium school. My elder brother is an officer in the State Bank of India, Thousand Lights, Chennai drawing a decent salary. My sister-in-law is a good singer. She is fond of both western and Indian music. She always gives a helping hand to my mother in the household work.

My elder sister is getting married next month. She is eagerly looking forward to her bright future with her in-laws. She is a graduate in Computer Science.

Well, this in brief, is my family. How about yours? Can I have a pen-picture of it? To make everything come alive, I am sending a family photograph. Please convey my love and regards to everyone at home.

With best wishes,

Yours affectionately,

S.R. Rajan.

To

Mr. Alex Johnson,
71/E/002, Main Road,
Singapore - 7.

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2. Write a letter to your cousin advising him/her to take up a computer software course during the vacation in December. In your letter, explain the benefits of enrolling for such a course. Your letter should not exceed 200 words.

(Apr./May 2003)

5, Nethaji Road,

Erode 638001.

10th August, 2003.

My dear Lakshmi,

Thanks for your loving letter. Glad to learn that you are preparing well for your semester examinations. I am confident that you will come out with flying colours.

After the exams are over, you'll have vacation. You would do well to take up a computer software course during the vacation. Nowadays knowledge of computer software is a must. In the long run, after you get your degree, when you look for a job, your computer education will be a plus point.

The benefits of enrolling for a computer software course are many.

The computer system is made up of what we call hardware and software. The hardware is the machine and the software are the data, programmes, etc., used when operating a computer.

The computer receives, processes, gives out, stores and retrieves information. Its speed and accuracy ensure almost instantaneous solutions to complicated arithmetic calculations.

The computer has begun to affect and mould our lives, job behaviour and even our thinking. In business, the computer does secretarial work, prepares and maintains payrolls, provides inventories, handles successfully budgeting, planning, controlling research and development activities. Cheque clearance and collection in banks, inventory control and sales in departmental stores and super markets, reservation in air and land transport systems, movement schedules for cargo flights, trains and operating instruments, operation of robots in factories, filling containers in food plants, sealing bottles in pharmaceutical companies are now computer controlled.

The computer plays a vital role in government agencies, too. Records of all sorts related to census, payroll and taxation are maintained by the computer. The computer helps in easy and quick identification of criminals by matching finger prints and identifying voice patterns.

There is no field in which the computer is not used. To keep abreast of the latest developments in science and technology there is nothing that can match the computer.

I hope you will realise the importance of a computer software course and enroll for one in your own interest.

With best wishes,

Yours lovingly,

(S. Priya)

To

Miss P. Lakshmi,

15, Big street,

Triplicane,

Chennai 600005.

3. Imagine that you have got internet facility at home. Write a letter to your friend explaining the advantage of having internet facility at home. Your letter should not exceed 200 words. (Nov./Dec. 2002)

41, Nethaji Road,
Erode 638001.
5th August, 2003.

My dear Raju,

I am fine. I hope you are all in excellent health and happiness.

I am writing this letter to inform you that now I have got internet facility at home. Now I can work wonders.

Internet is a store house of information. There are several millions of pages of information available on the internet. I can download the information, store it in the disk and even take a printout.

We can communicate with any of the millions of users of the internet using e-mail, which is electronic mail sent from one computer to another. It is quicker and cheaper.

Using the internet, we can also take part in inter-active chat sessions with other users anywhere in the world. While chatting all 'conversation' appears on the screen as a series of typed messages.

We can also join a News group discussion and learn a lot about any topic of our choice.

The most important uses of the internet are in the field of education and medicine. It acts as a world library.

One can perform many tasks, if one has access to the internet. Some of these are:

We can publish our research papers on the internet, thus making them available to others.

We can use it for teaching, for example, we can teach languages using WWW.

We can use it for publicity and advertisement.

We can refer to the pictures of an art gallery.

With the help of internet we can get copies of classics like 'Alice in Wonderland'.

Copies of journals and magazines can be had from the internet.

The information provided on the net pertains to almost all the subjects. It is an ocean of knowledge.

I hope you will also have the internet facility at home to get all these benefits. Please reply soon.

With best wishes,

Yours sincerely,

(Babu)

To

Mr. K. Raju,
105, Bells Road,
Chepauk,
Chennai - 600005.

Do it Yourself

1. Imagine that you have acquired a personal computer. Write a letter to your friend describing how you enjoy using it. (M.Q.P.)
2. Imagine that you visited a factory where you had a chance to observe an industrial robot at work. Write a letter to your friend describing what you saw. (M.Q.P.)
3. Imagine that you have got internet facility at home. Write a letter to your friend explaining the advantages of having internet facility at home. Your letter should not exceed 200 words. (Nov./Dec. 2002)
4. Write a letter to your cousin advising him/her to take up a computer software course during the vacation in December. In your letter, explain the benefits of enrolling for such a course. Your letter should not exceed 200 words. (Apr./May 2003)
5. Write a letter to a friend giving him an account of a picnic you had. (M.Q.P. 2001)
6. Write a letter to your friend telling him how you spent your summer vacation.
7. Write a letter to your friend giving a brief description of a holiday tour you intend to make.
8. Write a letter to your father describing a recent cricket match in which your side won.
9. Write a letter to your uncle thanking him for the birthday gift he sent you.
10. Write a letter to your father giving an account of the Annual Sports Day in your college.
11. You had arranged to meet a friend at the railway station but you could not do so. Write a letter of apology, explaining the lapse on your part.
12. You have just returned from a place of tourist interest. Write a letter to your father telling him all about the place and the experiences you had there.
13. Write a personal letter to your father (who happens to be the Headmaster of the local school) explaining the uses of a computer which has been presented to the school by a Philanthropist. (Jan. 2005)
14. Your father has bought a personal computer but he is not sure how useful it would be for him at home. Write a letter to him telling him how best and useful it can be in his daily life. (Nov. / Dec. 2003)
15. Your uncle has offered to sponsor you for a three-week activity holiday with some training. You have to choose between mountaineering and trekking. Write a letter to your uncle thanking him for sponsoring you and explain your reasons for choosing either mountaineering or trekking. (Apr. / May 2004)

LETTERS OF APPLICATION

The job application letter usually has the following components.

1. Introductory statement indicating the source from which you came to know about the vacancy.
2. Personal data such as date of birth, marital status, address, nationality, etc.
3. Record of education—starting from Hr. Sec. Exam to the highest level, emphasising the degrees or the courses which make you suitable for the job.
4. Record of experience—organisation where you previously worked, duration of the job and the nature of duties.
5. Commendations and awards received, prizes won, research papers and books published, conferences attended, etc.
6. References—Names and address of at least three persons who can vouch for your ability and sincerity in work, preferably one of the teachers in the university or college attended, one of the previous employers, and one other responsible person who is acquainted with your work and conduct.

A job application letter has two parts. The first part is a short introduction which contains the introductory statement, i.e. a reference to the source of information about the job vacancy and highlights the outstanding qualifications of the applicant. The other part of the letter is the bio-data or the résumé or curriculum vitae which lists not only the educational qualifications and job experience of the applicant but also his personal details, his awards and commendation and other special qualities which make him suitable for the job.

Application for Job

Erode-1,
20th August, 2001.

From

S. Krishnamoorthi, B.E., M.B.A.,
59, Nethaji Road,
Erode - 638 001.

To

The Personnel Manager,
M/s. Voltas Ltd.,
6, Armenian Street,
Chennai - 600 001.

Sir,

Sub: Application for the Post of Production Manager—Reg.

In response to your advertisement in 'The Hindu' dated 20th August, 2001, I wish to apply for the Post of Production Manager in your prestigious company as I believe I have the requisite qualifications and experience for the job.

After doing my B.E. from Bharathiar University, Coimbatore, I did MBA from IIM, Ahmedabad. I have been working as Assistant Production Manager in Sri Lakshmi Mills, Coimbatore for the past four years. I have gained enough experience in using modern techniques for increasing the production. I am enclosing my résumé along with other testimonials for your perusal.

I am confident that I would get more opportunities for professional development and for making significant contribution in your highly esteemed and progressive organisation. I assure you, Sir, that I shall discharge my duties to the entire satisfaction of my superiors. I would be available for an interview at any date convenient for you.

Thanking you,

Yours faithfully,
(S. Krishnamoorthi)

Encl : résumé.

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Résumé

Name : S. Krishnamoorthi
 Date of birth : 10th September 1974
 Address : 59, Nethaji Road,
 Erode - 638001.
 Nationality : Indian
 Marital status : Unmarried
 Present designation : Assistant Production Manager,
 Sri Lakshmi Mills,
 Coimbatore.

Educational Qualifications:**Specialised Projects / Courses:****B.E.**

1. Quality Control of Metal Cutting. (A Project)
2. Economics and the Design Production Level in an industry.

MBA

1. Production and Quality Control.
2. Technological Forecasting.
3. Project Scheduling and Resource Allocation. (A Project)

Training:

January—June 1994.

Underwent training at Salem Steel Plant, Salem and learned modern techniques for increasing the production in an industry.

Work Experience:

July 1997 to present day Asst. Production Manager, Sri Lakshmi Mills, Coimbatore.

Extra-curricular Activities:

Games : Captain of Bharathiar University Cricket team. Active participant in Tennis and Football teams.

References:

1. Dr. S. Subramaniam,
 Prof. and Head,
 Department of Mechanical Engineering,
 Erode Sengunathar Engineering College,
 Erode - 638 057.

2. Prof. S.R. Rajan,
Director,
Indian Institute of Management,
Ahmedabad - 43.
3. Shri K.P. Sundaram,
Managing Director,
Sri Lakshmi Mills,
Coimbatore.

Declaration:

I declare that the particulars given above are true to the best of my knowledge and belief.

Place : Erode

(Sd) S. Krishnamoorthi

Date : 20th August, 2001.

Signature.

Do it Yourself

1. Read the following advertisement which appeared in the *Daily Mirror*, dated 10th May 1996.
Adt. No. TNPSC / No.22/AE (E)
Applications are invited for fifty appointments as Assistant Engineer (Electrical) in the Tamil Nadu Public Works Department.
Detailed particulars and form of application can be obtained from the Secretary, Tamil Nadu Public Service Commission, Chennai 600 002, by a requisition in writing specifying the advertisement number, with a crossed postal order to the value of Rs.50 payable to the Secretary, TNPSC, at Chennai and with a self-addressed envelope (26 × 12cms) with postage stamps for Rs.10 affixed. Write a requisition letter. (Nov.'97)
2. Assume suitable names and addresses. Johnson and Johnson Company, Mount Road, Chennai, requires Maintenance Engineers in Electrical/Mechanical Engineering. The incumbents should have minimum five years experience in the relevant field. Write an application for the job with suitable biodata. (Apr. 2000)
3. Write an application for the post of Assistant Engineer in Hindustan Engineering Works, 103, Nehru Road, Delhi -100001. Provide your biodata. Address your application to the Personnel Manager of the company. (M.Q.P.)
4. Write a letter of application with biodata for any one of the positions in response to the following advertisement.
SAMYO SOFTWARE Ltd. invites applications for the following Analysts.
Senior Systems Analysts.
Program Analysts.
Qualification : Graduate and Post Graduate Engineers or an MBA, or Graduates in Computer Technology from a reputed college/University would qualify for the above posts. Mail your applications to 'Manager (Personnel)', SAMYO SOFTWARE Ltd., New Colony, Chennai - 41. (Nov.'99)
5. Read the advertisement given below and write a letter of application, with biodata, for the post advertised.
For designing and managing a large information network, applicants should have a Bachelor's degree in Engineering, should be skilled in computer language and should have excellent communication abilities. Applications should be addressed to The General Manager, TVS Whirlpool Ltd., Chennai - 20. (Nov.'99)
6. Write an application for the post of Assistant Engineer in a factory. Provide your biodata. (M.Q.P. 2001)

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7. Write a letter to the Principal of your college requesting him to grant you leave for two days.
8. Write a letter to your Principal requesting him to issue you a Conduct Certificate.
9. Write a letter to your Principal requesting him to issue you a Transfer Certificate.
10. Write a letter to your Principal requesting him to give you a Testimonial.

BUSINESS LETTERS

Business letters should be terse, clear and to the point. They are formal in style. These letters relate to 1. Enquiries 2. Quotations 3. Orders 4. Complaints, etc. These letters should be brief. The writer must use short sentences and be clear in his message.

Any business letter may have

- (i) Reference (ii) Subject (iii) Enclosure

Reference is an identification number usually given in all business letters. It helps in maintaining a proper record of correspondence in an organisation. This element is placed between the date and the inside address.

Subject is like the heading of an assignment. It states briefly what the business of transaction is. It is placed either between the inside address and the salutation or between the salutation and the body of the letter. The word 'subject' is followed by a colon and then the matter is indicated. Giving the subject of a letter quickens its disposal and speeds up the action and hence it is very useful in business correspondence.

Enclosure is a list of all the documents attached sequentially. Sometimes it contains further details and specifications. If a letter has anything as enclosure, it is indicated by typing the word, 'Enclosure' or 'Encl' below the name of the sender.

Enquiry Letters

These ask for information, for catalogues or samples or for quotations.

An enquiry letter should state

1. What exactly you want : Name of the Article/Product
2. Specifications : Size, length, thickness, etc. (quality), the number you want (quantity).
3. When you want.
4. Ask the supplier to quote prices.
5. Ask for discount.
6. Ask for mode of payment (by money order, V.P.P., cheque, etc.) and mode of transport (by rail, post, etc.).

Inviting Quotations

Erode -1,
1st March 2001.

From

The Purchase Manager,
Smart Import and Exports,
Brough Road,
Erode - 638 001.

To

The Manager,
Wipro Information Technology,
Coimbatore - 641 042.

Sir,

Sub : Purchase of Computers—Quotation called for—Reg.

We intend to purchase computers for our office. Please send your quotation on or before 15.03.2001, 4.00 p.m. The rates quoted should be inclusive of all taxes. The place of delivery is at the office address mentioned above. Hence packing and forwarding charges may be specified separately. 50% of the total cost of the item will be paid through crossed Demand Draft along with the order and the balance will be paid after the receipt of the items in working condition. Necessary information such as discount, guarantee period, after-sales maintenance, contract terms, validity, etc. may be furnished. We request you to quote for the best quality product and enclose the pamphlet with your quotation.

Thanking you,

Yours faithfully,

Purchase Officer.

S.No.	Description and specification of the item	Approximate no. of items required
1.	Pentium III 800 MHz	
2.	64 MB RAM	
3.	AGP with 8 MB VRAM	
4.	14" colour monitor	
5.	20 GB HDD	3 sets
6.	1.44" FDD	
7.	2 serial one parallel	
8.	52 × CD ROM	
9.	28.8 KBPS Internal MODEM	
10.	Multimedia Key Board	
11.	64 BIT Sound Blaster Card	
12.	2 External Speakers	

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Calling for Quotations
Regional Engineering College,
Trichy.

18th September, 2001.

Dr.S. Srinivasan,
Prof. & Head of ECE.

M/s. Modern Electro Products Ltd.,
57, Peters Road,
Chennai - 600 014.

Dear Sirs,

Sub: Calling for Quotation—Reg.

Our college wishes to purchase the following items for the electronics laboratory. Please send us your lowest quotation for them and the details regarding the terms and conditions, date of delivery, discount allowed, the validity date of quotation, guarantee period of the quotation, etc.

We are looking forward to receiving your quotation at the earliest.

	Items	Nos.
1.	Transistor BC 107	2
2.	Function Generator	3
3.	Diode IN 4007	20
4.	Resistors TK, 5%	2
5.	Multi Meter	2
6.	IC Chips LM 339	3
7.	IC Chips LM 7400	2
8.	CRO	3

Yours faithfully,

Dr.S. Srinivasan,
Prof. & Head of ECE.

A Quotation Letter

**PIONEER SPORTS
1416 ANNA SALAI
CHENNAI - 600 002.**

25th August, 2001.

The Manager,
M/s. Southern Sports Co.,
107, Brough Road,
Erode 638 001.

Dear Sir,

Thank you for your enquiry of 10th August, 2001. We are happy to quote our prices for the goods required by you.

			Price per unit
1.	Cricket bats	- Super deluxe	Rs.300.00
2.	Cricket balls	- International quality	Rs. 50.00
3.	Carrom boards	- Regular size	Rs.250.00
4.	Hockey sticks	- Diplomat	Rs. 75.00
5.	'TRADE'	-	Rs.100.00

We wish to inform you that all our goods are of superior quality and long lasting. They carry guarantee.

We allow a 10% discount. These are current prices and are subject to change.

Mode of payment : 50% advance with order. Balance on delivery.

We look forward to receiving an order from you at the earliest.

Yours faithfully,

S. Raja,
Sales Manager.

Do it Yourself

1. Your office needs printing paper. Request a supplier to send his quotation for the supply of the paper. (Explain what the paper is for; the approximate amount required; when the delivery is required; what is the price to cover).
(Nov.'98)
2. Assume suitable names and addresses:
Your factory needs computers. Write a letter to suppliers calling for quotations. Give the specification of the required number of computers, what the price is to include (packing, forwarding, insurance, taxes), discount, guarantee period, after-sales maintenance, contract terms, customer support and the expected date of delivery.
(Nov.'99)

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3. As the G.M. (General Manager) of a Computer Hardware Company, write a letter to suppliers of air-conditioners calling for quotations. Specify the areas to be air-conditioned giving their sizes and measurement in square metres, ask for the type and model required with discount and guarantee period, the price is to include taxes, packaging and forwarding and insurance, and expected date of delivery. (Oct. 2000)
4. Assume yourself as the Purchase Officer, Pambam Engineering College, Coimbatore - 641 010. Invite quotations for the following item.
100 Computers with these specifications:
Intel Celeron Processor - 366 MHz / 32 MB / 4.8 GB HDD / 1.44 MB FDD / 30.7cm TFT / Audio / 10-24 x CD / 56 K integrated modem. (Apr. 2000)

Ordering Goods

In Business letters ordering goods, care should be taken to give clear and exact description of the articles wanted. An itemised list of the goods wanted should be supplied, with the quality and quantity required.

Directions for forwarding should be given (by rail, post, etc.) and the manner in which payment will be made indicated (by money order, V.P.P., cheque, etc.). Everything should be clear and precise.

Layout of a letter ordering Supply of Goods:

- | 1. Sender's address | : | Hindustan Computers,
51/7, Nethaji Road,
Erode - 638 001, Tamilnadu. | | | | | | | | |
|--|-----|---|-------|-----|--|---|----------------------|---|----------------------|---|
| 2. Date | : | 15th November, 2001 | | | | | | | | |
| 3. Suppliers | : | Multinational Computers,
4172, Broadway,
Chennai - 600 001. | | | | | | | | |
| 4. Salutation | : | Dear Sirs, | | | | | | | | |
| 5. Acknowledging | : | Thank you for your letter dated
previous reference
1st November, 2001, enclosing your latest
catalogue. | | | | | | | | |
| 6. Placing the order | : | We should be grateful if you could send us the
following items. | | | | | | | | |
| | | <table border="0"> <thead> <tr> <th>Items</th> <th>No.</th> </tr> </thead> <tbody> <tr> <td>1. Computer AT-486 with
16MB RAM 40 MHz speed</td> <td>1</td> </tr> <tr> <td>2. Computer AT - 386</td> <td>1</td> </tr> <tr> <td>3. Computer AT - 286</td> <td>1</td> </tr> </tbody> </table> | Items | No. | 1. Computer AT-486 with
16MB RAM 40 MHz speed | 1 | 2. Computer AT - 386 | 1 | 3. Computer AT - 286 | 1 |
| Items | No. | | | | | | | | | |
| 1. Computer AT-486 with
16MB RAM 40 MHz speed | 1 | | | | | | | | | |
| 2. Computer AT - 386 | 1 | | | | | | | | | |
| 3. Computer AT - 286 | 1 | | | | | | | | | |
| 8. Proposing details of | : | We would like to get these items before 10th
transaction
December, 2001. The bill in duplicate may
please be sent for payment. | | | | | | | | |
| 9. Subscription | : | Yours faithfully, | | | | | | | | |
| 10. Signature | : | Sethu Raman | | | | | | | | |
| 11. Name and designation | : | Manager. | | | | | | | | |

Do it Yourself

1. As the Purchase Officer of your factory, place order with a dealer for the supply of ten scientific calculators. Thank for the quotations sent. Confirm the description of the items, the terms of payment, the agreed discount, the mode of payment, the delivery date, packing and delivery instructions. (Assume suitable names and addresses). (April, 1997).
2. Place an order, with a supplier, for calculators.
Give specifications for the calculators, prices and discount decided upon, number of items required, packing and forwarding instructions, mode of payment. (Oct.2000)

Letters of Complaint

In a letter of complaint all that you have to do is to

1. State the complaint,
2. Give the relevant details and
3. Request remedial action.

When you complain to the supplier about the quantity or quality of goods you received, you should not be rude or angry. You should be gentle but firm in your complaint by stating the problem clearly and suggesting possible solutions.

In replying to a Business letter, always quote the number of reference and the date of the letter you are answering. For example: "In reply to your letter No.602/Q, dated July 10th, 2001."

Letter of Complaint:

- (a) Assume that you are the Purchase Officer of a factory. You had placed an order with a dealer for the supply of five colour T.V. sets to be placed in different parts of the factory. The sets you received from the dealer are of poor quality. Complain to the supplier. Mention the date of the order, relevant reference numbers, the date of delivery and the specific nature of the defects. Ask for an explanation. Refer to the inconvenience caused. Suggest how the matter could be set right. (Give appropriate names and addresses) (Apr. '97, Nov.'99, M.Q.P.)

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SANKAR CEMENTS
SANKARI - 636 010

Sankari - 10
4th April, 2001.

From,
J. Gokul,
Purchase Officer,
Sankari-10.

To
M/s. Sumi Electronics,
41, II Agraharam,
Salem - 636 001.

Dear Sirs,

Sub : Colour Television Sets—Defective—Reg.
Ref: (1) Our order No.121/P/2001, dt.01.03.2001
(2) Your cash bill no.1321/CTV/2001, dt.01.04.2001.

We regret to inform you that the five colour T.V. sets supplied by you (vide your cash bill no.1321/CTV/2001/ dt.01.04.2001) and delivered to us on 01.04.2001 are of poor quality. The picture is not clear. We ordered colour T.V. sets. But your T.V. sets give only Black and White pictures. The remote controls are also not functioning properly. We bought these sets to be placed in different parts of the factory for the benefit of our workers. But the sets you have supplied are good-for-nothing. We just can't use them. It is causing us a lot of inconvenience and trouble.

Kindly let us know where things went wrong. Why did you supply us good- for-nothing sets?

Please send your Engineer to rectify the defects. Otherwise, please take back these sets and replace them with new ones in good working condition, or else, treat our order as cancelled. Kindly settle the matter in maximum 7 days.

Thanking you,

Yours faithfully,

J. Gokul,
(Purchase Officer).

- (b) Write a letter to the Deputy Commissioner of Police, complaining about the noise problems caused by the constant use of loud speakers in your residential area. In your letter, offer four suggestions as well, to solve the problems you have described.

(Apr./ May 2003)

Erode-1

10th November, 2003.

From

K. Gopal,
66, Nehru Street,
Erode-638 001.

To

The Deputy Commissioner of Police,
Erode-638 001.

Sir,

I wish to bring to your kind notice the noise problems caused by the constant use of loud speakers in our residential area.

Of late the loud speaker nuisance in our locality has become a menace. Not a day passes without it. All my appeals, complaints and entreaties to the authorities have fallen on deaf ears.

There are two marriage halls in our locality. Almost every day there is a marriage—sometimes two marriages. Marriage is primarily a private matter but people make it a public affair. They make it a point to play cassettes and use the loud speakers to carry the sound as far as possible. We just can't avoid being distracted by this. The sound is deafening our ears.

When it is election time, one just can't sleep at night or have peace during the day. The sounds disturb us round the clock. Students find it impossible to concentrate on their studies. Old and sick people, even children are tortured by these most unwanted noises.

When any V.I.P is visiting our town, the autos, cars and taxis are fixed with loud speakers to announce the arrival and engagements of the V.I.P as if people have no other work to do.

When people take out processions, they no longer believe in marching silently. The whole world must know that they are agitating. They also use loud speakers to attract the attention of everyone.

The following suggestions are offered to solve the problems referred to above:

There should be restrictions on the volume and pitch of loud speakers. Especially at night the use of loud speakers should not be permitted. Election meetings and processions should not be permitted near educational institutions and hospitals as they are often noisy. Trees and shrubs should be planted in front of buildings to absorb sound. Roadside plantations are also needed for this purpose. Government should pass the "Noise Pollution Control Act" to control noise pollution.

Thanking you,

Yours faithfully,
(K. GOPAL)

Do it Yourself

1. You had placed an order on 10th March, 1997 with a publisher for the supply of ten copies of 'Engineering Mathematics' for I year B.E. by Dr.C.V. Raman; cost of each copy is Rs.40. To be sent by V.P.P urgently. You have just received after one month five copies of 'German for Engineers' by Boris Becker. Cost of each copy is Rs.80. You do not need these books which you had not ordered. Your final examinations are about to start. Write a suitable reply. (Apr. '98)
2. As the Purchase Officer of your factory, you had placed an order with a supplier for five colour T.V.'s. The sets you received from them are of poor quality. Complain to the supplier. State the reference number and the date of your order, the date of delivery, details of payment made and the specific nature of the effects. Ask for an explanation. Refer to the inconvenience caused. Suggest how the matter could be set right. (Nov. '99)
3. As the Purchase Officer of a company, you had placed an order for the supply of Computers. The machines you received are of poor quality. Complain to the supplier. Mention the date of your order, the date of delivery, details of delivery and the specific nature of the inconvenience caused. Suggest how the matter could be set right. (M.Q.P)

INVITING DIGNITARIES

Generally, people are invited in person. You approach in person the P.A. or Secretary of a dignitary, introduce yourself, express your purpose and seek an appointment.

Content

When you meet the VIP, you

- (i) Introduce yourself
 - (a) Your name (without Mr. and initials, e.g., I am Swaminathan)
 - (b) Your position (General Secretary/President of Students' Association)
 - (c) Name of the College, its location (place)
- (ii) State the purpose of inviting him

(a) Inauguration	(b) Annual Day
(c) Sports Day	(d) Valedictory Function
(e) Special Lecture, etc.	
- (iii) Mention date, time, place.
- (iv) Suggest a theme or topic for addressing you (as a general audience) or request him to speak on a specific topic for addressing you as a disciplined audience (Say, ECE or Chemical)
- (v) Talk about your arrangement for transport (by car/rail/plane) or if he so wishes, agree to his own arrangements (indicate meeting expenses) depending on the distance between his residence and your Institution/Organisation.
- (vi) Request him to play any additional role, if you wish.
- (vii) (a) Find out if he is available for the date, or
(b) If he is not free, ask if he is free for another date.

(viii) Express your happiness about his acceptance or say you will contact him later to confirm his acceptance. But if the VIP is far away, then, of course, you will try to contact him telephonically first and later through a letter.

As the Secretary of your Engineering Branch Association, invite the Manager of the local Bank to address the final-year students. Request him to speak on how to be self-employed, available avenues, details of loans, security, documents required, interest rates, repayment period, tax holidays, subsidies etc. Suggest suitable dates and timing. Find out his convenience. Persuade him to accept your invitation. (Apr. '99)

Erode - 57

20th March, 2001.

From

P. Krishnan, IV B.E. (Mech.),
Secretary,
Mechanical Engineering Association,
Erode Sengunthar Engineering College,
Erode - 57.

To

The Senior Manager,
Canara Bank,
Cutchery Road,
Erode - 638 001.

Sir,

As Secretary of the Mechanical Engineering Association of Erode Sengunthar Engineering College, I have immense pleasure in inviting you to address the final year students on "How to be self-employed". As Senior Manager of the Lead Bank I feel that you are the most competent person to speak on this topic. With the help of your lecture kindly enlighten us on the following points : how to be self-employed, available avenues, details of loans, security, documents required, interest rate, repayment period, tax holidays, subsidies, etc.

The meeting is scheduled to be held at 3.00 p.m. on 27th March, 2001 in the Seminar Hall of our college. Or else you may even choose 28th or 29th of March 2001. Your convenience is most important.

We look forward in receiving a favourable response from you. Please let us know your acceptance so that we can go ahead with the preparations. Please do oblige us.

Thanking you,

Yours faithfully,

Sd/ P. Krishnan.

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Do it Yourself

1. Write a letter inviting an eminent engineer to preside over the Hostel Day. Describe the occasion, the Hostel, the duration of the function and the audience. Request him to stay on for the Hostel dinner. You are writing as the Hostel Secretary. (Apr. '98)
2. Assume that you are the Collector of Coimbatore. Write a letter to the Headmaster of your school declining his invitation to preside over the Annual Sports Day. State valid reasons for not accepting the invitation. (Apr. 2000)
3. Assuming yourself to be President of your College Students' Association, write a letter to the District Collector inviting him to formally inaugurate the activities of your association at a function to be presided over by your college Principal. Assume all other relevant details. (Apr. 2000)
4. Write a letter inviting the Managing Director of a leading computer company to deliver the key-note address and inaugurate a Computer Seminar organised by your department. Give details of the seminar participants, theme, convenient dates and persuade him to accept your invitation. (M.Q.P.)
5. Assume that you are the Secretary of the Voluntary Blood Donors Club of your college. Write a letter to the District Medical Officer, inviting him to preside over the inaugural function of the Blood Donation Camp, to be organised in your college campus. Give necessary details. (Apr. 2000).
6. Write a letter to the Registrar, Anna University inviting him to preside over the valedictory function of Youth Red Cross to be held during the 2nd week of February 2005. Give him the details regarding the date, time, venue, number of participants, purpose of the programme and the nature of the activities undertaken by the volunteers of Youth Red Cross during 2004-05 (Jan. 2005)

PERMISSION TO UNDERGO PRACTICAL TRAINING

For the project work, students have to write letters to companies/factories/industries/mills concerned and get prior permission to undergo training. The following details have to be mentioned:

1. Branch of engineering and division/section where he/she wants to get training.
2. The probable duration of the training and the proposed date.
3. Whether he/she has been sponsored by the institution where he/she is studying.

Erode - 1
26th April, 2003.

From

R. Srinivasan, III B.E. (E.C.E.),
Erode Sengunthar Engineering College,
Thudupathi,
Erode - 57.

To

The Personnel Manager,
Lucas TVS Ltd.,
Padi,
Chennai - 600 050.

Sir,

Sub : Permission to undergo practical training—Reg.

I am a III year B.E Electronics and Communication Engineering student of Erode Sengunthar Engineering College, with keen interest in Machine Tool Design pertaining to auto electricals. I have chosen this topic for my project work. I wish to undergo practical training in your prestigious factory during the summer vacation from 15.05.2003 to 14.06.2003.

The practical training under your expert guidance will enable me to carry out my proposed project in the above field successfully. Moreover, I am confident that this practical training will equip me with the latest trends in this field. As your world-renowned company has the most sophisticated equipment and foreign qualified technicians, I would be able to get the best guidance, training and experience.

Kindly grant me permission to undergo training in your esteemed company. I assure you that I shall abide by all the rules and regulations stipulated by your company. Our Professor and the Principal have issued a sponsorship certificate which I am enclosing for your favourable consideration.

Thanking you,

Yours faithfully,
(R. Srinivasan).

Do it Yourself

1. Write a letter to a factory requesting them to permit you to undergo practical training in their factory. Give the reason for your choice, your project work, your elective, your academic achievement, the duration of the training and how you could be useful to them. (Nov. '97)
2. Assume suitable names and address.
Write a letter to a factory requesting them to permit you to undergo practical training during the summer vacation. Give your academic achievements, project work, reasons for your choice and your usefulness to them. (Apr. '99)
3. Write a letter to a well-known company/factory requesting them to permit you to undergo practical training with them during your summer vacation.
Give your reasons for choosing them; your usefulness to them; how your project work is related to their field. (Oct. 2000)
4. As the representative of your class, write to some well-known companies/industries in the field of electronics in and around Bangalore seeking permission to visit them. Specify the dates and time of your visit, request for guidance from experts and discussion with experts in the field. (Oct. 2000)

LETTERS TO NEWSPAPERS

These should always be addressed to “The Editor”, and they usually end with ‘Yours truly’. The proper form of Salutation is *Sir*; and not *Dear Sir*. These letters should be short.

Suggestions :

- Keep the content brief and precise.
- Write intelligibly.
- Be lucid and clear in your thoughts and expressions.
- Use short paragraphs and short sentences.

1. Write a letter to the Editor of a newspaper about the loudspeaker nuisance in your locality.

Erode - 1

21st August, 2003.

To

The Editor,
The Hindu,
Chennai - 600 002.

Sir,

I shall be grateful if you could kindly publish the following in the “Letters to the Editor” column of your esteemed daily.

Of late the loudspeaker nuisance in our locality has become a menace. Not a day passes without it. All my appeals, complaints and entreaties to the authorities have fallen on deaf ears.

There are two marriage halls in our locality. Almost every day there is a marriage—sometimes two marriages. Marriage is primarily a private matter but people make it a public affair. They make it a point to play cassettes and use the loudspeakers to carry the sound as far as possible. We just can't avoid being distracted by this. The sound is deafening our ears.

When it is election time, one just can't sleep at night or have peace during the day. The sounds disturb us round the clock. Students find it impossible to concentrate on their studies. Old and sick people, even children are tortured by these most unwanted noises.

When any V.I.P is visiting our town, the autos, cars and taxis are fixed with loudspeakers to announce the arrival and engagements of the V.I.P as if people have no other work to do.

When people take out processions, they no longer believe in silent marching. The whole world must know that they are agitating. They also use loudspeakers to attract the attention of everyone.

In the interest of peaceful living, allowing people to carry on with their work without any disturbance from outside, I appeal to the authorities through these few lines in your newspaper, to take immediate steps to put an end to this public nuisance.

Yours truly,

(S.P. Rajan),
55, Brough Road,
Erode - 638 001.

2. Write a letter to the editor of a newspaper highlighting any four problems faced by commuters in city buses. Suggest suitable solutions for each one of the problems highlighted in about 200 words.

(Nov./Dec. 2002) (Apr./May 2003)

Erode-1

10th August, 2003.

To

The Editor,
The Hindu,
Chennai-600 002.

Sir,

I shall be grateful if you kindly publish the following in the "Letters to the Editor" column of your esteemed daily.

Commuters in city buses face several problems; some of which are over crowding, accidents, thefts and irresponsible behaviour of the conductor and the driver among others.

The following solutions are suggested for these problems.

Let there be more buses during peak hours. Besides the government buses, more private buses may be permitted on busy routes. Mini buses and share autos could also be of great help.

There are frequent accidents due to rash and negligent driving. Also, there is unhealthy competition among bus drivers for making their buses 'super fast'.

The authorities should take strict action against such drivers in the interest of public safety. Speed limit and speed breakers are needed at important points.

A crowded bus seems to be the best place for pickpockets. Their sharp fingers work wonders. To check this menace at least during peak hours, police personnel should be posted.

Many a time commuters are at the mercy of the driver and the conductor. To tease commuters, as it were, drivers don't stop the bus at the bus stop or stop it far away from the bus stop. Commuters get panicky and run after the bus. Sometimes conductors insist that the commuters tender the exact fare; otherwise they are not allowed to board the bus.

After all buses are meant for the comfort and convenience of the commuters. Then why this attitude? I hope something will be done to set things right.

Yours truly,

(K.P. Hari)

55, Brough Road,

Erode-1.

Do it Yourself

1. Write a letter to the editor of a local newspaper expressing your anguish over the pollution caused by the discharge of untreated effluents by the factories of your locality. (Apr.'99)
2. Write a letter to the Editor of a newspaper on reckless driving.
3. Write a letter to the Editor of a local newspaper drawing attention to the insanitary condition of the city bazaars.
4. Write a letter to the Editor of a newspaper complaining of the bad quality and inadequate supply of Municipal water in your town.
5. Write a letter to the Editor of a newspaper complaining about the problem of stray cattle in your area.
6. Write a letter to the Editor of a newspaper highlighting any four serious problems related to traffic in a metropolitan city like Chennai. In your letter you should also suggest suitable measures in order to overcome the problems that you have highlighted. (Apr./May 2004)
7. Write a letter to the Editor of a newspaper explaining the need for providing bright street lamps in your street where there is no adequate lighting for most part of street. (Nov./Dec. 2003)

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Examples

1. Read the following advertisement and write a letter of application for the post advertised enclosing your biodata.

Sales Engineers

A well-established company invites applications from aggressive and competent sales persons to sell microcomputer systems and related products.

Our requirements:

- a University degree in Engineering
- industry experience
- good command over English and Tamil

Attractive remuneration package will be offered to the right candidate. Please apply with full career details and salary expectation to the Human Resources Manager, P.O.Box 12543, General Post Office, Chennai.

Answer

Erode-1
10th December, 2003.

From

C. Arun Kumar, M.E.,
10, Brough Road,
Erode-638 001.

To

The Human Resources Manager,
P.O.Box 12543,
General Post Office,
Chennai-600 001.

Dear Sir,

Sub : Application for the post of Sales Engineer— reg.

Ref: Your Advertisement in “The Hindu” dated 10.12.2003.

I should like to be considered for the position of Sales Engineer advertised in “The Hindu” of 10th December, 2003.

I enclose my biodata sheet which shows that I have the qualification prescribed by you. I have an M.E. degree in Computer Science and Engineering from Anna University, Chennai. I have industry experience of five years. I also have good command over English and Tamil. My specialisation in my post-graduate course was microcomputer systems and my rich experience with M/s. HCL Computers has enabled me to become an aggressive and competent Sales Engineer.

I request you to consider my application favourably. I would be grateful if you could kindly call me for an interview at your earliest convenience. I assure you, Sir, that I shall discharge my duties to the entire satisfaction of my superiors.

Thanking you,

Yours faithfully,
(C. ARUN KUMAR)

Encl : Biodata.

BIODATA

1. Name : C. Arun Kumar
2. Address : 10, Brough Road,
Erode-638 001.
3. Father's Name : Mr.L. Chandrasekaran
4. Age and Date of Birth : 32 years, 12.06.1971
5. (a) Telephone No. : (0424) 2254321
- (b) E-mail : Carun @ mds.vsnl.net.in
- (c) Fax : (0424) 2254321
6. Nationality : Indian
7. Religion : Hindu
8. Marital Status : Unmarried
9. Languages Known : English, Tamil and Hindi
10. Education

S. No.	Institution	Dates	Degree	Subjects	Scholastic Standing	Prizes, Medals, Awards Won
1.	Erode Sengunthar Engineering College, Erode-638 057	1992–1996	B.E.	Computer Science & Engineering	First Rank 98%	Martin Gold Medal
2.	Anna University Chennai-600 025	1996–1998	M.E.	Computer Science & Engineering	First Rank 97%	Anna Gold Medal

11. Experience

Company	Dates	Position held	Duties
M/s. HCL Computers, Pondicherry	1998 till date	Sales Engineer	Marketing & Sales

12. Present Salary : Rs.20,000 per month
13. Salary Expected : Rs.25,000 per month
14. Extra-curricular Activities :
 - i) Captain of Bharathiar University Tennis Team
 - ii) Active Participant in Hockey and Football teams
15. Co-curricular Activities :
 - i) Won first prize in essay writing competition in English
 - ii) Won first prize in elocution competition in English
 - iii) Won first prize for presenting a technical paper at Anna University, Chennai
16. Hobbies : Philately and drawing

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References

1. Prof. V. Venkatachalam, M.E.,
Head,
Department of Computer Science & Engineering,
Erode Sengunthar Engineering College,
Erode-638 057.
2. Dr. S. Rajan, Ph.D.,
Prof. and Head,
Department of Computer Science & Engineering,
Anna University,
Chennai-600 025.
3. Mr.A. Siva Kumar, M.E.,
Chief Manager (Sales),
M/s. HCL Computers,
Pondicherry.

Declaration

I declare that the particulars given above are true to the best of my knowledge and belief.

Place : Erode

(Sd) C. Arun Kumar

Date : 10th December, 2001.

Signature.

2. Read the following advertisement and write a letter of application for the post advertised enclosing your biodata.

SHARP - SRJ Leaders in Auto-Electricals

We have over 3000 employees and require Design Engineers for special-purpose machines.

Candidates should be Mechanical Engineering graduates—preferably with a postgraduate qualification in machine design. They should

- Have a minimum of 5 years' experience in designing special-purpose machines pertaining to metal cutting/metal forming/assembly machines for light precision work.
- Be capable of independently designing SPMs from the concept stage.
- Have knowledge of low-cost automation.

Salary and service conditions will be attractive and not a restricting factor for the right candidate.

Please apply with complete biodata, salary last drawn and salary expected, and a brief description of the most interesting machine designed, within 15 days to

The Personnel Manager

Sharp-SRJ

Answer

Erode - 1
9th May, 2003.

From

S. Krishnan, M.E.,
5, Nethaji Road,
Erode - 638 001.

To

The Personnel Manager,
Sharp SRJ,
169, Parliament Street,
New Delhi - 110 011.

Dear Sir,

Sub: Application for the post of Design Engineer—reg.

Ref: Your Advertisement in “The Hindu” dated 9.5.2003.

I should like to be considered for the position of Design Engineer advertised in “The Hindu” of 9th May 2003.

I enclose my biodata sheet which shows that I have the qualification prescribed by you. My specialisation in my undergraduate course was machine design, and my experience with Weller Machine Works has enabled me to acquire a sound knowledge on special-purpose machines.

I request you to consider my application favourably. I would be grateful if you could call me for an interview at your earliest convenience. I assure you, Sir, that I shall discharge my duties to the entire satisfaction of my superiors.

Thanking You,

Yours faithfully,
(S. KRISHNAN)

Encl: Bio-data

BIODATA

- | | | |
|------------------------|---|--------------------------------------|
| 1. Name | : | S. Krishnan |
| 2. Address | : | 5, Nethaji Road,
Erode - 638 001. |
| 3. Father's Name | : | Mr. K. Srinivasan |
| 4. Age & Date of Birth | : | 28 years, 1-5-1975 |
| 5. a. Telephone | : | (0424) 2222111 |
| b. E-mail | : | skrishnan@md5.vsnl.net.in |
| c. Fax | : | (0424)2222111 |
| 6. Nationality | : | Indian |
| 7. Religion | : | Hindu |
| 8. Marital Status | : | Unmarried |
| 9. Languages Known | : | English, Tamil & Hindi |

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10. Education

	Institution	Dates	Diploma / Degree	Subjects	Scholastic Standing	Prizes, Medals, Awards won
1.	Erode Sengunthar Engg. College, Erode - 57.	1992–1996	B.E.	Mechanical Engineering	First Rank 98.5%	Green Gold Medal
2.	Anna University, Chennai	1996–1998	M.E.	Mechanical Engineering	First Rank 97%	J. Thomson Gold Medal

11. Experience

Company	Dates	Position Held	Duties
Weller Machine Works, 123, Gandhiji Road, Coimbatore - 10	1998 till date	Design Engineer	Designing special-purpose machines

12. Present Salary : Rs. 15,000 per month
13. Salary Expected : Rs. 20,000 per month
14. Extra-curricular activities : Captain of College Tennis Team, Active participant in Cricket and Football teams
15. Co-curricular activities : 1. Won first prize in oratorical competition in English
2. Won first prize in essay competition in English
3. Won first prize for a technical paper presented at P.S.G. College of Technology, Coimbatore.
16. Hobbies : Photography, gardening

References

1. Dr. S. Subramaniam, Ph.D.,
Prof. and Head,
Dept. of Mechanical Engineering,
Erode Sengunthar Engineering College,
Erode - 638 057.
2. Dr. P. Gopalan, Ph.D.,
Prof. and Head,
Dept. of Mechanical Engineering,
Anna University,
Chennai - 600 025.
3. Mr. A. Sivakumar, M.E.,
Personnel Manager,
Weller Machine Works,
123, Gandhiji Road,
Coimbatore - 641 010.

Declaration

I declare that the particulars given above are true to the best of my knowledge and belief.

Place : Erode

Date : 9th May, 2003.

(Sd) S. Krishnan
Signature.

Do it Yourself

1. Read the advertisement given below and write a letter of application, with biodata, for the post advertised. For designing and managing a large information network, applicants should have a Bachelor's degree in Engineering, should be skilled in computer language and should have excellent communication abilities. Applications should be addressed to The General Manager, TVS Whirlpool Ltd., Chennai-20. (Nov. '99)
2. Write an application for the post of Assistant Engineer in a factory. Provide your biodata. (M.Q.P. 2001)
3. Read the following advertisement and write a letter of application for the post advertised. Enclose your biodata in the proper form. (Apr./May 2003)

A reputed Engineering firm, located in Chennai requires Maintenance Engineers in Electrical, Mechanical and Civil branches

Experience: A minimum of three years in a related industry

Age: Not exceeding 35 years

Note: Preference will be given to computer literate specialists

Apply with full career details mentioning the present and the expected salary to the Human Resources Manager, P.O.Box.7977, C/o. The Hindu, Chennai-2 within 15 days.

4. Read the following advertisement. Write a job application letter with a biodata. Assume suitable addresses and qualifications. Wanted Oracle developers. Qualification: B.E./M.C.A. Experience: Working on Oracle developer's tools. Minimum experience: 2 years; Maximum experience: 5 years; Location: Bangalore, Chennai. (Nov./Dec. 2003)
5. Read the following advertisement published in "The Hindu" dt.29.3.2004 and write a letter of application.
Hyundai, a 50 crore plus company, the leader in the automobile industry requires the following personnel:
Deputy Manager, Design and Development
Requirements : B.E./B.Tech. graduates with 10 to 12 years of experience in an industry.
Apply to : Human Resources Department
 'HYUNDAI' Auto Limited
 14, West Bank Street
 M.M. Nagar
 Chengalpattu District
6. Read the following advertisement and write a letter of application for the post advertised, enclosing your biodata in the proper form. (Nov./Dec. 2004)

Dalal Mott MacDonald, a part of MM Group of U.K. requires in-line experienced personnel in the disciplines of Chemical/Mechanical/Civil/Instrumentation/Electrical Engineering for executing major projects in Chennai city. Candidates must have minimum 5–8 years of experience in the relevant branch and also completed projects. Apply within 10 days to HRD Incharge, 21 Abdul Razak Road, Saidapet, Chennai-600 015, with salary drawn and salary expected details.

CHAPTER

35

Paragraph Writing

DEFINITION OF A PARAGRAPH

A paragraph is a number of sentences grouped together and relating to one topic, or a group of related sentences that develop a single point. In other words, it is a group of sentences, all of which focus on a single subject. It is the smallest unit of prose composition. Letters, essays, stories, chapters in books, etc., are divided into paragraphs on this basis. A paragraph is thus a distinctive unit in all prose writings, usually marked by an indentation of the first line. A good paragraph makes clear meaning of one particular idea or topic by elaborating, elucidating or illustrating with examples.

By arranging words or phrases in a specific way we control the meaning of a sentence. Similarly, by sequencing the sentences in a particular way, we organise a paragraph on one main idea. The sequencing of words results in a complete change in the meaning. Likewise, the arrangement of sentences decides the meaning of a paragraph.

Chapters, essays and the prose compositions are broken up into paragraphs to make the reading easier. The beginning of a new paragraph marks a change of topic, or a step in the development of an argument or of a story. The division of a chapter into paragraphs must be made according to the change of ideas introduced.

The Format of the Paragraph (or) Principles of Paragraph Structure

The basic requirements of a paragraph are:

I. Unity

The most striking feature of a paragraph is its unity, i.e., the discussion or description of one theme, subject or topic termed as the core idea of the paragraph. Just as each sentence deals with one thought, each paragraph must deal with one topic or idea. Every section in the paragraph must be connected with the main topic of the paragraph. The paragraph and every part of it must be the expression of one theme or topic.

II. The Topic Sentence

Usually, in a paragraph one sentence contains the core or central idea. This sentence is called the topic sentence (because it introduces the topic). The rest of the sentences in the paragraph relate to the topic sentence in one of the following ways:

1. lead into/up to it
2. explain it by either expanding or limiting its meaning
3. support it
4. support or explain one of the supporting sentences
5. The topic sentence is sometimes called the *key sentence*, *summarising sentence* or *theme sentence*. It sums up the entire contents of the paragraph. If this sentence occurs at the beginning, the paragraph is said to have a deductive logic. If it occurs at the end of the paragraph, then the order is called inductive. The topic sentence can occur in the middle of the paragraph also. There are paragraphs, which do not have any one sentence containing the core idea. This idea, then, has to be inferred by the reader from the contents of the entire paragraph.

It is better to begin a paragraph with a topic sentence. One advantage of beginning with the topic sentence is that it helps you to give a shape to your paragraph.

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Examples of topic sentences are:

- (a) Television has become a popular means of entertainment.
- (b) The fox is described as a very clever character in many of the animal stories.
- (c) Let me describe the room I am in.

III. Coherence

A true paragraph is not just a set of sentences put together but sentences which are interlinked with each other. This interlinking provides coherence to the paragraph. There are four significant devices to achieve this quality. They are pronouns, repetition of key words and phrases, synonyms and connectives or linking words. The following are the commonly used connectives:

- | | | |
|---|---|--|
| 1. <i>Addition</i> | : | and, also, besides, finally, in addition(to), furthermore, moreover, next one, another, last. |
| 2. <i>Comparison and contrast</i> | : | however, but, yet, still, though, although, even though, nevertheless, nonetheless, in contrast, while, in spite of/despite, on the other hand, instead, on the contrary. |
| 3. <i>Time</i> | : | before, after, first, second, etc., soon, till, until, by the time, then, later, next, former, latter, afterwards, at length, immediately, meanwhile, at last, finally, in the meantime. |
| 4. <i>Choice</i> | : | or, either ... or, neither ... nor. |
| 5. <i>Concession</i> | : | although, granted, it is true that, naturally, although you could say that, of course. |
| 6. <i>Purpose</i> | : | so that, to this end, for this purpose, with this object. |
| 7. <i>Example</i> | : | for example, for instance, to illustrate, such as, especially, particularly, the following example. |
| 8. <i>Place</i> | : | here, there, beyond, opposite to, adjacent to, on the opposite side. |
| 9. <i>Result/Effect</i> | : | so, therefore, thus, consequently. |
| 10. <i>Cause</i> | : | for, because (of), since. |
| 11. <i>Clarification</i> | : | in other words. |
| 12. <i>Conclusion, summary and result</i> | : | in summary, in conclusion, in other words, in short, in brief, to conclude, to sum up, in sum, as I have said before, in fact, indeed, therefore, as a result, consequently, to be sure, as stated before. |

IV. Variety

This is another characteristic of a good paragraph, in fact, of all good writing. To avoid monotony, the paragraph of a composition should be of different lengths, and not always of the same sentence construction. The sentence patterns used in the paragraph must be varied. There should be long and short sentences, simple and complex, direct and involved, straightforward and inverted.

Examples

1. Human Language and Animal Language

We generally think of language as the unique possession of human beings. Man is called a rational animal and language is the medium through which he reasons and speaks. Human civilisation has been made possible by language which has served as a vehicle for the transmission of knowledge from generation to generation.

Animals and birds too have their own means of communication. Animals can communicate different messages by their cries; pain, danger and aggression can be accompanied by different signals. When a tiger approaches, deer send an alarm signal by their cry which warns other deer. Dogs have different ways of barking to communicate different messages. Birds signal to each other by song. The song pattern carries a different message.

It is the language of the bees that has struck scientists as the most remarkable. A bee which returns to the hive after scouting for honey, goes through a dance which communicates to the other bees the information about the location of the honey.

The language which the human beings use is also a form of communication. There are, however, some important differences between the two. First, the animal's language is restricted to a limited number of messages. Human language is not so limited. Man can generate an infinite number of messages. Secondly, animal language is controlled by or conditioned by the immediate situation. Only when the danger is present, the animal produces the message that indicates danger. It is in the presence of the danger that prompts the bird to voice the signal appropriate to the situation. In other words, a bird's message is inseparably linked to the present time and the immediate space around. Man's language is independent of the immediate situation. He can speak about the past and the future. He can tell lies and can invent stories. He can fantasise and speak about imaginary or impossible situations.

In short, human language is creative. Man can use language to speak about complex situations and communicate with himself and answer his own questions. Human language has changed and developed to meet complex needs of society. Man can even invent a language and teach a machine to understand such a language.

2. Do you think that the introduction of computers in industries will lead to unemployment? Express your ideas in a paragraph of about 200 words. (M.Q.P.)

A decade ago the most vehement opposition to computerisation came from people who believed that it would lead to unemployment. The hue and cry was based on the argument that computers would aggravate the unemployment situation by taking away jobs from human beings.

But now it is a different story. The unemployment is not a matter of too few jobs for too many people. There are many people without work and yet countless jobs that need to be done.

It has been established that the computerisation of an economy increases efficiency and productivity while bringing about savings in cost; funds are generated and additional employment is increased.

India's track record in the field of technology is now well-known. There is a great demand for software professionals from India. At the same time, there is a great deal of foreign investment in the technology sector.

Computers are now extensively employed in private and government sectors like banks, hotels, airlines, media and multinational business houses. Videsh Sanchar Nigam Limited (VSNL) supports infrastructure for most nationalised banks, small-scale industries and for the individual users as well. Many of these companies use networking systems like Wide Area Network (WAN) and Local Area Network (LAN) extensively.

Nuclear and defence establishments use super computers to manage vast amount of data. Software packages are created for a particular kind of industry, tailored to meet their special needs.

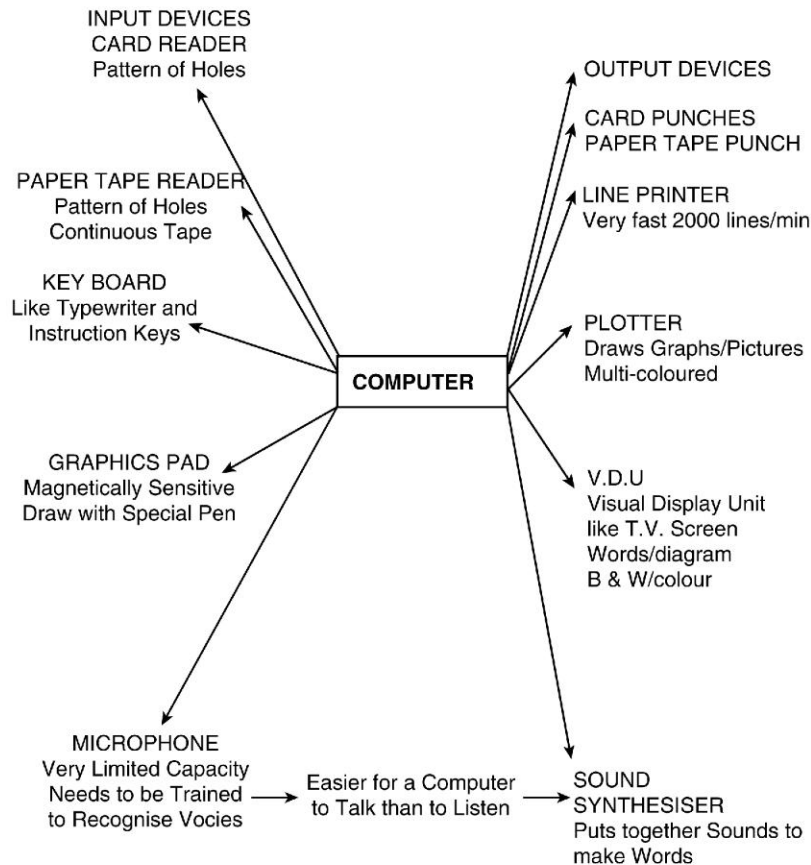
Schools and other educational institutions have introduced computers as a subject. Private institutions that train students in programming are thriving because of the demand for more and more computer analysts and programmers. More than 70,000 computer professionals graduate every year.

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The Indian IT industry is aggressively pursuing Internet and e-commerce opportunities. Indian firms design multimedia content for Hollywood animation movies. Technology parks have been set up in the metro cities because India is considered the top destination for software outsourcing.

The question is no longer whether computers are here to stay, but how much they contribute to the development of a country. Thus we see that there are countless opportunities for qualified computer personnel.

3. Input and Output Devices (Outline)



4. The Human Brain and a Computer (Outline)

	The human brain	A computer
Weight	about 1.5 kg	from a few grams to tons
Energy sources	blood glucose	electricity
Temperature needed	fairly steady	not very sensitive to change
No. of parts	approx. 10^{11}	approx. 10^{11}

Location of parts	inside skull	could even be in different countries
Memory	probably unlimited capacity	capacity limited by technology
Speed of calculation	slow compared to a computer	extremely fast

5. Different Types of Technology

Technology has been described by J. Bronowski as ‘the sum total of all the different techniques by which man changes his environment’. It is the tool that man has been consistently employing over the ages to fulfil his needs and aspirations in life and to make his life more comfortable. The stone implement that primitive man used to kill animals is as much an instance of technology as the silicon chip of today which has revolutionised electronics.

Technology has been classified into different types such as simple technology, intermediate technology, high technology, appropriate technology and so forth.

Simple technology: This type of technology is primarily based on human labour. It involves the use of very few tools which are of the simplest variety. They cost nothing and are easy to operate. It means hard, slow and prolonged work. The use of a hoe for cultivation or weeding by a farmer is an example of simple technology.

High technology: Unlike simple technology, high technology is not labour intensive. Machines of sophisticated and complex types do most of the work. Naturally, these machines and their operation cost a great deal. Of course, high technology operating on a large scale is highly productive. Oil mills, ceramic plants, shoe factories and textile mills are all examples of high technology.

Intermediate technology: As the name itself implies, this type of technology stands halfway between simple and high technology in terms of its capital costs, sophistication and scale of operation. The ox-drawn plough can be cited as a good example of intermediate technology as it stands between the traditionally hand-operated hoe and the modern diesel tractor.

Appropriate technology: This is a kind of low-cost technology of the intermediate type. The accent here is on the appropriateness of the technology used in relation to the cultural and geographical circumstances of people. It arises from the local needs and uses local resources, both human and material. Its benefits go to the local community. It is linked with the concept of social justice. Pedal powered rice-threshers and gobar gas plants are very good examples of appropriate technology.

6. Noise Pollution

Noise is no less a pollutant than the toxic chemicals. Abnormally high noise levels not only impair the hearing but also create nervous and emotional tension leading to high blood pressure, cardiovascular diseases and other health problems.

A study conducted at London’s Heathrow Airport has indicated a higher incidence of mental illness among those who lived in the neighbourhood compared with those outside the range of the aircraft din. According to a study in France, aircraft noise is the cause of 70 percent of the neuroses cases in Paris.

School children are among the worst victims of noise pollution, which causes a steep fall in concentration and loss of memory. “Sixty percent students in noise polluted areas fail to concentrate in the class. Forty percent suffer from hearing problems and number of them complain of headache problems and irritation”, says Dr Surya Kant Mishra who conducted a study in schools located by the side of noisy streets and railway colonies in Kanpur.

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Besides mental strain, noise can also cause restlessness and lack of communication. A survey by the Society for Clean Environment (SOCLEEN) revealed that noise pollution was constantly encountered by 36 percent of the population in Mumbai. Of them, 76 percent felt that noise resulted in lack of concentration, 69 percent complained of disturbed sleep and 65 percent of restlessness.

Prolonged exposure to a high level of noise results in Noise Induced Hearing Loss (NIHL), both temporary and permanent. According to a study, the highest incidence of NIHL was found in the foundry (40 percent) followed by the oil mill (32.7 percent), textile industry (32.6 percent), refinery (28.3 percent), fertiliser factory (19.8 percent) and a low of 8.1 percent in electric companies.

Unpleasant or even pleasant noise which is too loud may lead to severe cases of violent behaviour. An industrial survey in Chennai showed that in more than half of the industries, the agitating workers were from the “noisy section” of their respective industries.

Studies conducted in the Soviet Union (now the CIS) have also revealed that every decibel above the permissible level reduces labour efficiency by one percent and enhances the danger of hearing loss by 1.5 percent. In USA, at least eight percent workers are facing hearing problems due to prolonged exposure to noise. Though research in this field is in its infancy, random surveys are enough to send warning signals. The findings of a committee appointed by the Mumbai High Court to study the extent of noise pollution in Mumbai confirms the worst fears. “The average level of noise in the city ranging between 57 – 105 decibels is much higher than the level of 45 decibels (at night) and 55 decibels (during the day) recommended by the World Health Organisation”.

The report said, “loudspeakers are the main source of noise. The other factors are road and rail traffic, aircraft and industrial units, shrill pressure horns and fire-crackers”.

Mumbai, however, is not the only city suffering from the noise menace. The situation is equally bad in other metropolitan cities and the major industrial towns of the country.

(Source : News Today, 16 June 1987)

7. Animals and Plants

The first thing that strikes us about plants and animals is that animals can move about freely. Their bodies have nervous and muscular systems, which enable them to move from one spot to another. Plants on the other hand, are seen to be fixed to one spot. They do not move about by themselves. They are not capable of free spontaneous movement. This indeed is the most obvious difference.

But there are some exceptions: there are animals which do not move and there are plants which move about. There are many microscopic, single-celled plants, which are called “diatoms”. They move about in fresh water or sea water. Likewise there are tiny animals which are attached to rocks and never move away from the rocks. These are the corals, which stay in one place during their lifetime. In the course of time they form coral reefs.

The second difference which all of us notice is that animals generally have a maximum size and a definite form. All elephants, for example, look like elephants, shall we say? Trees, on the other hand, grow to very large sizes and many of them can have different shapes even when they belong to the same species. Animals do not change after they become mature, after they have ‘grown-up’. It is true that the shape of a coconut tree is different from that of a banyan tree; but if you look at different banyan trees you will see that they have different branching patterns.

The next difference relates to food. Plants manufacture their own food. A substance called chlorophyll helps plants to produce glucose and other products using sunlight and carbon dioxide from the atmosphere. Part of the food is used and part of it is stored. Animals get their food from other living beings, both plants and other animals. They digest the food. There are some interesting exceptions. A plant called the Venus Flytrap traps and devours insects. Another such plant is the pitcher plant. A more interesting exception is the euglena, a tiny organism, which has chlorophyll which it uses to manufacture food, and has also a mouth and gullet, and swallows and digests food. Would you call it a plant or an animal?

Finally, animals and plants can be distinguished by the structure of their cells. Plants have a rigid and inelastic cell structure. The cell contains mainly cellulose, a carbohydrate. In animals, the outer cell walls are soft; they are elastic and contain protein. But there are tiny animals called tunicates, which have coats containing cellulose.

These are the main differences between plants and animals. But if we think of organisms which are placed low in the scale of life, the distinction has no meaning. There are viruses and subviruses to which such a distinction does not apply. The distinction is clear only when we move higher up in the scale, especially when we speak of highly developed forms of life.

8. A Process to Make Washing Soap

To make your own soap you require 1kg of caustic soda, 1 kg of maida, 2 kg of groundnut oil, 400 g of washing soda, and 100g of a brightener like Ranipal.

Four litres of water should first be poured into a plastic bucket. The caustic soda should be added to it. The water should then be stirred with a wooden stick for about 10 minutes, until the caustic soda dissolves completely in the water. The bucket should then be covered and allowed to stand. Care should be taken at this stage, since caustic soda generates a lot of heat when it is added to water. The bucket should be kept away from the reach of children. The solution should be allowed to cool to room temperature.

In another vessel, maida, washing soda and the brightener should be mixed with groundnut oil. The mixture should be stirred well for 10 minutes.

The second solution should be poured into the bucket containing the first solution. The contents of the bucket should be stirred for 10 to 15 minutes. A tray measuring 40 cm by 30cm by 4 cm should be taken and a polythene sheet should be spread on it. The mixture should be poured on the tray to uniform thickness. The tray should be kept in the sun for a day or two, so that the mixture solidifies. Soap can thus be made in less than half the market price.

(Source : Dr K Srinivasan, NSS Officer, Anna University, Madras)

9. Safety Measures in a Chlorine Plant

Cylinders should be stored in an upright position. Full and empty cylinders should not be stored together. The storage area should be separate from places where compressed gas containers and other inflammable materials are stored. Also, care should be taken to keep the storage area far away from elevators, gangways or ventilation systems, because in the event of chlorine leak, dangerous concentrations of chlorine may spread rapidly.

While transporting chlorine cylinders, they must be carefully checked, clamped or otherwise suitably supported to prevent shifting and rolling. They should not be permitted to drop and no object should be allowed to strike them with force. They should not project beyond the sides or ends of the vehicles in which they are transported. Prior to filling the cylinder, each cylinder should be completely emptied, thoroughly cleaned and dried. Another fool-proof test to rule out surface defects, corrosion and the presence of foreign matter must be carried out.

Only cylinders which have undergone a hydraulic test should be used for filling chlorine gas.

Special care must be taken not to fill the cylinders with excess chlorine gas or liquid chlorine.

People who have asthma, certain types of bronchitis, other chronic lung conditions and any other kind of respiratory problems should not be employed in a chlorine plant.

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The employees should be cautioned to prevent leaks, and avoid inhalation of gas and direct contact with the liquid. They should be told to report to the authorities immediately in the case of equipment failure. All workers must be instructed and trained to adopt preventive measures, in case of an emergency. All employees should be made aware of first-aid equipment such as emergency showers, eye-baths, fire fighting equipment, fire alarms, the use of personal protector equipment and the like and their location in the plant. They should be trained to use them in case of an emergency.

10. Parts of a Computer

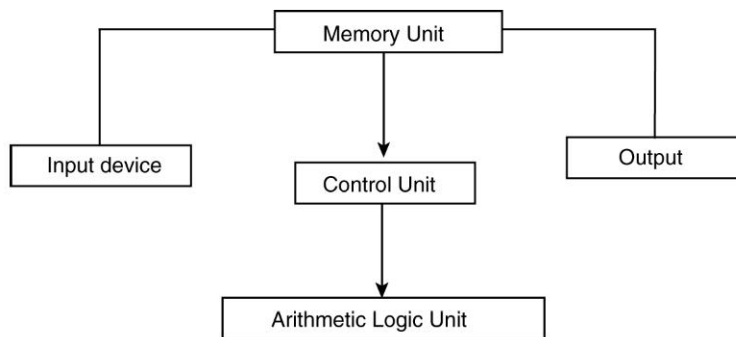
Definition of a Computer

A computer is an electronic device capable of executing instructions, based on algorithms stored in its memory, to process data fed into it and produce the required results faster than human beings.

Parts of a Computer

Computer hardware

It refers to the physical parts of the computer such as electronic circuits, keyboard, bolts and nuts that go to make the computer.



Hardware components are Input, Output, CPU (Central Processing Unit) and Memory.

Input Device

It is used to feed data and programme into the system for execution.

E.g. : Keyboard, Mouse, Magnetic Ink Character Reader (MICR), Barcode Reader.

Output Device

It is used to display the results from the memory to the user.

E.g. : Monitor or Visual Display Unit (VDU) Pointer, Plotter.

Central Processing Unit (CPU)

It is the 'brain' of the computer that actually understands and executes all the instructions. The CPU comprises of two distinct parts, namely the Arithmetic Logic Unit (ALU) and the Control Unit.

In Microcomputers, like the Personal Computer (PC), the ALU and the Control Unit are together and this unit is called a Microprocessor.

Control unit

It is the overall supervisor of the system.

Arithmetic Logic Unit (ALU)

It performs all the arithmetic and logical operations.

Keyboard

General Purpose: The keyboard is used when text is to be entered. It can also be used for drawing pictures.

There are two main styles of computer keyboards

- (i) Standard with usually 83–84 keys, and
- (ii) Enhanced with 100 keys or more,

The enhanced keyboards are more popular. They have some extra set of keys.

1. **Typewriter Keys** These are the normal keys on the keyboard and include letters, numbers and punctuation symbols.
2. **Function Keys** These keys are labelled as F1 to F12. They carry out different functions depending on the software we use.
3. **Cursor Control Keys** These keys are marked \leftarrow , \rightarrow , \uparrow , \downarrow and are called the Left, Right, Up and Down arrow keys respectively. The cursor keys are used to move the cursor left, right, up or down around the screen, one line or one character at a time.

There are four other control keys, just next to the arrow keys. These keys are labelled as Home, End, Pg Up and Pg Down.

Pg Up (Page Up) key is usually used to move to the previous screen or page of the document. Similarly, Pg Dn (Page Down) key is used to move to the next screen or page.

Home key usually takes the cursor to the top of the document or the beginning of the line. End key takes it to the end of the document or the end of the line.

4. **Numeric Key Pad** On the right hand side of the key board is the numeric key pad, containing calculator like keys. Some of the these keys have double functions.

The switch-over between the two functions of a key is controlled by the key marked NUM LOCK. When NUM LOCK is on (indicated by the green light beside the word NUM LOCK, on the top of the key board), these keys function as numeric keys and when it is off, they function as cursor control keys.

5. **Caps Lock Key** Normally, when an alphabet is typed, it is shown in the lowercase. When caps lock is pressed once, any letter we type will appear in uppercase (capital). The effect can be reversed by pressing the caps lock again.
6. **Shift Key** Holding down shift key and then pressing a letter key creates an uppercase letter. However, if the caps lock is ON, then this effect is reversed.
7. **Ctrl and Alt Keys** These keys are often used in combination with other keys, to produce special actions. For example, pressing Ctrl and C simultaneously aborts the current task or command being executed and returns to DOS prompt. By pressing Ctrl, Alt and Del keys simultaneously the machine is automatically restarted.
8. **Enter/Return Key** The Enter Key is used for two main purposes. It can alert our PC that we have finished giving the instruction, so that it processes or executes the instruction. When using a word processing programme, pressing enter begins a new paragraph or a new line. Enter key is also referred to as Return key.
9. **Mouse** The mouse is an input device that you move on a flat surface (usually a mouse pad). When you move the mouse, a pointer moves on the screen. This pointer, called the Mouse Pointer, is used to point things on the screen.

The mouse has two or three buttons on the top. The left button is most often used.

Read Only Memory (ROM)

This is stored in a chip and is permanently in the computer. The contents of this memory are not affected by switching on or off the power supply. The ROM contains basic programmes such as keyboard interpretation, etc.

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Random Access Memory (RAM)

This is the temporary storage of information. Required programmes and data are loaded into the RAM and the computer can have access to any part of the memory to store and retrieve information. This gets deleted every time the computer is switched off.

11. The Uses of a Computer

The computer is a tool containing an intricate network of electronic circuits that operate switches. It is analog or digital. The computer system is made up of what we call hardware and software. The hardware is the machine and the software refers to the programme or packages that help operate the hardware.

Its function and characteristics

The computer receives, processes, gives out, stores and retrieves information. Its speed and accuracy ensure almost instantaneous solutions to complicated arithmetic calculations.

Its potential and role

The computer has begun to affect and mould our lives, job behaviour and even our thinking. Developments in hardware systems and software packages are of innumerable tasks. In business, the computer does secretarial work, prepares and maintains payrolls, provides inventories of immediate reference, etc. Apart from performing these everyday tasks, it handles successfully budgeting, planning, controlling research and development activities, Cheques clearance and collection in banks, inventory control and sales in departmental stores and super markets, reservations in air and land transport systems, movement schedules for cargo flights, trains and operating instruments, printing methods, operation of production lines and robots in factories, filling containers in food plants, cutting patterns in clothing factories, sealing bottles in pharmaceutical companies are now computer controlled.

The computer plays a vital role in government agencies, too. Records of all sorts related to census, payroll and taxation are maintained by the computer. The armed forces are totally dependent on the computer for training personnel and for development of weapons and complex defence systems. Law enforcement agencies are better equipped than before. The computer helps easy and quick identification of criminals by matching fingerprints and identifying voice patterns. Weather forecasts are computer dependent.

The computer helps shape and improve activities in the fields of science, medicine and education. Geologists are able to spot new deposits of energy sources. Oceanographers collect and process data about marine life. Botanists can analyse composition of plants. The computer plays a pivotal role in space technology and space exploration. In addition to maintaining accounts and performing administrative duties in health care and helping nurses to attend to individual patients with its stored latest medical information and personal patient histories, it helps save life. It also holds vital information about life saving instances and solutions from several countries and helps in comparative studies and decision-making. With its computer-assisted instruction, the computer has realised the one time dream of teacher's attention and help to learn individually. Computer games and computer animation have brought variety to entertainment.

Conclusion

It is obvious that benefits have accrued to man. But have there been only benefits? The computer can become a threat to man. It can endanger his survival and privacy. It also offers excellent encouragement of unethical or criminal activities. It can worsen the unemployment problem, as employers prefer the computer and the compute-controlled robots to humans for obvious reasons. Whatever the dangers may be, the benefits outweigh the dangers. Thus, the computer has been responsible for the improvement of efficiency in the way organisations—private and public—function. It has improved productivity and the quality of products and services we receive from different organisations.

12. The Uses of Internet

- (a) Introduction
- (b) What is internet?
- (c) Ways of storing information
- (d) Uses of internet
- (e) Major uses of internet in
 - (i) Business
 - (ii) Industry (Advertisement)
 - (iii) Education and Medicine
- (f) Conclusion

Introduction

Computers have become a household name and are being used in almost all walks of life. When two major computers are connected together, they form a network, through which we can communicate and share information with each other.

The internet is a network of computer networks, switching around (connected together) the world. Over 23 million people use the internet to find information, to conduct business, to communicate with people around the world and to play games. Anyone connected to the internet can communicate with others and access information stored on any of the computers.

Information can be stored and shared on the internet in many ways. Some of them are:

1. E-Mail:
We can send mail around the world in minutes, correspond with friends, or join a mailing list discussion.
2. The World Wide Web:
We can point and click to move back, the vital pages of information and graphics.
3. File Transfer Protocol (FTP):
With it we download files, programmes and graphics from public archives.
4. Internet Relay Chat (IRC):
It helps us to chat with other users.
5. Telnet:
We can connect directly to other machines on the internet.
6. Gopher:
It is another service like WWW.

Uses of the Internet

Internet is a storehouse of information. There are several millions of pages of information available on the internet. One can find information on practically any topic that one can think of. Using the internet, one can read the information, store it in his disk and even take the printout. Copying information from another computer connected to the internet is called Downloading. Most web pages today have buttons, which we can click to download them. We can also download the information using file transfer protocol or FTP.

We can communicate with any of the millions of users of the internet using e-mail, which is electronic mail sent from one computer to another. Sending messages through e-mail is very similar to sending a letter through the postal department, except that it is incomparably faster. Sending a message to a friend in U.S. takes about the same time as sending it to a person on a computer next to you. It is also significantly cheaper. While an ISD call to the U.S. or any other foreign country may cost about Rs. 75 per minute, sending e-mail would cost about Re. 1 per minute.

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Using the internet, we can also take part in interactive chat sessions with other users anywhere in the world. On the internet, several chat sessions on different topics are always on. We can join any of them and talk to anyone else by participating in that chat session. While chatting all “Conversation” appears on the screen as a series of typed messages.

We can also join a news group discussion and learn a lot about any topic of our choice. News group is a public area where any user can leave a message. These messages will be available to every other user of the internet who in turn can add his reply. In this way, a single message soon develops into a full-fledged discussion.

The most important uses of internet are in the field of education and medicine. It acts as a world library even to the persons in the undeveloped areas.

Internet has no president or chief operating officer and is governed by a number of authorities. The ultimate authority of internet rests with internet society (ISOC) a voluntary membership organisation. The purpose of this organisation is to promote global interchange of information. Another authority is a group of invited volunteers called Internet Architecture Board (IAB). The IAB sets the standard and gives internet addresses. Internet Engineering Task Force (IETF) discusses the technical and operational problems on the internet.

One can perform many tasks, if one has access to the internet.

Some of these are:

- We can publish our research papers on internet, thus making them available to others.
- We can use it for teaching. For example, we can teach languages using WWW.
- We can use it for publicity and advertisement.
- We can refer to the pictures of an art gallery.
- We can use it for multimedia conferencing.
- We can have an electronic copy of classics such as ‘Alice in Wonderland’.
- We can have electronic copy of journals and magazines from the internet.
- We can meet people around the world, and be in touch with them.
- We can get free public domain programmes and also watch movies.
- We can search for specific information.

Internet is being used in various ways for providing information and knowledge. The internet is used for carrying out various types of business over the net. We can buy commodities from the large range of things.

The other major use of internet is advertising a product. The advertisement done in any other medium will be restricted to the region. On the other hand, it would be covering the entire globe that is connected to the net.

The information provided on the net includes almost all the subjects. It is an ocean of knowledge. The internet is not only the main business for the book worms or industrialists but also for the common man. It has large resources of entertainment. There are many websites that are dedicated to specific topics and events.

There are many websites that are meant for children. Students can get enough information. It is like obtaining nectar from the sieve of internet.

The major use of internet is the transfer of data, which can be virtually transferred to any corner of the world without being physically present.

E-mail is the most used mode of internet. More than 2 billion e-mails are transferred everyday over the net.

13. Uses of Robots

Robot is the form of programmed automation to carry out the programmed task repetitively and uncomplainingly. It is a computer controlled, one armed machine set up at the fixed place to perform several difficult tasks like machine loading, unloading, spot welding and spray painting, etc. Outside the factory, robot finds its application in banks, restaurants and even homes.

Apart from performing some hard tasks, robots are also engaged in dangerous environments. In constructing building, a robot is employed to undergo risks. In coal-mining it is employed for the drilling operation where there is a danger of the eruption of poisonous gases. In fire work factories, chemical factories and nuclear plants which are the danger prone zones, robots come to the rescue to perform the hazardous task of assembling, packing, etc. Robots are also used in the military operations like fire fighting. A robot is also sent for space research and undersea operations.

In the service industry, a robot finds its utmost use. It may be employed in the task of teaching. In a company, robots can be employed for cleaning, straightening the merchandise, restocking, noting the check out time of the labourers, etc. In the 24 hour fast food restaurants, a robot may be of help to make up the order of the different customers. In the bank, it can take care of the deposits and withdrawals. The routine task of adding, subtracting, counting money, entering customer's account status can be performed easily using a robot. In garbage collection and waste disposal operation, a human being can be replaced by a robot. In the place of a security guard, a robot can be employed that can sense and report to the head who is a human being. Household robots can perform dish washings, rug vacuuming, making beds, furniture dusting, food preparation, etc. Lawn garden work can be well maintained by a robot.

14. Role of Engineers

An engineer is a skilled person who uses his scientific knowledge to plan and construct machinery, electrical devices or roads and bridges. There is no field where the presence of engineers is disregarded. They are the backbone in the technological development of the nation. In turn they are responsible for the socio-economic development of the nation.

There are different branches of engineering like mechanical, electrical, civil, bio-medical, metallurgical, aviation, and computer. Because of the presence of an engineering scientist, development is possible in the particular branch. Engineering knowledge is not of recent origin. The inherent engineering knowledge of the ancient man has helped him to become civilised. Starting from the discovery of fire and arriving at the launching of satellites and rockets and proceeding towards further prosperity in every field is a simple marvel of engineering.

The advancement with regard to the construction of bridges over sea, tunnel construction under sea connecting two countries, digital communication in the field of electronics, cryogenic technology, in food preservation and in medicine, conquest of space, devising robots with absolute intelligence is the toil on the part of engineers.

In our country the due credit for the present development goes to the engineers. Before independence, engineers were employed to operate and service the then existing machines. After independence, the country started realising the need for designing and finding new technology to suit the needs of the growing population. So, our engineers started working on the imported technological knowledge and apply them using their unique intelligence as a result of which the country is called a developing country that is trying to become self-reliant.

Our engineers make the optimum utilisation of the human resources to improve the well-being of all the sections of people. The goal of engineers is to absorb the new technologies along with the available technology and thus to provide a framework for the future development of the nation.

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At the same time, it is a sad fact to mention that not all the efficient engineers are working for the welfare of the country. Many engineers, after they adequately qualify themselves, go and settle in foreign countries. This is inevitable because India cannot offer the same standard of living and other benefits, which are adequately provided by any other developed country. India lacks in providing sophisticated atmosphere for the research engineers to work. Above all, the engineers can easily get recognition for their research work in foreign countries rather than in our country.

Despite the above reasons for not making the effective use of all the engineers, our country does not stop from marching towards the integration of science and technology for the socio-economic development. This is possible with the help of the devoted engineers with research-oriented approach.

15. Energy Sources

Energy is necessary to carry out a work. Without energy no work can be done. Energy is required to retain and improve the quality of life. Energy offers vegetable and animal source of food to man, and it transports man from one place to another. The earliest source of such energy is man himself. His muscle power helps him to do useful work. Animals form the next source from which human beings have been extracting work since the dawn of civilisation. The early man started getting energy from fire whose sources were wood and plants. About 3000 B.C. people learned to make use of wind energy to drive ships and later they used the wind energy to run windmills.

During the later part of the eighteenth century, man started making use of commercial source of energy such as fossil and hydroelectric power. With coal, a marvel in transport took place. Steam engine and internal combustion engine made transportation comfortable. Due to hydroelectric power the economic well-being of people was assured. The end of Second World War brought new source of energy namely nuclear energy. Nuclear energy enables to obtain greater amount of energy from a small amount of fuel, i.e. uranium 235.

The different energy sources can be grouped under two categories namely celestial source and the capital source. The celestial source is otherwise called renewable source. It is the energy obtained from outer space of earth. This includes wind energy, solar energy, geothermal energy and tidal energy. The capital energy is the source of energy that exists on the earth or in the earth already. This includes forest wood, fossil fuel, oil and atomic energy.

The industrialisation of a developing country is accompanied by the large consumption of the commercial energy like coal and oil. Such developing countries either produce oil on their own or they depend upon the foreign countries. There are twenty-eight oil producing countries indulging in exporting the same. At the same time there are 92 import dependent countries. People in the developed countries have shifted themselves to kerosene from firewood by which the demand for oil has increased by 15–20%. As the population is increasing approximately at the rate of 2% and the energy consumption rate is increasing by 5% the oil exporting countries may have to use the exportable surplus for their own use. Moreover, the oil reserve is expected to last for another thirty-five years. The thermal power stations use coal as the energy source to produce electricity. The statistics regarding coal reserves shows that coal will last for another 90 years. The indiscriminate use of coal and oil will lead to environmental problems like air and water pollution. The wastes from the thermal power plant endanger the plant and animal life. The other non-renewable energy source namely, the nuclear wastes pose the greatest threat by radiation, which will have drastic effect on human beings for several years.

16. Uses And Misuses of Nuclear Energy (or) Nuclear Energy for Constructive Purposes

Nuclear energy is the alternative source of energy, rather it is a boon given to man in a situation where the non-renewable sources like mineral oil and coal are in the depleting stage. Moreover, burning coal for power generation leads to environmental hazards like acid rain. Generation of hydroelectric power causes destruction to the vast area of the forest, for they are being submerged, in which case alternative source of energy is indispensable.

The nuclear energy in the form of heat is released from the nucleus of the atom (U-235) by fission or fusion. This heat powers the steam driven electric generators in a nuclear reactor. The generator produces electricity. There are more than 350 nuclear reactors in the world. As far as India is concerned three percent of power is derived from nuclear power units. The power derived from the fusion of nucleus is useful to operate industries and the power provides electricity to the whole town. With the help of irradiation food preservation is possible. Nuclear irradiation helps in killing insects, pests, reduces the level of bacterial contamination, delays the ripening and thereby lengthen the shelf life of fruits. In the field of medicine, the radiation offers cure to certain diseases.

At the same time this radiation has its disastrous effect. The penetrative radiation in a small quantity attacks the living tissues and it can alter the genes in body cells, which will in turn result in genetic diseases and congenital birth malformation. The nuclear wastes are also radioactive and their effects remain for hundreds and thousands of years. Their disposal creates environmental problems. At present they are stored in sealed containers and dropped into deep oceans. As this ensures environmental pollution opposition is strong with regard to this practice.

Nuclear energy proves its destructiveness in the form of nuclear bombs. This has the power to destroy the whole town or city. Example of such destruction was drastically experienced by the people of Hiroshima and Nagasaki during the Second World War. The bomb used by America was of 20 kiloton power. Such war threats with the help of nuclear energy will pose a great menace to the peace of the world. Now, the UNO has advised every nation not to indulge in manufacturing nuclear weapons. America and Russia, the veto powers have signed a pact regarding non-proliferation of nuclear weapons for the good of the world. In response to the call of the UNO, the major countries like Russia, the US, France and Britain have suspended the nuclear tests for the time being.

It is time that we should realise that the nuclear energy is a blessing-cum-boon exposed to the world by the benign mother nature, and we have to use this resource profitably and for the good of the humanity. As Russel opined, wars are decided and declared by political dictators of nation. In other words, common people have no part in the initiation of war. So it is up to the heads of the states of different nations to use the nuclear energy for the welfare of the humanity.

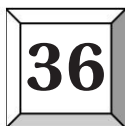
Do it Yourself

1. Write a paragraph of about 200 words comparing life in a village with life in a city. (M.Q.P.)
2. Describe in two paragraphs the advantages and disadvantages of nuclear power as an alternative source of energy. (200 words) (Apr./May 2003)
3. Write two paragraphs comparing human beings with robots. (Apr./May 2003)
4. Write a paragraph comparing human brain and the computer and another paragraph comparing calculators and computers in about 100 words each. (Nov./Dec. 2002)
5. Write two paragraphs describing the advantage of using solar power and wind power as alternative sources of energy in India. (200 words) (Nov./Dec. 2002)
6. Write two paragraphs comparing log tables with calculators.
7. Write two paragraphs comparing the input and output devices of a computer.
8. Describe in about 170–200 words the utility, function with advantages and disadvantages of a washing machine. (Nov./Dec. 2003)
9. Imagine yourself to be in the year 2050 and you are in your early 70's. The fuel position is very bad. Describe how life was fifty years ago when fuel was easily available. Write this in about 170–200 words. (Nov./Dec.2003)
10. Describe a roof water tank in about 170–200 words highlighting its characteristicsits purpose, function, utility and also its advantages and disadvantages. (Apr./May 2004)
11. With more and more vehicles on the roads it is becoming very risky for all vehicles that ply on the roads safely. Write in about 170–200 words, the measures that must be adopted in order to bring safety on the roads. (Apr./May 2004)

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13. Write a paragraph of about 200 words explaining the wisdom of investing money in articles of gold. (Jan. 2005)
14. Write a paragraph of about 200 words highlighting the six most serious problems that are caused by the increased growth in traffic due to vehicles and also offering suitable solutions to those problems. (Jan. 2005)
15. "Computer, its Parts and Uses" – Write two paragraphs on this topic of 200 words each. (M.Q.P)
16. Write a paragraph of 200 words stating the ways in which our environment can be preserved. (Apr./May 2003)
17. In this electronic era, people still continue to read books and magazines. Write a paragraph of 200 words describing why people still prefer to read books. (Apr./May 2003)
18. Write a passage in about 200 words on the working of a mechanism (e.g., dry cell batteries). Underline "cause and effect" and "purpose" expressions. (Nov./Dec. 2003).
19. Write a passage in about 200 words on an industrial process (e.g., clay tile making). Underline the "passive constructions" and the "discourse markers". (Nov./Dec. 2003).
20. Write two paragraphs comparing the newspaper and the television as media of mass communication. Each of the paragraphs should not exceed 200 words. (Apr./May 2004)
21. Write two paragraphs, one describing the benefits of technology the other describing the drawbacks of technology. Each paragraph should not exceed 200 words. (Apr./May 2004)
(or)
Discuss whether technology is a 'boon' or a 'bane', substantiating your contention in a paragraph of about 200 words. (Nov./Dec. 2004)
22. Write a paragraph of 200 words explaining the role of English as an international language. (Nov./Dec. 2004)

CHAPTER



SI Units (Système International)

Here are some important rules for writing SI units.

1. SI units must always be written in upright Roman letters.
(roman : in ordinary upright form – not in italics)
2. Plural – s is not added to the units.
e.g. 6 metres should be abbreviated to 6 m and not 6 ms because 6 ms stands for 6 milliseconds.
3. A full stop is not used after the symbol.
4. The multiplication sign is not used between units; a space is left between them.
5. Prefixes like m (milli) or c (centi) must be written close to the units in small letters.
e.g. cm (centimetre)
mN (millinewton)
6. The solidus (/) should not be used twice in the derived unit.
e.g. metre per second per second is written as follows:
m/s² NOT m/s/s

The coefficient of linear expansion is

$$12 \times 10^{-6} / ^\circ\text{C} \text{ or}$$

$$12 \times 10^{-6} / \text{K}$$

SI BASE UNITS

S. No.	Quantity	Name	Symbol
1.	Length	metre	m
2.	Mass	kilogram	kg
3.	Time	second	s
4.	Electric Current	ampere	A
5.	Thermodynamic temperature	kelvin	K
6.	Amount of substance	mole	mol
7.	Luminous Intensity	candela	cd

SI DERIVED UNITS

S. No.	Quantity	Name	Symbol
1.	Area	square metre	m ²
2.	Volume	cubic metre	m ³
3.	Speed/Velocity	metre per second	m/s
4.	Acceleration	metre per second squared	m/s ²

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5.	Wave Number	reciprocal metre	m^{-1}
6.	Density/Mass Density	kilogram per cubic metre	kg/m^3
7.	Specific Volume	cubic metre per kilogram	m^3/kg
8.	Current Density	ampere per square metre	A/m^2
9.	Magnetic Field Strength	ampere per metre	A/m
10.	Concentration	mole per cubic metre	mol/m^3
11.	Luminance	candela per square metre	cd/m^2
12.	Frequency	hertz	Hz
13.	Force	newton	N
14.	Pressure/Stress	Pascal	Pa
15.	Energy/Work/Quantity of Heat	joule	J
16.	Power/Radiant Flux	watt	W
17.	Electric Charge/Quantity of Electricity	coulomb	C
18.	Electric Potential/Potential Difference/ Electromotive Force	volt	V
19.	Electric Resistance	ohm	Ω
20.	Celsius Temperature	degree Celsius	$^{\circ}\text{C}$
21.	Illuminance	lux	lx

EXERCISE

Correct the mistakes in the following representations of SI units.

- 1 m : 100 cm
- Acceleration : 9.8 m/s/s
- Freezing point of water : 273° K
- Radius of the earth : 6378 kms.
- 1 w : 1 N.m/s

CHAPTER



Numerical Expressions

Examples

- | | | |
|-----------------------------|---|---|
| 1. 3000 rev/min | = | Three thousand revolutions per minute |
| 2. 150 rpm | = | One hundred and fifty revolutions per minute |
| 3. 300 rpm | = | Three hundred revolutions per minute |
| 4. 300 ppm | = | Three hundred parts per million |
| 5. 6.28 m/s | = | Six point two eight metres per second |
| 6. 40% w/v | = | Forty percentage weight per volume |
| 7. 530 kHz | = | Five hundred and thirty kiloHertz |
| 8. 1500 kg/ cm ³ | = | One thousand five hundred kilograms per centimetre cube |
| 9. 273 K | = | Two hundred and seventy three Kelvin |
| 10. 500 Btu/ft ³ | = | Five hundred British thermal units per cubic foot |
| 11. 15psi | = | Fifteen pounds per square inch |
| 12. 40 ppm | = | Forty parts per million |
| 13. 40% v/v | = | Forty percentage volume per volume |

Do it Yourself

Expand the following.

- | | |
|----------------------------|-------------------|
| 1. 150 rpm | (Apr. 97, M.Q.P.) |
| 2. 40 ppm | (M.Q.P.) |
| 3. 273 K | (M.Q. P.) |
| 4. 500 Btu/ft ³ | (M.Q.P.) |
| 5. 3000 rpm | (M.Q. P.) |
| 6. 300 ppm | (Nov.'97) |
| 7. 6.28 m/s | (M.Q.P.) |
| 8. 530 kHz | (Apr. 97) |
| 9. 15 psi | (Nov.'97) |

Note: When numerical expression is placed in the position of an adjective before the noun, the singular form is used.

Additional Examples

- | | | |
|---|---|--------------------------|
| 1. The pipe is three feet long. | = | a three-foot long pipe |
| 2. The curing cycle lasts 60 minutes | = | a 60-minute curing cycle |
| 3. A flask with a capacity of 10 litres | = | a 10- litre flask |
| 4. A journey of 20 miles | = | a 20-mile journey |

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5. Blocks of 2 ½ tons	=	2 ½-ton blocks
6. A base of 13 acres	=	a 13-acre base
7. An incline of 52 degrees	=	a 52-degree incline
8. A squad of 1000 men	=	a 1000-man squad
9. A civilization which is 2000 years old	=	a 2000-year old civilisation
10. A project of 10 years	=	a 10-year project
11. A match lasting five days	=	a five-day match
12. At intervals of 10 minutes	=	at 10-minute intervals
13. A DC supply of 240 volts	=	a 240-volt DC supply
14. A lamp of a power of 60 watts	=	a 60-watt lamp
15. An investment of Rs.3,50,000	=	a 3,50,000-rupee investment
16. A research grant of Rs.2 lakhs	=	a 2-lakh rupee research grant
17. Pipes having an id (internal diameter) of three inches	=	three-inch id pipes

EXERCISE**1. Rewrite the following expressions.**

(Apr./May 2003)

- | | |
|---|--|
| (a) a tank with a capacity of 1000 litres | (b) a walk of five miles |
| (c) a project grant of Rs.60 lakhs | (d) a symposium lasting for three days |

2. Rewrite the given expressions

(Apr./May 2004)

- | | |
|-------------------------------|---|
| (a) a walk of five kilometers | (b) a seminar lasting for three days |
| (c) a DC supply of 240 volts | (d) a tank with a capacity of 2000 litres |

3. Rewrite the following expressions

(Nov./Dec. 2004)

- | | |
|--|-------------------------------|
| (a) a journey of 20 miles | (b) a match lasting five days |
| (c) a tank with a capacity of 500 litres | (d) a DC supply of 240 volts |

CHAPTER



Expressing Purpose

Formula to + verb
 in order to + V
 so as to + V

The purpose of _____ is to + V + _____

Example

Barometer : measure atmospheric pressure

1. A barometer is used to measure atmospheric pressure.
2. The purpose of a barometer is to measure atmospheric pressure.

Note: test, experiment = The aim of

Additional Examples

1. We generally consult an almanac for the purpose of getting astronomical data.
2. The aim of this study is to estimate the drop-out rate in the local secondary schools.
3. The purpose of a safety valve is to release excess pressure.
4. He migrated to Australia with a view to improving his career prospects.
5. We use a camera for taking photographs.
6. The words are printed in bold letters with a view to making them prominent.
7. A writer makes use of graphs and charts with a view to making numerical data interesting and easy to understand.
8. The purpose of tempering steel is to make it harder and less brittle.

The following are the commonest ways of expressing the purpose for which we do something.

1. The purpose of the safety valve is to allow excess pressure to escape.
2. The aim of the safety valve is to allow excess pressure to escape.
3. The object of the safety valve is to allow excess pressure to escape.
4. A safety valve is provided to allow excess pressure to escape.
5. A safety valve is provided so as to allow excess pressure to escape.
6. A safety valve is provided in order to allow excess pressure to escape.
7. A safety valve is provided for the purpose of allowing excess pressure to escape.
8. A safety valve is provided with the object of allowing excess pressure to escape.
9. A safety valve is provided with the aim of allowing excess pressure to escape.
10. A safety valve is provided with a view to allowing excess pressure to escape.

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Here is a structure which is used to indicate purpose

1. The steam is superheated so that it is fairly dry.
2. The steam is superheated in order that it may be fairly dry.
3. The steam is superheated so that it can be fairly dry.
4. The steam is superheated in order that it should be fairly dry.

EXERCISE I

- | | | |
|-------------------------------|---|--|
| 1. painting iron parts | : | protects them from rust |
| 2. thermostat | : | maintains temperature at a constant level |
| 3. test | : | predicts the rise in pressure |
| 4. an aerial | : | receives broadcast signals |
| 5. a feasibility report | : | makes recommendations on the practicality of a project |
| 6. sending telegrams | : | ensures that the message reaches the address quickly |
| 7. an experiment | : | demonstrates a principle |
| 8. constructing a bypass road | : | reduces traffic congestion in a city |
| 9. a sheet of carbon paper | : | makes copies while one types |
| 10. a litmus test | : | identifies acids and alkalies |
| 11. a flowchart | : | represents a process as a series of steps |

EXERCISE II

- | | | |
|------------------------------|---|--|
| 1. dictionary | : | meaning of words |
| 2. book | : | present the historical development of English |
| 3. catalyst | : | speed up a chemical process |
| 4. (took up) a part-time job | : | (supplement) his income |
| 5. shorthand | : | (write) rapidly while listening to a speaker |
| 6. message written in code | : | (ensure) secrecy |
| 7. speaker | : | slide projector: (present) visual material with speech |
| 8. proof reading | : | correct mistakes in the matter to be printed |

EXERCISE III

1. **Using the hints given below, make sentences that express the purpose.**

Example

(M.Q.P)

Experiment : demonstrate a principle

The purpose of an experiment is to demonstrate a principle.

An experiment is used to demonstrate a principle.

- | | | |
|-----------------|---|--|
| (a) E-mail | : | ensure that the message reaches the addressee almost at once |
| (b) Aerial | : | receive broadcast signals |
| (c) Thermometer | : | measure the body temperature |
| (d) Hammer | : | fix any object to the base using a nail |

2. The sentences given below express the idea of purpose. Use the hints given below each sentence and construct another sentence in the same pattern. (Apr./May 2003)

(a) We use cameras for taking photographs.

_____ robots _____ (perform) heavy and dangerous jobs.

(b) The purpose of a safety valve is to release excess pressure.

_____ catalyst _____ speed up a chemical process.

3. Make sentences expressing purpose using the hints given below. (Apr./May 2004)

Example aerial : receive broadcast signals

Answer: An aerial is used to receive broadcast signals.

(or)

An aerial is used for receiving broadcast signals.

An aerial is used for receiving broadcast signals.

(a) Carbon paper : make duplicate copies

(b) Barometer : measure atmospheric pressure

EXERCISE IV

Answer the questions using the pattern 'to/in order to/so' as to verb.

1. Why did he study engineering? (Oct. 2000)
2. Why do people study medicine? (Oct. 2001)
3. Why is drinking water filtered? (Nov. '97)
4. Why are dams built? (Nov. '98)
5. He applied the brake for the purpose of stopping the car. (Apr. 2000)
6. The steam is superheated so that it is fairly dry. (Apr. 2000)
7. Why should you wear goggles in the workshop?
8. Why is a safety valve provided?

EXERCISE V

Join each using 'to/in order to/so as to'.

1. He fitted a silencer.
He wanted to reduce the noise of the exhaust. (Oct. 2000)
2. He applied the brake for the purpose of stopping the car. (Apr. 2000)
3. The steam is superheated so that it is fairly dry. (Apr. 2000)
4. He wanted to drive faster. He depressed the accelerator pedal.
5. He wanted to change the gear. He pressed the clutch pedal and moved the gear lever.
6. I wanted to stop the car. I operated the brake.
7. He wanted to check the oil in the engine. He used the dipstick.
8. She wants to qualify for a better position. She is studying advanced statistics.
9. He wanted to start the engine. He pressed the switch.

EXERCISE VI

Join each pair of sentences using appropriate clause markers showing purpose.

1. Astronomers wanted to discover more about the stars.
They improved telescopes. (Apr. '99)
2. It was proposed to reduce the traffic congestion on the roads.
The Mass Rapid Transit System (MRTS) Project was envisaged. (Apr. '99)
3. The rain water has to be conserved. A dam has to be built. (Nov. '99)
4. These days students want to become computer professionals. They study very hard. (Apr. 2000)
5. The aircraft has been skilfully designed. It can fly at a speed of 3000 kmph. (Apr. 2001)
6. The State Government took immediate measures. The Government wanted to control the growth of population. (Apr. 2001)

EXERCISE VII

Rewrite the sentences using 'so that'.

1. Fire extinguishers are painted red so as to make people see them clearly. (Apr. 1997)
2. Bearings are used so as to reduce friction. (Nov. '98)
3. Complete the sentence using 'so that'
Helmets must be worn _____ (Apr. '99)

EXERCISE VIII

Complete the sentences using the pattern 'used for verb +ing'.

1. A rheostat is used _____ (Oct. 2001)
2. A radiator is used _____ (Oct. 2001)
3. A barometer is used _____ (Nov. '99)
4. An ammeter is used _____
5. A fax machine is used _____
6. A generator is used _____
7. A computer is used _____
8. A hammer is used _____
9. A seismograph is used _____
10. A laboratory is used _____

EXERCISE IX

Rewrite the sentences using 'for the purpose of'.

1. The mechanic fitted a diesel engine in his car. He wanted to reduce the running cost. (Oct. 2001)
2. The government introduced a new scheme.
It aimed at improving the software industry. (Oct. 2001)

EXERCISE X

Begin with 'The purpose' or Rewrite using 'The purpose of'

1. Bearings are lubricated to reduce the friction. (M.Q.P)
2. A safety valve is provided to allow excess pressure to escape. (Apr. 2000)

3. Water tubes are fitted in a boiler in order to absorb some of the heat.
 4. The metal is annealed in order to relieve some of the stresses.
 5. The steam is superheated to ensure that it is fairly dry.
 6. The metal is worked cold so as to obtain a more accurate finish.
 7. Firebricks are used to minimise heat losses in the boiler.
 8. A gauge is incorporated to measure the pressure in the boiler.
 9. Pure feed-water is used in order to prevent the formation of deposits.
 10. The test is made for the purpose of calculating the total temperature rise.
 11. Forced circulation is made for the purpose of preventing the formation of steam pockets.
 12. A large heating surface is provided for the purpose of increasing the amount of steam which is produced.
- (These sentences are taken from A.J. Herbert's *The Structure of Technical English*, page 41)

CHAPTER



Purpose and Means

Method

1. to + verb
2. in order to + verb
3. so as to + verb
4. so that + clause / in order that
5. in case or lest
6. for + (pro)noun + to + verb

Examples

I. Fill in the blanks with words expressing purpose and means.

1. I went to the university _____ my mark sheets.
2. I opened the window _____ cool breeze enter the room.
3. Circulation is forced _____ prevent the formation of steam pockets..
4. The test is made _____ calculate the total pressure rise.

Answers

1. I went to the University to get my mark sheets.
2. I opened the window in order to allow cool breeze enter the room.
3. Circulation is forced in order to prevent the formation of steam pockets.
4. The test is made in order to calculate the total rise in temperature.

II. Look at these three different ways of expressing purpose and means.

1. Cultural exchanges between countries are held *in order to communicate*, to exchange information and help towards better understanding.
2. Cultural exchanges between countries are held *in order that people may* learn about each other's way of life.
3. People of different nations learn about each other's ways of life *through* cultural exchanges.

EXERCISE I

Make similar sentences from the list below

Purpose

1. fostering ties of friendship
2. promotion of goodwill
3. understanding

Means

- cultural festivals
international exhibitions
art

Additional Examples

1. The metal is annealed *in order to relieve* some of the stresses.
2. The bearings are lubricated *in order to reduce* friction.
3. The steam is superheated *in order to ensure* that it is fairly dry.
4. Fire bricks are used *in order to minimise* heat losses in the boiler.
5. A gauge is incorporated *in order to measure* the pressure in a boiler.
6. Pure feed water is used *in order to prevent* the formation of deposits.
7. A large surface is heated *in order to increase* the amount of steam which is produced.
8. He went to Cambridge *to study* (in order to study) English.
9. He pressed the switch *to start* (in order to start) the engine.
10. She is studying advanced statistics *in order to qualify* for a better position.
11. He used the dipstick *so as to check* the oil in the engine.
12. He wrote the instructions in several languages *so that* people from different countries could understand them.
13. A high rate of evaporation in the boiler is essential *in order to generate* large quantities of steam.
14. He joined the library *in order to have* plenty of books to read.
15. The steam is superheated so that / *in order that* it is fairly dry.
16. Water-tubes are fitted in a boiler *in order to absorb* some of the heat.
17. The metal is worked cold *in order to obtain* a more accurate finish.
18. The test is conducted *in order to calculate* the total temperature rise.
19. I went to the University *to meet* the Registrar.
20. He worked hard *in order to keep* his family in comfort.
21. A thermometer is used *in order to determine* temperature.

EXERCISE II

1. **Join the following using to / in order to / so as to.**
 - (a) After-burners are provided in the jet-pipe.
 - (b) After-burners increase the velocity of the aircraft.
2.
 - (a) Raja fitted a diesel engine in his car.
 - (b) Raja wanted to reduce the running cost.
3.
 - (a) He wanted to stop the car.
 - (b) He operated the brake.

CHAPTER



Noun Forms

Examples

Form nouns from the following words adding suitable endings.

- | | | |
|----|----------------|--------------|
| 1. | satisfy | satisfaction |
| 2. | retain | retention |
| 3. | replace | replacement |
| 4. | repent | repentance |

Additional Examples

- | | | |
|-----|--------------------|---------------|
| 1. | verify | verification |
| 2. | derive | derivation |
| 3. | weaken | weakness |
| 4. | dispose | disposal |
| 5. | observe | observation |
| 6. | deplete | depletion |
| 7. | require | requirement |
| 8. | stabilise | stabilisation |
| 9. | generate | generation |
| 10. | conduct | conduction |
| 11. | bleed | blood |
| 12. | feed | food |
| 13. | communicate | communication |
| 14. | corrode | corrosion |
| 15. | continue | continuation |
| 16. | compensate | compensation |
| 17. | contribute | contribution |
| 18. | difficult | difficulty |
| 19. | defect | defect |
| 20. | define | definition |
| 21. | decide | decision |
| 22. | displace | displacement |
| 23. | develop | development |

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24.	dispute	dispute
25.	economise	economy
26.	explode	explosion
27.	electrify	electricity, electrification
28.	employ	employment
29.	enter	entrance
30.	pronounce	pronunciation
31.	renounce	renunciation
32.	govern	government
33.	grow	growth
34.	imagine	imagination
35.	impress	impression
36.	inspect	inspection
37.	insulate	insulation
38.	introduce	introduction
39.	involve	involvement
40.	irrigate	irrigation
41.	lubricate	lubrication
42.	magnetise	magnet
43.	manage	management
44.	matter	matter
45.	move	movement, motion
46.	necessitate	necessity
47.	occupy	occupation
48.	produce	production
49.	penetrate	penetration
50.	prefer	preference
51.	preserve	preservation
52.	prove	proof
53.	purify	purification
54.	please	pleasure
55.	perform	performance
56.	prevent	prevention
57.	recover	recovery
58.	reserve	reservation
59.	resist	resistance
60.	remove	removal
61.	rely	reliance
62.	repel	repulsion

63.	refer	reference
64.	suit	suitability
65.	solve	solution
66.	strengthen	strength
67.	see	sight
68.	submit	submission
69.	absent	absence
70.	permit	permission
71.	specialise	specialisation
72.	transform	transformation
73.	transmit	transmission
74.	vary	variation
75.	vacate	vacancy
76.	withdraw	withdrawal
77.	procure	procurement
78.	furnish	furniture
79.	refuse	refusal
80.	expend	expense
81.	solidify	solid

CHAPTER



Word Formation

The table below lists the different ways in which natives are named.

S. No	Country	Language(s)	Native of the country
1.	England	English	an English person
2.	Japan	Japanese	a Japanese person
3.	Pakistan	Urdu	a Pakistani
4.	Australia	English	an Australian
5.	Sweden	Swedish	a Swede
6.	Switzerland	German	a Swiss
7.	Israel	Hebrew, Arabic	an Israelite
8.	Holland	Dutch	a Dutch person
9.	Poland	Polish	a Pole
10.	India	Hindi	an Indian

Prefixes

1. con has the meaning of 'with' as in 'conjunction'.
2. amphi has the meaning of 'both' as in 'amphibian'.
3. sub has the meaning of 'under' as in 'submerge'.
4. ad has the meaning of 'intensification' as in 'adduce'.

Suffixes which make nouns from verbs.

-ence, -ment, and -ing

Some examples of words with each of the prefixes and suffixes mentioned above.

- | | |
|-----------------|---|
| 1. con | conciliation, concord, concur |
| 2. amphi | amphibious |
| 3. sub | subcommittee, substandard, subCollector, subway |
| 4. ad | adventure, advantage |
| 5. -ence | confidence, dependence |
| 6. -ment | government, judgement, development, punishment |
| 7. -ing | reading, writing |

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Different forms of a word

S.No	Noun	Adjective	Person concerned
1.	environment	environmental	environmentalist
2.	natures	natural	naturalist
3.	ecology	ecological	ecologist
4.	conservation	conservative	conservationist
5.	genetics	genetic	geneticist

The prefixes infra- and sub- are added to words to mean 'below, lower down'; the prefixes supra, ultra and hyper – are intensifying prefixes, which mean 'above, higher up, beyond'.

EXERCISE I

Add one of the prefixes to the following words to mean the words given against them.

- _____ conductivity : the property of having zero electrical resistance
- _____ violet : having a wavelength beyond the violet end of the spectrum
- _____ zero : less than zero
- _____ red : having a wavelength just below the red end of the spectrum
- _____ sensitive : abnormally or excessively sensitive
- _____ heat : heat above boiling point without causing vaporisation
- _____ sonic : (sound waves) just below the level of audibility
- _____ saturate : add to solution beyond saturation point
- _____ continent : large land mass, not large enough to be called a continent
- _____ sonic : having a speed greater than that of sound
- _____ national : going beyond or above national limits or national considerations
- _____ standard: not having the required or normal quality
- _____ sonic : (sound) having a pitch above the upper limit of human hearing
- _____ tension : abnormally high blood pressure
- _____ structure : subordinate underlying parts on which something is built

Examples

Many adjectives are formed with the ending -able or -ible. In the following sentences you will find adjectives of this kind with the correct ending

- To create and propagate an artificial language that is acceptable to all the countries may not be feasible.
- Language is not fixed; it is flexible.
- Your handwriting is not legible.
- Some people believe that poetry is not teachable.
- American English and British English are mutually comprehensible.
- Because of the noise of the cars outside, the speaker's words were not audible.

7. To keep abreast of modern developments in science, a knowledge of English is indispensable.
8. It is desirable that every student learns at least one foreign language.
9. Politicians are responsible for many of the disputes over language.
10. It is probable that the Aryans borrowed many words from the Dravidian languages.

Given below is a list of verbs. Two nouns can be formed from each verb, the first one referring to an action or state, and the second to a substance or material. The first line is completed for you. Write the nouns for the remaining verbs.

	Verb	Noun 1	Noun 2
1.	pollute	pollution	pollutant
2.	explode	explosion	explosive
3.	catalyse	catalysis	catalyst
4.	disinfect	disinfection	disinfectant
5.	refrigerate	refrigeration	refrigerator
6.	adhere	adhesion	adhesive
7.	absorb	absorption	absorbent
8.	resist	resistance	resistor
9.	react	reaction	reactor
10.	detonate	detonation	detonator
11.	stimulate	stimulation	stimulant

EXERCISE II

Fill in the following blanks with the appropriate forms of the words and complete the table.

(Apr./May 2003)

	Noun	Adjective	Person concerned
1.	Technology	_____	_____
2.	_____	sociological	_____
3.	_____	_____	Botanist
4.	Pathology	_____	_____

EXERCISE III

Fill in the blanks in the table given below with the appropriate forms of the words.

(Apr./May 2004)

	Noun	Adjective	Person concerned
(a)	Geology	Geological	Geologist
(b)	Chemistry	_____	_____
(c)	_____	_____	Botanist
(d)	_____	Natural	_____
(e)	Technology	_____	_____

EXERCISE IV

Fill in the blank spaces below with the appropriate forms of the word.

(Nov./Dec. 2004)

Noun	Adjective	Person Concerned
(a) Psychology	_____	Psychologist
(b) Drama	_____	Dramatist
(c) _____	Natural	Naturalist
(d) Technology	Technological	_____

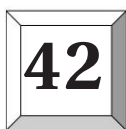
EXERCISE V

Fill in the blanks below with two types of nouns, the first one referring to an action or state and the second one to a substance.

(Nov./Dec. 2004)

Verb	Noun 1	Noun 2
(a) Catalyse	_____	_____
(b) Pollute	_____	_____

CHAPTER



Direct and Indirect Speech (Reported Speech)

Direct speech is one in which the words spoken by the subject is referred to directly using quotation marks. In an indirect speech, whatever the subject says is reported in such a way that the meaning is conveyed accurately.

E.g. Direct Speech: Ram said: "I will be late to office tomorrow".

Indirect Speech: Ram said that he would be late to office tomorrow.

PRONOUNS

Direct

I
My
Myself
Me
Mine
We
Us
Our
Ours
Ourselves
You (S)
You (O)
Your
Yours
Yourself
Yourselves

Indirect

He, she
His, her
Himself, herself
Him, her
His, hers
They
Them
Their
Theirs
Themselves
You are a student. (S)
I know you. (O)
He, she, they
Him, her, them
His, her, their
His, hers, theirs
Himself, herself
Themselves

VERBS

Direct (Present tense)

Am
Is

Indirect (Past tense)

Was
Was

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Are
Has, have
Do, does
Go
Write
Feed
Fall
Fell
Find
Found
Eat
Can
Will
May
I shall
We Shall
You shall
He shall
It shall
They shall

Direct (Near)

Now
Here
This
These
Ago
Thus
This day
This evening
Today
Tonight
Tomorrow

Yesterday

Were
Had
Did
Went
Wrote
Fed
Fell
Felled
Found
Founded
Ate
Could
Would
Might
Would

Should

Indirect (Distant)

Then
There
That
Those
Before
So
That day
That evening
That day
That night
The next day, The day after,
The following day
The previous day, The day before

RULE I

Vb (Past) , "Vb (Present)."
that past

Examples

1. He said, "I am very busy now."
He said that he was very busy then.
2. She said, "I shall go to my native place tomorrow."
She said that she would go to her native place the next day. (said to = told)

3. Rajan said to his friend, "I have passed the examination".
Rajan told his friend that he had passed the examination

4. The announcer said, "The Cheran Express is late by two hours".

The announcer said that the Cheran Express was late by two hours.

5. The director said, "The company has not been able to achieve its production target this year".
The director said that the company had not been able to achieve its production target that year.

(or)

The director expressed his regret that the company had not been able to achieve its production target during the year reported.

EXERCISE I

Rewrite the following sentences in the reported speech.

- The chairman said, "Your company has done very well this year, and the profit before tax has risen from last year's Rs.80 lakhs to 120 lakhs this year".
- The chairman said, "The unions have taken a hostile stand this year and production has been hit by repeated strikes".

(Look at the verbs in the above examples used to report the words of the chairman; said, admitted, complained. There are many other words of this kind which you can use in reporting. Some of these are explained, confessed, denied, replied, attributed.)

Complete the following sentences in the same way using the above words.

- The chairperson said, "The export projects have been the main cause for the drain on our funds."
- The chairperson said, "The company has been forced to resort to heavy borrowing during the year, and the rates of interest are very high".
- The chairperson said, "The unit to be started in Mysore will be able to benefit from several incentives and backward-area concessions offered by the Karnataka Government".
- The chairman said, "The customs officials have not extended the concessions available for imported components to us".
- Chairperson: "I have great pleasure in welcoming you, the shareholders of the company, to this annual general meeting".
- Chairperson: "During the year that ended on 31st March 2002, your company's performance was satisfactory, though it failed to rise to our collective expectations".
- Chairperson: "A number of adverse factors in combination worked to the detriment of the company".

Rule II (a)

"V + S _____?"
asked _____ if _____ + S + V + _____.
whether

Are you = He was, she was, they were.

Examples

- He said to his friend, "Are you very busy now?"
He asked his friend whether he was very busy then.

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2. She said to her mother, "Is the food ready?"
She asked her mother whether the food was ready.
3. He said to his brother, "Do you know how to answer this question?"
He asked his brother whether he knew how to answer that question.
4. He said to the stranger, "Don't you know the way to the station?"
He asked the stranger whether he did not know the way to the station.
5. Sita said to her mother, "Can you buy me a new sari today?"
Sita asked her mother whether she could buy her a new sari that day.

Interviewer : Will we be able to spread out to other planets?

Stephen Hawking : We shall probably manage a manned flight to Mars in the next century.

The Interviewer asked Stephen Hawking whether they would be able to spread out to other planets.

Stephen Hawking replied that they would probably manage a manned flight to Mars in the next century.

Rule II (b)

" W + V + S + _____ ?"

H

W = What, Why, When, Where, Which, Whose, Whom.

H = How.

asked W + S + V + _____.

Example

H

1. Rajan said to his father, "When shall we go to Ooty?"

Rajan asked his father when they would go to Ooty.

Rule III**Imperative Sentences**

" V + _____ ." = to + V

go = to go

write = to write

do = to do

don't do = not to do

Examples

1. Master to servant = ordered
The master said to the servant, "Get out".
The master ordered the servant to get out.
2. Parent, Teacher = advised
The teacher said to the students, "Work hard".
The teacher advised the students to work hard.

3. King, Commander, Captain, Chief = commanded
The King said to his men, "Shoot".
The King commanded his men to shoot.
4. None of the above = asked
My friend said to me, "Wait for me for a few minutes".
My friend asked me to wait for him for a few minutes.

Rule IV**Requests**

"Please + V + _____."
requested to + V

Example

1. She said to her mother, "Please give me some money today".

She requested her mother to give her some money that day.

Rule V**Universal Truths**

" "

that

Examples

1. He said, "Honesty is the best policy."
He said that honesty is the best policy.
2. The teacher said, "The sun rises in the east".
The teacher said that the sun rises in the east.
3. They said, "The earth goes round the sun".
They said that the earth goes round the sun.

Rule VI

S O
me, "You your you."
to me,
I my me

Examples

1. My teacher said to me, "You are the best student in the class".
My teacher told me that I was the best student in the class.
2. He said to me, "I know your father very well".
He told me that he knew my father very well.
3. He said to me, "I know you."
He told me that he knew me.

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Rule VII

Vb (Past) , “ Vb (past) .”
Had + P.P.

Examples

1. He said, “I was absent yesterday”.
He said that he had been absent the day before.
2. She said, “I wrote a letter to my father”.
She said that she had written a letter to her father.

Rule VIII

Vb (Present) “ Vb ”
No change,

Examples

1. He says, “Today is a working day”.
He says that today is a working day.
2. She says, “I know the answer to this question “.
She says that she knows the answer to this question.

Rule IX

“ ! ”.
exclaimed that

Examples

1. He said, “What a wonderful fellow you are!”
He exclaimed that he was a very wonderful fellow.
2. She said , “What a beautiful picture this one is!”
She exclaimed that that one was a very beautiful picture.
3. He said, “How nice !”
He exclaimed that it was very nice.
4. He said, “What a loss!”
He exclaimed sadly that it was a great loss.

Additional Examples

1. Interviewer: “Kindly tell us what would happen to the earth if its occupants increase so fast in number”.
Stephen Hawking: “If the occupants of the earth increase in number there will be hardly space for people in it, in 500 years’ time. If the world’s population continues to grow at its present rate doubling every 40 years— there is not going to be enough room for us all on Earth by 2600”.

Answer

The Interviewer asked Stephen Hawking to tell them what would happen to the earth if its occupants increased so fast in number. Stephen Hawking replied that if the occupants of the earth increased in number there would be hardly space for people in it, in 500 years’ time. He added that if the world’s population continued to grow at its present rate of doubling every 40 years, there was not going to be enough room for them all on Earth by 2600.

2. Stephen Hawking: "We either have to learn to live in a space station or travel to the next star. We won't do that in the next century".

Answer

Stephen Hawking said that they either had to learn to live in space stations or travel to the next star. He further said that they would not do that in the next century.

3. Stephen Hawking: "Very soon we will be able to increase the complexity of our internal record, our NDA, without having to wait for the slow process of biological evolution. It is likely that we will be able to redesign it completely in the next 1,000 years by increasing our brain size, for example".

Answer

Stephen Hawking said that very soon they would be able to increase the complexity of their internal record, their NDA' without having to wait for the slow process of biological evolution. He further said that it was likely they would be able to redesign it completely in the next 1,000 years by increasing their brain size, for example.

4. Stephen Hawking: "At the moment, computers have an advantage of speed but they show no sign of intelligence".

Answer

Stephen Hawking said that at the moment, computers had an advantage of speed but they showed no sign of intelligence.

5. Stephen Hawking: "On the biological side, the limit of intelligence up to now has been set by the size of the human brain".

Answer

Stephen Hawking said that on the biological side, the limit of intelligence up to then had been set by the size of the human brain.

EXERCISE II

1. Paterson got out of the car and said to the man, "I am very sorry. It was my mistake. I did not see you, I was lost in the beauty of the place".
2. Paterson said to the man, " And the dog? Is it yours?" The man said , "Yes, it's mine".
3. 'I see you were going hunting', said Peterson. 'I am so sorry I spoiled your fun'.
'Oh, no', said the man, 'I was not going hunting. This dog has been very ill for three weeks now, and has been suffering terrible pain'.
State that the man was going hunting.
4. The man said, 'I could not bear to see his suffering, and wanted to put an end to his pain. So I was taking him to the forest to shoot him. But now that won't be necessary since he is dead. Anyway, thank you for the money'.

CHAPTER

43

Cause and Effect Relationship

The following connectives can be used for stating causes and effects:

1. because, 2. as a result, 3. because of, 4. owing to, 5. due to, 6. on account of, 7. consequently, 8. as, 9. since, 10. in view of, 11. by virtue of, 12. in view of the fact that, 13. on account of the fact that, 14. owing to the fact that, 15. the reason why.

The word 'cause' can be used both as verb and noun when causal relations are expressed.

Examples

1. The growth of Chennai as an industrial city has caused the increase in vehicle population.
2. The growth of Chennai as an industrial city is the cause for the increase in vehicle population.
3. On account of bad road conditions accidents occur.
4. Because of bad weather, the vehicle skidded.
5. Scarcity is the cause of the rise in the price of articles.
6. The rise in the prices of articles is caused by scarcity.
7. The temperature increases. The volume of the gas increases.
 - (a) The temperature increases and consequently the volume of the gas increases.
 - (b) The temperature increases and therefore the volume of the gas increases.
 - (c) The temperature increases and as a result the volume of the gas increases.
 - (d) The temperature increases and hence the volume of the gas increases.
 - (e) As the temperature increases, the volume of the gas also increases.
 - (f) As a result of an increase in temperature, the volume of the gas increases.
 - (g) Increase in temperature results in increase in the volume of gas.
 - (h) Because of the increase in temperature, the volume of the gas increases.
8. They have devised a new method for superheating steam. It has caused an increased efficiency.
 - (a) They have devised a new method for superheating steam and consequently efficiency has increased.
 - (b) They have devised a new method for superheating steam and therefore efficiency has increased.
 - (c) They have devised a new method for superheating steam and as a result efficiency has increased.
 - (d) They have devised a new method for superheating steam and hence efficiency has increased.
 - (e) Owing to the devising of a new method for superheating steam, increased efficiency has been caused.
9. The population has increased so much that there is a food shortage in the country.
10. The country has abundant natural resources so that it can support itself.
11. The working of the machine is so complex that it requires a technician to operate it.

EXERCISE

Rewrite the following pairs of sentences combining them into one each. Use the appropriate expressions to show their causal relations.

1. He was speaking slowly. It was difficult to hear. (M.Q.P.)
2. The machine was tested. It was installed. (M.Q.P.)
3. It was raining. I couldn't go out. (M.Q.P.)
4. He did not write the exams well. He did not pass. (M.Q.P.)
5. It was raining very hard. We had to stay indoors the whole day.
6. It was very cold. We stayed in bed the whole morning.
7. He is a very kind man. You can get whatever you want.
8. You are not foolish. You can't believe all that you read in the papers.
9. You are very young. You cannot understand the implications of today's event.
10. The gas is wet. It has to be dried.
11. The temperature is high in summer. An A.C. unit should be installed.
12. Sufficient atomic power is not available. We depend on hydro-electricity.
13. The air filter gets clogged with dirt. It must be cleaned regularly.
14. The mechanic was hurt. He went to hospital.
15. I reached the station early. I boarded the train.
16. The operation is successful. The patient is alive.
17. She was late. She didn't get the job.
18. He was tired. He went to bed early.
19. The steam from the boiler is wet. It has to be passed through a super-heater.
20. The temperatures reached are very high. Some method of cooling must be adopted.
21. This type of turbine is very widely used. It has a much greater efficiency.
22. A metal expands when it is heated. Expansion joints are fitted to steam pipes.
23. Exhaust gases still possess a great deal of heat. They can be used to heat the incoming air to the boiler.
24. Atomic power is not available in sufficient quantity. Coal is still a very valuable source of power.
25. There are dust particles in the atmosphere. Accurate observation is very difficult.
26. The cost of labour is high. A mechanical stoker was installed.
27. The temperatures are high. Special alloys are used.
28. The earth's ice cover is melting at high rates. Polar regions are warming faster than the planet as a whole. (M.Q.P.)
29. Several new blocks of buildings have been built there. The huge canopy of trees has disappeared. (M.Q.P.)

CHAPTER



British English and American English

There is a disparity in the meaning conveyed by certain words, between the British and American forms of English. Also there is a difference in the way certain words are spelt in the two forms.

Examples

1. Give the American English equivalents of the following British English words.

(a) Lift (b) Chemist

(Nov./Dec. 2003)

Answer

Lift = Elevator

Chemist = Druggist

2. Give the American spellings for the following British equivalents.

(Apr./May 2004)

British English

American English

- (a) Programme
(b) Theatre
(c) Industrialisation
(d) Colour

Answer

British English

American English

- | | |
|-----------------------|-------------------|
| (a) Programme | program |
| (b) Theatre | theater |
| (c) Industrialisation | industrialization |
| (d) Colour | color |

BASIC DIFFERENCES

British English

American English

I. - our

- or

Favour

favor

Odour

odor

Honour

honor

Endeavour

endeavor

Favourable

favorable

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	Ardour	ardor
	Armour	armor
	Clamour	clamor
	Colour	color
	Harbour	harbor
	Humour	humor
	Labour	labor
	Tumour	tumor
	Valour	valor
	Vapour	vapor
	Vigour	vigor
	Honourable	honorable
	Parlour	parlor
	Rigour	rigor
II.	- re	- er
	Calibre	caliber
	Centre	center
	Metre	meter
	Centimetre	centimeter
	Kilometre	kilometer
	Millimetre	millimeter
	Fibre	fiber
	Theatre	theater
	Lustre	luster
II.	- ll	- l
	Woollen	woolen
	Callipers	calipers
	Leveller	leveler
	Marvellous	marvelous
	Medallist	medalist
	Reveller	reveler
	Chilli	chili
	Councillor	councilor
	Counselling	counseling
IV.	- l	- ll
	Skilful	skillful
	Wilful	willful
	Enrol	enroll
	Fulfil	fulfill
	Instil	instill

V.	- c	- s
	Licence	license
	Offence	offense
	Pretence	pretense
VI.	- c	- k
	Sceptical	Skeptical
VII.	- gue	- g
	Analogue	analog
	Catalogue	catalog
VIII.	- mme	- m
	Programme	program
IX.	- s	- z
	Analyse	analyze
	Paralyse	paralyze
X.	- tt	- t
	Carburettor	carburetor
XI.	- nn	- n
	Channel	chanel

Given below is a list of British English words with their American equivalent

Adviser	advisor
Aerial	antenna
Alsatian	German shepherd
Autumn	fall
About	around
About-turn	about-face
Aeroplane	airplane
Aesthetic	esthetic
Afterwards	afterward
Ageing	aging
Allround	all-around
Alternative	alternate
Amber	yellow
Amoeba	ameba
Anywhere	everyplace
Annexe	annex
Anti-clockwise	counter clockwise
Axe	ax

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BA	AB
Biscuit	cookie
Board and lodging	room and board
Cheque	check
Cutting	clipping
CV	résumé
Cutlery	silverware
Change	shift
Cosy	cozy
Chemist	druggist, pharmacist
Cipher	zero
Cloakroom	checkroom
Cooker	stove
Counterfoil	stub
Disc	disk
Dust bin	garbage can
Earth	ground
Eject	send off
Engine driver	engineer
Ensure	insure
Essay	paper
Extra time	over time
From Monday to Friday	Monday through Friday
Fire brigade	fire department
Fire engine	fire truck
Flat	apartment
Film	movie
Flask	thermos
Full stop	period
Flyover	overpass
Football	soccer
Foundation course	introductory course
Frost	ice
Grey	gray
Got	gotten
Glycerine	glycerin
Grill	broil
Ground floor	first floor
Handbag	purse
Hire purchase	installment plan
Holiday	vacation

Horror film	horror movie
Hire	rent
Hairpin bend	hairpin turn
In-built	built-in
Indicator	turn signal
Interval	intermission
Jewellery	jewelry
Knickers	panties
Lawyer	attorney
Letter box	mail box
Lift	elevator
Lorry	truck
Luggage	baggage
Line	queue
Long-sighted	far-sighted
Lunch room	dining hall
Maize	corn
Moderator	mediator
Mineral water	bottled water
Mobile phone	cell phone
Notice board	bulletin board
Number plate	license plate
Parcel	package
Post	mail
Pram	baby carriage
Pyjamas	pajamas
Quarter to two	quarter of two
Quarter past two	quarter after two
Race course	race track
Rack	frame
Ring	call
Rubbish	garbage
Railway	railroad
Skipping rope	jump rope
Sanatorium	sanitarium
Scrub	scratch
Time table	schedule
Term	semester
Tick	check

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Toilet	bath room
Torch	flash light
Tournament	tourney
Trade fair	trade show
Traffic police	traffic cops
Trolley	cart
Trousers	pants
Truck	car
Tyre	tire
Teleprinter	teletypewriter
Value	appraise
Veranda(h)	porch
Wagon	freight car
Waistcoat	vest
Warehouse	storehouse
Wind	gas

CHAPTER

45

Number of Syllables and
the Stressed Syllable

Example

(Nov./Dec. 2003)

Divide the following words into syllables and underline the stressed syllable.

- (a) Technology (b) Communication

Answer

- (a) Techn
- ology
- (4) (b) Commu
- nication
- (5)

Additional Examples

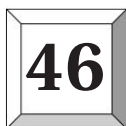
- | | | | |
|----------------------------|-----|--------------------------|-----|
| 1. in <u>cred</u> ible | (4) | 2. <u>at</u> mosphere | (3) |
| 3. ga <u>rb</u> age | (2) | 4. <u>dis</u> posal | (3) |
| 5. <u>del</u> uge | (2) | 6. de <u>scend</u> | (2) |
| 7. <u>dam</u> age | (2) | 8. po <u>llut</u> ion | (3) |
| 9. pro <u>duc</u> tion | (3) | 10. po <u>ach</u> ers | (2) |
| 11. <u>ecol</u> ogy | (4) | 12. vege <u>tation</u> | (4) |
| 13. affo <u>rest</u> ation | (5) | 14. ex <u>pedi</u> tion | (4) |
| 15. me <u>tal</u> lic | (3) | 16. de <u>duce</u> | (2) |
| 17. na <u>tion</u> ality | (4) | 18. sa <u>nctu</u> ary | (3) |
| 19. <u>obj</u> ect (N) | (2) | 20. ob <u>ject</u> (V) | (2) |
| 21. <u>sub</u> ject (N) | (2) | 22. su <u>bject</u> (V) | (2) |
| 23. <u>proj</u> ect (N) | (2) | 24. pr <u>oject</u> (V) | (2) |
| 25. <u>per</u> fect (N) | (2) | 26. pe <u>rfect</u> (V) | (2) |
| 27. <u>con</u> duct(N) | (2) | 28. co <u>nduct</u> (V) | (2) |
| 29. <u>con</u> tact(N) | (2) | 30. co <u>n</u> tact(V) | (2) |
| 31. <u>con</u> trast(N) | (2) | 32. co <u>n</u> trast(V) | (2) |
| 33. ex <u>port</u> (N) | (2) | 34. ex <u>port</u> (V) | (2) |
| 35. <u>re</u> bel(N) | (2) | 36. re <u>bel</u> (V) | (2) |
| 37. pr <u>oduce</u> (N) | (2) | 38. pr <u>oduce</u> (V) | (2) |
| 39. <u>re</u> cord(N) | (2) | 40. re <u>cord</u> (V) | (2) |

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41. <u>progress</u> (N)	(2)	42. <u>progress</u> (V)	(2)
43. <u>convict</u> (N)	(2)	44. <u>convict</u> (V)	(2)
45. <u>import</u> (N)	(2)	46. <u>import</u> (V)	(2)
47. <u>increase</u> (N)	(2)	48. <u>increase</u> (V)	(2)
49. <u>contact</u> (N)	(2)	50. <u>contact</u> (V)	(2)
51. <u>permit</u> (N)	(2)	52. <u>permit</u> (V)	(2)
53. <u>examination</u>	(5)	54. <u>production</u>	(4)
55. <u>fortification</u>	(5)	56. <u>sanitation</u>	(4)
57. <u>magnify</u>	(3)	58. <u>meditate</u>	(3)
59. <u>minimise</u>	(3)	60. <u>analyse</u>	(3)
61. <u>psychology</u>	(4)	62. <u>pathology</u>	(4)
63. <u>economic</u>	(4)	64. <u>emphatic</u>	(3)
65. <u>historical</u>	(4)	66. <u>geographical</u>	(5)
67. <u>botanical</u>	(4)	68. <u>formality</u>	(4)
69. <u>capacity</u>	(4)	70. <u>gravity</u>	(3)
71. <u>responsibility</u>	(6)	72. <u>payee</u>	(2)
73. <u>devotees</u>	(3)	74. <u>nominee</u>	(3)
75. <u>engineer</u>	(3)	76. <u>pioneer</u>	(2)
77. <u>gazette</u>	(2)	78. <u>compose</u>	(2)
79. <u>marriage</u>	(2)	80. <u>performance</u>	(3)
81. <u>beautiful</u>	(3)	82. <u>motherhood</u>	(3)
83. <u>cowardice</u>	(3)	84. <u>conclusive</u>	(3)
85. <u>colourless</u>	(3)	86. <u>achievement</u>	(3)
87. <u>enclosure</u>	(3)	88. <u>musician</u>	(3)
89. <u>politician</u>	(4)	90. <u>injurious</u>	(4)
91. <u>laborious</u>	(4)	92. <u>however</u>	(3)
93. <u>whenever</u>	(3)	94. <u>myself</u>	(2)
95. <u>target</u>	(2)	96. <u>support</u>	(2)
97. <u>commitment</u>	(3)	98. <u>infrastructure</u>	(4)
99. <u>proposition</u>	(4)	100. <u>statutory</u>	(4)
101. <u>prospect</u>	(2)	102. <u>protectionism</u>	(5)
103. <u>projection</u>	(3)	104. <u>constraint</u>	(2)
105. <u>impediment</u>	(4)	106. <u>holistic</u>	(3)
107. <u>believe</u>	(2)	108. <u>remote</u>	(2)
109. <u>satisfy</u>	(3)	110. <u>fortnight</u>	(2)
111. <u>Monday</u>	(2)	112. <u>colour</u>	(2)
113. <u>applaud</u>	(2)	114. <u>apparatus</u>	(4)

115. <u>a</u> pparent	(2)	116. a <u>g</u> o	(2)
117. <u>c</u> onfluence	(3)	118. a <u>ff</u> luent	(3)
119. <u>i</u> nfluence	(3)	120. o <u>i</u> ntment	(2)
121. <u>f</u> urniture	(3)	122. <u>ch</u> amber	(2)
123. <u>ch</u> ildhood	(2)	124. <u>u</u> rgent	(2)
125. a <u>d</u> just	(2)	126. e <u>ng</u> ine	(2)
127. <u>b</u> udget	(2)	128. ma <u>ch</u> ine	(2)
129. a <u>ss</u> ure	(2)	130. a <u>d</u> mission	(3)
131. <u>m</u> ushroom	(2)	132. y <u>e</u> sterday	(3)
133. a <u>b</u> use	(2)	134. fa <u>m</u> iliar	(4)
135. <u>u</u> nion	(3)	136. s <u>t</u> udent	(2)
137. y <u>e</u> llow	(2)	138. tele <u>co</u> m <u>mu</u> nica <u>ti</u> on	(7)
139. ex <u>p</u> losion	(3)	140. l <u>a</u> nguage	(2)
141. a <u>l</u> ong	(2)	142. a <u>m</u> ong	(2)
143. e <u>v</u> ening	(2)	144. pr <u>o</u> long	(2)
145. p <u>o</u> ssible	(3)	146. co <u>m</u> pan <u>i</u> on	(3)
147. br <u>e</u> akfast	(2)	148. ri <u>b</u> bon	(2)
149. ma <u>g</u> azine	(3)	150. e <u>g</u> o	(2)
151. gl <u>a</u> mour	(2)	152. k <u>i</u> tchen	(2)
153. s <u>ch</u> olar	(2)	154. pe <u>t</u> ro <u>le</u> um	(4)
155. el <u>e</u> ctricity	(5)	156. te <u>l</u> eph <u>o</u> ne	(3)
157. do <u>m</u> estic	(3)	158. d <u>y</u> namo	(3)
159. gl <u>y</u> cerine	(3)	160. ma <u>l</u> nu <u>t</u> riti <u>o</u> n	(4)
161. k <u>n</u> owledge	(2)	162. na <u>t</u> iona <u>l</u> ity	(4)
163. n <u>e</u> twork	(2)	164. gr <u>a</u> m <u>o</u> ph <u>o</u> ne	(3)
165. ph <u>y</u> sician	(3)	166. f <u>a</u> mous	(2)
167. fa <u>s</u> cination	(4)	168. ph <u>o</u> to <u>g</u> raph	(3)
169. lie <u>t</u> enant	(3)	170. v <u>e</u> rdict	(2)
171. s <u>e</u> mester	(3)	172. c <u>e</u> ns <u>o</u> r	(2)
173. s <u>u</u> mmer	(2)	174. c <u>r</u> isis	(2)
175. zo <u>o</u> logy	(4)	176. z <u>e</u> ro	(2)
177. r <u>e</u> m <u>e</u> mber	(3)	178. re <u>a</u> pp <u>e</u> ar	(3)
179. ha <u>b</u> itual	(4)	180. he <u>m</u> is <u>p</u> here	(3)
181. h <u>y</u> poth <u>e</u> tic	(4)	182. a <u>d</u> equ <u>a</u> te	(3)
183. w <u>a</u> rning	(2)	184. a <u>w</u> kward	(2)

CHAPTER



Connectives

CONJUNCTION

A conjunction is a word that joins words, phrases or sentences.

e.g. and, but, or

Two and two make four.

John and Alex are brothers.

He is poor but honest.

Take it or leave it.

Some conjunctions are used in pairs; as,

1. Either ... or
She is either French or German.
It is either a parrot or a crow.
I left it either on the table or in the drawer.
2. Neither ... nor
It is neither useful nor ornamental.
Neither his brother nor his father was there.
He is neither a knave nor a fool.
3. Both ... and
She speaks both French and English
Both his brother and sister are married.
4. Though ... yet
Though he is suffering a lot, yet he does not complain.
5. Whether ... or
It all depends on whether it rains or not.
6. Not only but also
He not only acts but also writes his own plays.
Not only is she rich but also beautiful.
Conjunctions which are thus used in pairs are called Correlative
Conjunctions or merely correlative.

COMPOUND CONJUNCTIONS

1. In order that
He left early in order that his children would not be alone at home.
2. On the condition that
I will lend you the money on the condition that you return it promptly.
3. Even if
I'll get there, even if I have to walk all the way.

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4. So that (in order that; with the aim that)
She worked hard so that everything would be ready in time.
5. Provided that (on the condition that; only if)
I will agree to go provided that my expenses are paid.
6. As though
He walks as though he is slightly lame.
7. In as much as (since; because; to the extent that)
He shows an interest in other people as much as they can be useful to him.
8. As well as
The cow as well as the horse eats grass.
9. As soon as
He left as soon as he received the telegram.
10. As if
He behaved as if nothing had happened.

Conjunctions are Divided into Two Classes

1. Co-ordinating
A Co-ordinating conjunction joins together clauses of equal rank.
e.g. Birds fly but cattle don't.
The Chief Co-ordinating Conjunctions are:
and, but, for, or, nor, also, either... or, neither ... nor
2. Subordinating

Co-ordinating Conjunctions

1. Cumulative or Copulative merely adds one statement to another; as,
She came in and sat down.
2. Adversative expresses opposition or contrast between two statements; as,
He is slow, but he is sure.
Tom went to the party, but his brother didn't.
I was angry, still I kept quiet.
3. Disjunctive or Alternative expresses a choice between two alternatives; as,
Neither a borrower nor a lender be.
Is it green or blue?
Are you coming or not?
4. Illative, expresses as inference; as
Something certainly fell in; for I heard a splash.

Subordinating Conjunction

A Subordinating Conjunction joins a clause to another on which it depends for its full meaning.

The Chief Subordinating Conjunctions are:

- (i) After : After he had done his duty, he felt happy.
- (ii) Because : He cannot buy new clothes because he is poor.
- (iii) If : If you work hard, you'll pass.
- (iv) That : Tell him that I came.
- (v) Though : Though he knew the answer, he did not write it.
- (vi) Although : He said they were married, although I'm sure they aren't.

- (vii) Till : Will you wait till I return?
- (viii) Before : Did she leave a message before she left?
- (ix) Unless : He will not pay unless he is compelled.
- (x) As : As you weren't there, I left a message.
- (xi) When : When he saw me, he smiled.
- (xii) Where : Put it where we can all see it.
- (xiii) While : Make hay while the sun shines.
- (xiv) How : I do not understand how it all happened.
- (xv) Why : I know not why he left us.

Subordinating Conjunctions may be classified according to their meaning, as follows:

1. Time
Before I made a decision, I thought carefully about it.
2. Cause or Reason
As he was not there, I spoke to his brother.
I help you because I like you.
3. Purpose
We eat that we may live.
4. Result or Consequence
He was so tired that he could scarcely stand.
5. Condition
Unless you work hard, you cannot pass.
If he buys the book, he will read it.
6. Concession
Though he hates me, yet I love him.
7. Comparison
Hyderabad is larger than any other city in South India.

EXERCISE

Link the sentences using suitable connectives (conjunctions).

1. The construction of the new bridge was completed last year.
Vehicles are not allowed on the bridge (Apr. '97)
2. At high speeds, the turbo-jet is more efficient.
At low speeds, the propeller-driven aircraft is more efficient. (Nov. '98)
3. Glass is a useful material.
Glass breaks easily. (Oct. 2000)
4. Glass is fragile.
Glass has many uses. (Apr. '99)
5. Glass is fragile.
It should be handled carefully. (Apr. '97)
6. The bridge collapsed.
The bridge was not properly designed. (Apr. '98)
7. Computerisation is considered very essential.
It can improve the information system. (Apr. 2000)
8. Do it.
You will be happy.
9. He is a doctor.

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- He is a lawyer.
10. Take it.
Leave it.
11. Summer is hot.
Winter is cold.
12. He worked hard.
He did not succeed.
13. He tried his best.
He did not win any prize.
14. He was crossing the road
He was run over by a lorry.
15. I know a man.
The man has been to Iceland.
16. Here is the doctor.
The doctor cured me of malaria.
17. This is the house.
Jack built it.
18. Bring me the book.
The book is on the table.
19. The news is extremely good.
It cannot be true.
20. He grew older.
He became less active.
21. He was ambitious.
I killed him.
22. He was poor.
He could not buy new clothes.
23. Work hard.
You will pass.
24. Work hard.
You will not pass.
25. We do our work well.
Our master will be angry with us.
26. Keep quiet.
You will be punished.
27. He earns Rs.10,000 a month.
She gets atleast Rs.30,000.
28. Corrosion is a chemical process.
Erosion is a mechanical process.
29. He reached Chennai.
At once he left for Delhi.
30. He received the telegram.
Immediately he left for his native place.
31. The earth is round.
We can prove it.
32. Rahim ran away.

(Nov. '97, Nov. '99)

(Oct. 2000)

He saw a tiger

33. He is foolish.

He is also lazy.

34. John passed the examination.

Joseph also passed the examination.

35. There was no news.

She went on hoping.

36. I went to his house.

He was watching T.V.

37. The meeting was held in the Town Hall.

It was a great success.

38. This is the man.

His house was broken into by burglars last night.

39. He is the student.

His father is a doctor.

40. His brother is well.

His sister is ill.

41. She may be in the house.

She may be in the garden.

42. We went early to the circus.

We could not get a seat.

43. He is slow.

He is sure.

44. You must be quiet.

You must leave the room.

45. He is poor.

He is contented.

46. I honour him.

He is a brave man.

47. I will come.

I am not ill.

48. He was rich.

He was also generous.

49. His brother was not there.

His father was not there.

50. He went to the market.

He bought vegetables.

51. Use appropriate connectives like 'because of', 'due to', 'as a result of', etc and write a sentence by linking the 'causes' given in column 'A' with 'effects' given in column 'B'. Do not use the same connective more than once.

A

(a) Air pollution

(b) Construction of dams

(c) Environmental degradation

(d) Boom in I.T. Industries

B

lung diseases

evacuation of families

ozone depletion

increase in employment opportunities

CHAPTER



Imperatives and Recommendations (‘Should’ and Imperative Forms)

The imperative form is often used for *experimental* or *handling* instructions, and in *hypotheses* or *calculations*.

SHOULD FORM

1. Use ‘should’ instead of the imperative
(or)
2. Use the imperative form instead of ‘should’
(or)
3. Change into ‘Should’ instructions

Examples

1. Add concentrated sulphuric acid.
Concentrated sulphuric acid should be added.
2. Operate these machines carefully.
These machines should be operated carefully.
3. Store the cylinders in an upright position.
Cylinders should be stored in an upright position.
4. Keep all cutting-tools in good condition. (M.Q.P., Oct. 2001)
All cutting-tools should be kept in good condition.
5. Wear safety-helmets at all times. (M.Q.P.)
Safety-helmets should be worn at all times.

EXERCISE I

Rewrite using ‘should’ instead of the imperative.

1. Do not copy your friend’s assignment. (Apr. 2000)
2. Write the examination with fountain pen. (Nov. ’99)
3. Look at the corrupt with contempt. (Apr. ’99)
4. Save money so that you can have money. (Apr. ’99)
5. Pour water into the vessel until it overflows. (Nov. ’99)
6. Allow the water to cool for ten minutes and then take the temperature.

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7. Continue the process of cooling for ten minutes.
8. Calculate the amount of expansion.
9. Take the temperature every minute.
10. Don't leave any dirt on them.
11. Press the surface together.
12. Hold the convex lens in front of the white paper.
13. Operate these machines carefully.
14. Add concentrated sulphuric acid.
15. Take care to squeeze out the whole of the flux.
16. The test tube half-filled with water is heated for some time. (Apr. 2001)
17. Obey him. (Apr. 2001)
18. Don't take him for granted. (Apr. 2001)
19. Drill this iron piece till you reach the bottom. (Oct. 2000)
20. Give instructions on how to mend a puncture in a bicycle tyre.
21. Give advise on how to prevent burglars from entering houses.
22. Tell a new employee of the safety precautions he should observe in the machine shop.
23. Instruct an apprentice on how to cut screws on a lathe.
24. Fill a test-tube half full of water and heat it nearly to boiling point.
25. Support the tube on a stand and allow it to cool.
26. Stir it carefully with a glass rod.
27. Record the readings you obtain, and plot them on a graph of temperature against time.
28. Repeat this with a tube half-full of crystals.
29. Allow the solid to melt.
30. Heat the liquid to 100°C, fix the tube on the stand and allow it to cool.
31. Record the results as before and plot them.
32. Handle these machines with great care. (M.Q.P. 2001)
33. Observe safety precautions at all times. (Oct. 2001)
34. Increase the temperature till it reaches 150°C (Oct. 2001)

IMPERATIVE FORM

Imperative Form = Verb +

Rewrite the following using the imperative form.

(or)

Change into imperative.

(or)

Use the imperative form instead of 'should'.

- Examples :**
- (i) The surfaces should be pressed together.
Press the surfaces together.
 - (ii) A test tube should be filled half full of water.
Fill a test tube half full of water.

EXERCISE II

Change into the Imperative Form.

1. The project work should be completed on time. (Apr. 2000)
2. The metal plates should be clamped together. (Apr. 2000)
3. Care should be taken not to damage the machinery. (Apr. 2000)
4. An oxy-acetylene torch should be used for welding. (Apr. '97)
5. Water is poured into the jar. (Nov. '97)
6. The vessel should be cleaned thoroughly. (Apr. '98)
7. The container should be filled with water. (Apr. '98)
8. The water was allowed to cool for ten minutes. (Apr. '98)
9. Safety precautions should be observed at all times.
10. The jack is not to be put anywhere else. (Apr. '94)
11. These instructions should be strictly adhered to. (Apr. 2001)
12. You should avoid heating the metal beyond its critical temperature. (Apr. 2001)
13. The ends of the metal articles should be thoroughly cleaned.
14. No dirt should be left on them.
15. The ends should then be heated to a white heat.
16. An oxy-acetylene torch should be used for this.
17. A flux should then be applied to the weld.
18. The surfaces should be pressed together.
19. Care should be taken to squeeze out the whole of the flux.
20. The joint should then be smoothed off.

(These sentences are taken from A.J. Herbert's *The Structure of Technical English*, Page 37)

SITUATIONAL INSTRUCTIONS

Giving situational instructions, e.g., instructions for changing a punctured tyre.

Example**Instructions for Fixing a Fuse at Home**

First of all switch off the mains to cut off the current supply. After that open the fuse box and remove the fuse. Check it. Remove the burnt wire with the help of a screw driver. Then fix a new fuse wire in its place and connect the two points. Replace the fuse carrier in its place and switch on the mains.

Do it Yourself

1. Give instructions for making a long distance call.
2. Give instructions for changing a punctured tyre.
3. Give situational instructions for starting a motor bike or a scooter.
4. Give instructions for recording a song in a cassette.
5. Give instructions for opening a Savings Bank Account in a bank.
6. Give instructions for registering your name in the Employment Exchange.

CHAPTER



Homonyms and Homophones

HOMONYMS

A homonym is a word spelt and pronounced like another word but with a different meaning.

Examples

1. See
 - (a) To become aware of somebody / something by using the eyes; to perceive somebody / something.
e.g. Did you see what happened?
 - (b) The district for which a bishop or an archbishop is responsible, the office or authority of a bishop or an archbishop.
2. Saw
 - (a) Past tense of 'see'.
 - (b) A wise saying. e.g. You know the old saw, "More haste, less speed".
 - (c) A tool that has a long blade with sharp teeth on one of its edges – used for cutting wood, metal, etc.
3. Plot
 - (a) A small piece of land.
 - (b) A plan or an outline of the events in a play or novel.
 - (c) A secret plan made by several people to do something, usually something wrong or illegal.
4. Play
 - (a) Play games.
 - (b) A drama.
5. Set
 - (a) To put something / somebody in a particular place.
 - (b) A group of similar things that belong together in some way.
6. Fell
 - (a) Past tense of fall.
 - (b) To cut down a tree.
7. Fellow
 - (a) A man or boy. e.g. He's a nice fellow.
 - (b) A graduate student holding a fellowship.
 - (c) Of the same class, type, etc. a fellow-passenger.
8. Found
 - (a) Past tense and past participle of find.
 - (b) To start or establish an organisation, institution, etc.
9. File
 - (a) An office file.
 - (b) A line of people or things one behind the other.
10. Heat

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- (a) The condition of being hot; high temperature.
- (b) A preliminary round in a contest, the winners of which take part in further rounds or the final.
- 11. Appropriate
 - (a) Suitable, acceptable, correct.
 - (b) To take something for one's own use, especially without permission or illegally.
- 12. Pen
 - (a) An instrument for writing with ink.
 - (b) A small piece of land surrounded by a fence in which farm animals are kept.

HOMOPHONES

A homophone is a word pronounced like another word but with a different meaning or spelling, e.g. some/ sum; knew, new.

Example

Use the following homophones in sentences to distinguish their meanings.

- (a) Weather
- (b) Whether

(Nov./Dec. 2003)

Answer

- (a) The success of the crop depends on the *weather*.
- (b) I don't know *whether* I'll be able to come.

Additional Examples

1. advice, advise
You should take legal *advice*.
The doctor *advised* him complete rest.
2. altar, alter
The bridegroom took the bride to the *altar*.
She had to *alter* her clothes after losing weight.
3. ascent, assent
The *ascent* of Mount Everest is not easy.
The President gave his *assent* to the Bill.
4. beach, beech
The tourists were sunbathing on the *beach*.
A *beech* tree has shiny leaves.
5. bail, bale
The judge granted him *bail*.
The cloth was packed in *bales*.
6. bare, bear
She walked around in *bare* feet.
Do the bride's parents have to *bear* the cost of the wedding?
The *bear* loves honey.
7. birth, berth
The baby weighed seven pounds at *birth*.
He reserved a *berth* on the train.
8. blew, blue
The conductor *blew* the whistle.
She has *blue* eyes.

9. bored, board
His story *bored* her.
Please *board* the plane immediately.
10. brake, break
He applied the *brake* to stop the car.
We have lunch *break* for an hour.
11. bread, bred
He bought a loaf of *bread*.
She is a well-*bred* child.
12. career, carrier
She chose an academic *career*.
Mosquitoes are *carriers* of malaria.
13. carat, carrot
He bought her a 22-*carat* gold ring.
It was a *carrot-and-stick* approach.
14. cell, sell
All plants and animals are composed of *cells*.
Is she likely to *sell* her car?
15. coat, quote
You must cut your *coat* according to your cloth.
Please *quote* your account number in all correspondence.
16. cord, card, chord
The parcel was tied with stout *cords*.
He played his *cards* well.
He played a *chord* on the piano.
17. council, counsel
He is a member of the legislative *council*.
We must listen to the *counsel* of our elders.
18. coward, covered
Don't be such a *coward*, jump!
The trees were *covered* in / with fruit.
19. coarse, course
He has *coarse* skin.
What *course* of action would you recommend?
20. dear, deer
He lost everything that was *dear* to him.
He visited the *deer* park.
21. desert, dessert
Sometimes even best friends *desert* us.
They were served a pineapple *dessert*.
22. dairy, diary
They prefer *dairy* products.
Do you keep a *diary*?
23. die, dye
People *die* of old age.
He *died* his hair.

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24. decease, disease
He inherited a fortune after his uncle's *decease*.
He was suffering from an incurable *disease*.
25. fair, fare
She deserves a *fair* trial.
Children travel at reduced *fare*.
26. feat, feet
It was a brilliant *feat* of engineering.
They walked round the house in bare *feet*.
27. foul, fowl
We should not use *foul* language.
He is very fond of *fowl* curry.
28. flair, flare
She has a *flair* for languages.
Tempers *flare* in heated arguments.
29. groan, grown
When hurt, you *groan* with pain.
A sow is a fully-*grown* female pig.
30. hair, hare, heir
He has black, thick *hair*.
A *hare* runs very fast.
He is *heir* to a large fortune.
31. heal, heel
Some wounds *heal* slowly.
The thief ran with an angry crowd at his *heels*.
32. him, hymn
I don't know *him*.
A *hymn* is a song in praise of God.
33. loose, lose
The door handle is *loose*.
She was afraid she would *lose* her pen.
34. meat, meet
I don't eat *meat*.
I want to *meet* my friend.
35. oar, ore
She dipped the *oars* into the water.
Iron *ore* is found here.
36. peace, piece
We want *peace*, not war.
I need a *piece* of paper.
37. peal, peel
She heard a *peal* of thunder.
You can slip on a banana *peel*.
38. plain, plane
It was a document written in *plain* English.
There was a *plane* crash.

39. pray, prey
You *pray* to God.
We should not fall *prey* to drugs.
40. principal, principle
New roads have been laid to link the country's *principal* cities.
I have studied the *principles* of Economics.
41. quiet, quite
Students must keep *quiet* in the class.
You're *quite* right.
42. red, read
He has a *red* car.
I have *read* this book before.
43. rain, reign
It love to play in the *rain*.
Queen Elizabeth *reigns* over England.
44. right, write, rite
You should know the difference between *right* and wrong.
Can you *write* in English?
He had to perform the funeral *rites*.
45. ring, wring
He gave her a gold *ring*.
To remove excess water we *wring* the clothes.
46. road, rode
This *road* leads to London.
She *rode* an elephant.
47. root, route
What lies at the *root* of the matter?
There was no escape *route*.
48. rower, rover
A *rower* is a person who rows a boat.
She's is always been something of a *rover*.
49. sight, site, cite
He lost *sight* of his friend.
Rescue workers rushed to the *site* of the plane crash.
Can you *cite* a poem by Keats?
50. some, sum
There's *some* ice in the fridge.
Huge *sums* have been invested in the project.
51. sore, sour
He has a *sore* throat.
This apple is really *sour*.
52. stationary, stationery
The bus hit a *stationary* vehicle.
Yesterday I bought some *stationery*.
53. steal, steel
It's wrong to *steal*.
This knife is made of *steel*.

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54. tail, tale
Dogs wag their *tails*.
I love fairy *tales*.
55. team, teem
Our cricket *team* has to improve its performance.
This river *teems* with fish.
56. tear, tier
A *tear* rolled down his cheek.
Many trains have three-*tier* compartments
57. tire, tyre
You will *tire* after a strenovn exercise.
You must always check the *tyre* pressure.
58. to, too
He wants *to* go *to* London.
The tea is *too* hot for me to drink.
59. vain, vein
All his attempts were in *vain*.
Royal blood runs in his *veins*.
60. vary, wary
Opinions *vary* widely on this point.
She is *wary* of strangers.
61. veal, wheel
She made *veal* cutlets.
A bicycle has two *wheels*.
62. veil, wail
She *veiled* her eyes with her hand.
The child burst into loud *wails*.
63. verse, worse
He bought a book of humorous *verses*.
The weather got *worse* during the day.
64. vile, while
We should not use *vile* language.
He fell asleep *while* watching television.
65. vine, wine
I saw a row of *vines*.
He doesn't drink *wine*.
66. waist, waste
She tied the rope a round her *waist*.
It's a *waste* of time.
67. weak, week
He was too *weak* to walk.
He comes to see us once a *week*.
68. weather, whether
The success of the crop depends on the *weather*.
I don't know *whether* I'll be able to come.
69. wait, weight
You'll have to *wait* till your turn comes.
The doctor said he must not lift any heavy *weight*.

CHAPTER

49

Use of Words as Nouns
and as Verbs

Examples

1. **Object (N)** His sole *object* in life is to earn as much money as possible.
Object (V) They *objected* to the plan on the ground that it was too expensive.
2. **Subject (N)** Space travel is a fascinating *subject*.
Subject (V) The city was *subjected* to repeated bombing raids.
3. **Project (N)** My class is doing a *project* on the First World War.
Project (V) Images are *projected* onto the retina of the eye.
4. **Perfect (N)** In the sentence, "He has passed the examination," the verb is in the present *perfect*.
Perfect (V) After spending several years, she *perfected* her technique.
5. **Conduct (N)** The prisoner was released early because of good *conduct*.
Conduct (V) A guide *conducted* us round the museum.
6. **Contract (N)** You shouldn't enter into a *contract* until you have studied the provisions carefully.
Contract (V) The company had *contracted* to do the repairs by the end of the month.
7. **Contrast (N)** His white hair was in sharp *contrast* to his dark skin.
Contrast (V) Her actions *contrasted* sharply with her promises.
8. **Export (N)** What are the country's chief *exports*?
Export (V) India *exports* tea and cotton to many different countries.
9. **Rebel (N)** She has always been something of a *rebel*.
Rebel (V) He finally *rebelled* against his strict upbringing.
10. **Produce (N)** They prefer dairy *produce*.
Produce (V) The man suddenly *produced* a gun from his pocket.
11. **Record (N)** He kept a *record* of his expenses.
Record (V) The thermometer *recorded* a temperature of 40°C.
12. **Progress (N)** I am making good *progress* at college.
Progress (V) The weather became colder as the day *progressed*.
13. **Import (N)** There is a sharp rise in car *imports*.
Import (V) The country *imported* most of its raw materials.
14. **Increase (N)** Some *increase* in the working hours may be necessary.
Increase (V) He *increased* his speed to overtake the bus.
15. **Present (N)** This book was a *present* from my brother.
Present (V) Colleagues *presented* a gold watch to the retiring chairman.
16. **Contact (N)** She has lost *contact* with her son.
Contact (V) Where can I *contact* you tomorrow?

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17. **Permit (N)** You cannot enter a military base without a *permit*.
Permit (V) We do not *permit* smoking in the office.
18. **Convict (N)** He is an escaped *convict*.
Convict (V) She has twice been *convicted* of fraud.
19. **Address (N)** What's your name and *address*?
Address (V) The card was wrongly *addressed* to our old home.
20. **Ground (N)** He slipped off the ladder and fell to the *ground*.
Ground (V) Our ship was *grounded* in shallow water.
21. **Play (N)** Tennis players need total concentration during *play*.
Play (V) Let's *play* cricket.
22. **House (N)** What time do you leave your *house* in the morning.
House (V) The council should *house* homeless people.
23. **Rain (N)** Don't go out in the *rain*.
Rain (V) It *rained* hard all day.
24. **Range (N)** Most of the students are in the age *range* of 17-20 years.
Range (V) The students' ages *range* from 17-20 years.
25. **Hope (N)** He pinned all his *hopes* on getting that job.
Hope (V) All we can do now is wait and *hope*.
26. **Leave (N)** She's on maternity *leave*.
Leave (V) Many children *leave* school at 16.
27. **Round (N)** The doctors are on their *rounds*.
Round (V) He *rounded* off his political career by becoming Minister of Finance.
28. **Pick (N)** Which one would you like? Take your *pick* (i.e. choose whatever you like)
Pick (V) She *picked* the largest cake on the plate.
29. **Plan (N)** What are your *plans* for the holidays?
Plan (V) I had *planned* for 20 guests, but only 10 arrived.
30. **Mind (N)** All sorts fears passed through my *mind*.
Mind (V) They don't *mind* if I borrow their car occasionally.
31. **Match (N)** She made a good *match* when she married him.
Match (V) The curtains and carpets *matched* perfectly.
32. **Look (N)** They have given the shop a completely new *look*.
Look (V) She *looked* at me and smiled.

Do it Yourself

1. Write two sentences for any two of the words given below to bring out their difference in use when they are used as noun and as verb.
 (a) project (b) subject (c) rebel (d) produce (Apr./May 2002)
2. Select any two from the words given in the box and use them as nouns and as verbs in separate sentences.
 (4 × ½ = 2)
- e.g. Project (a) The *project* (N) was implemented last year.
 (b) The picture was *projected* (V) on the screen.
 Record, contrast, object, convict. (Apr./May 2003)

CHAPTER

50

Expressions of Contrast

1. **But**

- (a) on the contrary; in contrast
Tom went to the party, but his brother didn't.
- (b) however; in spite of this
The restaurant serves cheap but excellent food.
- (c) and at the same time; and on the other hand also
He was tired but happy after the long walk.
- (d) instead
It isn't that he tells lies but that he exaggerates.
- (e) except; otherwise than
I had no alternative but to sign the contract.

2. **On the contrary**

(used at the beginning of a clause or sentence to emphasize that what follows is true and is the opposite of what was said previously)

It doesn't seem ugly to me; on the contrary, I think it's rather beautiful.

3. **While**

- (a) (used to show a contrast)
English is understood all over the world while Turkish is spoken by only a few people outside Turkey itself.
- (b) although, in spite of the fact that
While I admit that there are problems, I don't agree that they cannot be solved.

4. **Still**

(used for talking about an action or opinion that is not expected, because something else makes it surprising)

Although she felt ill, she still went to work.

He's treated you badly; still, he's your brother and you should help him.

5. **On the other hand**

(used to indicate contrasting points of view, opinions, etc.)

On the one hand I want to travel abroad, but on the other (hand) I don't want to give up my job.

6. **However**

(used to comment on a previously stated fact) although something is, was or may be true; nevertheless

She felt ill. She went to work, however and tried to concentrate.

I thought those figures were correct. However, I have now discovered they were not.

7. **Nevertheless**

in spite of this; however; still

The old system had its flaws, but nevertheless it was preferable to the new one.

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8. **Though, although, eventhough**
inspite of the fact or belief that
She won the first prize, though none of us had expected it.
Though he bought the book, he did not read it.
9. **Yet**
at the same time, nevertheless.
She trained hard all year yet still failed to reach her best form.
10. **in contrast:** (used to emphasise that something is clearly different from something else)
In contrast, Sergeant's film is more of a documentary.
11. **at the same time :** nevertheless; yet:
You've got to be firm, but at the same time you must be sympathetic.

Examples**Look at the following sentences.**

Animals can communicate with each other. Plants cannot communicate with each other.

In the second sentence the predicate of the first sentence is repeated, with the addition of 'not'. It is possible to use a short form of the predicate, avoiding the repetition:

Animals can communicate with each other, but plants can't.

Read the following sentences and add a contracted form of the predicate, as in the earlier example:

1. An animal is able to move about freely, but a plant can't.
2. The size and shape of an animal are fixed, but those of a plant aren't.
3. Plants manufacture their own food, but *animals don't*.
4. The structure of a plant cell is rigid, but *that of an animal cell isn't*.
5. A plant cell contains cellulose, but *an animal cell doesn't*.
6. In winter an animal or a bird will move to a warm place, but *a plant won't*.
7. Animals take care of their offspring, but *plants don't*.
8. Plants use sunlight to manufacture food, but *animals don't*.

In the above sentences, we have stated the differences between animals and plants.

Look at the following sentence in which a similarity is expressed using a shortened form of the predicate.

A plant uses food as a source of energy. So does an animal.

Read the following sentences and then add a second sentence expressing the idea of similarity.

1. A plant can digest complex foods. *So can an animal.*
2. An animal can transport food within its body. *So can a plant.*
3. Animals require water for normal life. *So do plants.*
4. Animals produce hormones within the body. *So do plants.*
5. Animals are sensitive to the environment. *So are plants.*
6. Animals can reproduce themselves. *So can plants.*

EXERCISE

1. Frame a sentence using
 - (a) whereas
 - (b) but
- (M.Q.P.)
2. Complete the following sentences by using appropriate expressions of contrast like 'but', 'whereas', etc., to bring out the differences between the two types of technology. Do not use any expression more than once.
(Apr./May 2003)
 - (a) Mass production demands a heavy investment of capital, _____ production by the masses requires a small investment.
 - (b) Production by the masses uses simple tools; mass production _____ employs sophisticated machinery.
 - (c) _____ mass production technology is reserved for the rich and the powerful, the people's technology gives admittance to all.
 - (d) In mass production man is the servant of machines. In production by the masses, _____ man is the master of machines.
 3.
 - (a) _____ mass production makes use of labour-saving technology, production by the masses mobilises the priceless resources which are possessed by all human beings.
 - (b) _____ production by the masses is compatible with the laws of ecology, mass production upsets the ecological balance.
 - (c) In mass production technology, non-renewable resources are self-defeating. In Gandhian philosophy _____ the poor of the world can be helped only by production by the masses.
 - (d) Intermediate technology is vastly superior to the primitive technology. _____, it is much simpler, cheaper and free than the mass production technology.

CHAPTER



Note-making

How to Make Notes?

Note-making involves the ability to

1. identify the key items or the main points in a given text.
2. reduce or condense the main points in a given text.
3. organise the condensed information and represent it in a systematic way.

When Making Notes

1. First read the passage / essay / article once quickly.
2. Note only the most important information.
3. Condense the information before you write.
4. Omit examples and illustrations. You may include them if they are very important.
5. Organise the condensed information in a suitable format. Depending on the contents of the passage / article / essay, choose suitable format.
6. Use only phrases.
7. Select a suitable title and write it at the top of the note.

CONDENSING INFORMATION

Example

Four Indian Peace Keeping Force personnel were killed in a blast caused by a land mine =4 IPKF men killed in mine blast.

1. The figure 'four' is substituted by its corresponding number '4'.
2. The long phrase 'Indian Peace Keeping Force' is substituted by the abbreviation IPKF.

The long word personnel is substituted by a short word 'men'.

The passive verb 'were killed' is substituted by just the past participle form 'killed'.

The long noun phrase 'blast cause by a land mine' is condensed into a shortened one 'mine blast'.

The article 'a' is omitted.

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INFORMATION IS CONDENSED

1. By using numbers instead of figures

Thus

Five is expressed as 5

Thirty seven is expressed as 37

A hundred is expressed as 100

But

A lakh is expressed as a lakh, and not 1,00,000

A million is expressed as a million, and not 1,000,000

2. By using short substitutes for long words

e.g. Short word	Long word
men	personnel
cop	policeman
cut	reduction
hike	increase
stir	strike / agitation
move	attempt
ban	prohibit
poll	election
probe	investigation / enquiry

3. By using Reduced Verb forms

(a) By using past participle form to convey the passive meaning

e.g. killed	instead of	were killed
stabbed	"	was/were stabbed
arrested	"	was/were arrested

(b) By using the 'to-infinitive' to indicate future time

e.g. 'Haryana to free aged life convicts' to mean that the Haryana Government will free aged life convicts.

4. By using Abbreviations and Acronyms

e.g. AIDS	Acquired Immune Deficiency Syndrome
LTTE	Liberation Tigers of Tamil Elam
IA	Indian Airlines
PM	Prime Minister, etc.

5. By using Abbreviations of words

e.g. Medicos medical students

6. By using only the first few letters of the word

e.g. Technical	tech.
Abbreviation	abbr.
Figure	fig.
Examination	exam.
Representative	rep.

7. By using the first few letters and the last letter to avoid ambiguity. This technique is useful when the first few letters alone may create ambiguity
 e.g. Government govt.
 Department dept.
 Engineer engr.
8. By dropping all or most of the vowels in the word
 e.g. Management mngmnt.
 Develop dvlp.
 Possible possbl.
 External extnl.
 Technique - technq.
9. By using symbols
 e.g.
 (a) = to mean equal to/equals/the same as/is synonymous with/is equivalent to
 (b) # to mean not equal to/not the same as/not equivalent to
 (c) ——— to mean leads to/in the direction of/towards/results in
 (d) / to mean therefore/as a result/so/for that reason/it follows that
 (e) + to mean added with/coupled with/and together with
 (f) ——— to mean without
10. By using short Noun phrases instead of long phrases

Examples

- (a) Car bomb blast instead of 'a blast caused by a bomb that was planted in a car'.
- (b) Subsidised food grain instead of 'a scheme to provide food grain at subsidised rates'.
- (c) Aged life convicts instead of 'convicts who have been sentenced to life imprisonment and are aged'.
- (d) Mine blast instead of 'blast caused by explosion of a mine'.

EXERCISE I

I. Read the following passage and make notes on it.

ANAESTHETICS : PAIN KILLING DRUGS

Anaesthetics are drugs causing unconsciousness or insensibility to pain. Their use in modern medicine permits painless surgery during the simplest operation of a few minutes' duration, to the most delicate operation lasting many hours.

Anaesthetics are divided into two broad groups. General anaesthetics and local anaesthetics. General anaesthetics can cause total unconsciousness in the patient by temporarily altering the normal activities of the central nervous system. Local anaesthetics temporarily deaden sensation on a particular, or local, area of the body.

General anaesthetics are usually administered to the patient in one of two ways; inhalation or intravenous injection. In the inhalation method the patient breathes a gas or vapour into his lungs. In the intravenous injection the drug is put directly into a vein.

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Two drugs often used as general anaesthetics in operations of short duration are the liquids vinethene, which causes rapid anaesthesia and trilene, which produces a light, pain-killing effect. Trilene is usually combined with nitrous oxide and oxygen.

Not all surgery requires that the patient be unconscious. For minor operations, only restricted, or local area of the body need be made insensible to pain; thus a local anaesthetic is administered. The local anaesthetic prevents sensations of pain from travelling through the nerves in the drugged area.

Local anaesthesia can be produced through three sites of injection. Infiltration is the injection of the drug into the tissues. Block anaesthesia is produced by the injection of the drug around the main nerves leading to the operation area. These main nerves are blocked from transmitting sensory impulses. Spinal anaesthesia results from the injection of the drug into the space surrounding the spinal cord.

ANSWER**ANAESTHETICS: PAIN KILLING DRUGS**

1. Anaesthetics
 - 1.1 Drugs causing
 - 1.1.1 unconsciousness
 - 1.1.2 insensibility to pain
 - 1.2. Used for painless surgery
2. 2 Grps
 - 2.1 Gen. Anaesthetics – cause total unconsciousness
 - 2.2 Local anaesthetics – deaden sensation
3. 2 ways of admnstrng
 - 3.1 Patient – breathes gas vapour
 - 3.2 Injected – intravenously
4. Local ansthic
 - 4.1 Used for minor operations
 - 4.2 Prvnts pain sensations
 - 4.3 Produced through 3 injection sites
 - 4.3.1 infiltration – into tissues
 - 4.3.2 block Anaesthesia - around main nerves
 - 4.3.3 spinal Anaesthesia- injection into spinal cord

EXERCISE II

II. Read the following passage and make notes on it.

THE ADMAN'S TASK

The ultimate aim of all advertising is to sell the commodity but in order to achieve this there are a few obstacles which the adman has to overcome. First of all, prospective buyers are likely to be reading the newspaper or magazine not because of its advertising material but because of its editorial material; moreover, round about half of the publication is likely to consist of adverts, all of them competing for the reader's attention. The first task of the adman, then is to make sure that his advert is noticed. Once the reader's attention has been caught, the advert should also hold his attention and it should convince him that the subject of this particular advert is of interest to him. Furthermore, the advert has to convince the reader that the commodity will satisfy some need or create a need which he has not felt before. Finally, it is not enough that the prospective customer should come to feel a need for the product in general; the advert must convince him that the particular brand advertised has some qualities which will make it superior to other similar brands. In addition, the ideal advert should be constructed in such a way that as much as possible of its message will get across even to the reader who merely notices it but decides not to read it.

ANSWER**THE ADMAN'S TASK****THE ADMAN'S TASK**

1. Aim of advtsng – to sell commodity
2. Advt. should
 - 2.1 Ensure adv. noticed
 - 2.2 Hold reader's attention
 - 2.3 Convince that
 - 2.3.1 Sub of particular adv. concerns him
 - 2.3.2 Commodity will
 - 2.3.2.1 satisfy some need
 - 2.3.2.2 create a need unfelt before
 - 2.3.3 Advertised brand is superior to other brands
 - 2.4 Put message across even to uninterested reader

EXERCISE III**III. Read the following passage and make notes on it.****LINE ORGANISATION**

A line organisation is one in which there is a direct flow of authority from the top executive to the rank and file employee, usually through several lesser executives at various managerial levels. It is sometimes called the military type because each person has someone immediately over him. Although modern armies have become too complex to rely exclusively on a line organisation, they still use the direct chain of command.

There are many advantages inherent in this form. It is simple and easy to understand. Responsibility is clearly defined and each worker, regardless of his rank, reports to but one individual. This simplifies discipline. Decisions can usually be rendered quickly and executives must produce or be replaced. As long as each employee carries out the orders of his immediate superior, he is relatively free from criticism, which makes for harmonious working conditions.

There are, however, many disadvantages to the line type of organisation. Each superior needs to be a master of many diverse angles to his job. He should be able to handle his men, keep the machines running, invent new processes, recommend pay increases and train new employees. Frequently he may be outstanding at one or two of his numerous responsibilities and very poor at others. The line organisation also has the disadvantage of placing so much final authority and direction at the top that the individual concerned, instead of devoting his attention to working out important matters of policy and general practices, finds most of his time devoted to reading reports and rendering decisions on operating problems. Coordination of the different 'lines' is difficult to achieve, particularly in a complex, large-scale industry.

ANSWER**LINE ORGANISATION**

1. Line Organisation
 - Authority flowing directly from top executive to last employee through several lesser executives.
2. Advantages
 - 2.1 Simple and easy to understand
 - 2.2 Responsibility clearly defined
 - 2.3 Each worker reporting to one individual
 - 2.3.1 Discipline simplified
 - 2.4 Decisions rendered quickly
 - 2.5 Each employee obeying immediate superior
 - 2.5.1 Relatively free from criticism
 - 2.5.2 Making for harmonious working condition
3. Disadvantages
 - 3.1 Each superior to be master of diverse angles
 - 3.2 Should be able to
 - 3.2.1 Handle men
 - 3.2.2 Keep machines running
 - 3.2.3 Invent new processes
 - 3.2.4 Recommend pay increase
 - 3.2.5 Train new employees
 - 3.3 Outstanding at some responsibilities and very poor at others
 - 3.4 Final authority and direction placed at the top so much that
 - 3.4.1 The individual concerned devoting most of his time to reading reports and rendering decisions on operating problems
 - 3.5 Co-ordination of different lines difficult to achieve in a complex, large-scale industry

EXERCISE IV

IV. Read the following passage and make notes on it.

STAGES OF MAN'S EVOLUTION

Man, at first, seemed to have no very promising outlook in the general struggle for existence. He was still a rare species, less agile than the monkey in climbing trees to escape from wild beasts, almost destitute, no natural protection against cold in the way of fur, hampered by his long infancy, and with difficulty securing food in competition with other species. His only initial advantage was his brain. Gradually, this one advantage proved cumulative and transformed him from a hunted fugitive into the Lord of the Earth. The early steps in this process are pre-historic and their order is conjectural. He learned to tame fire, which had presented dangers similar in kind, though less in degree, to those of the release of nuclear energy in our own day. Fire not only improved his food, but by being kept burning at the mouth of his cave ensured his safety while he slept. He invented spears and bows and arrows. He dug concealed pits in which infuriated mammoths hopelessly struggled. He domesticated animals. And at the dawn of history discovered the uses of agriculture.

ANSWER**STAGES OF MAN'S EVOLUTION**

1. Condition of earliest man
 - (a) A rare species
 - (b) Been struggle for existence
 - (c) Disadvantaged in competition for survival
2. Disadvantages
 - (a) Not agile - easily hunted by wild animals
 - (b) No natural protection against weather
 - (c) Long infancy - chances for death or being killed more
 - (d) Difficulty in securing food - uneven competition with more powerful animals
3. One initial advantage: Brain
4. Progressive use of brain in
 - (a) Use of fire
 - (i) for better food
 - (ii) for protection against wild animals
 - (b) Invention of weapons
 - (i) spear
 - (ii) bow and arrow
 - (c) Digging concealed pits to trap angry mammoths
 - (d) Domesticating animals
 - (e) Use of agriculture
5. Cumulative progress making man Lord of the Earth

EXERCISE V

V. Read the following passage and make notes on it.

CREATIVE ACTIVITY

I would say that there is a physiological need, in living matter, to create. The laws of nature are such that nature is running down all the time, things are becoming disorderly all the time and living matter is constantly opposed to this. It is constantly trying to create order. The word 'Creation' means "the creation of order", the finding in nature of links, of likeness, of hidden patterns which the living thing—the plant, the animals, the human mind—picks out and arranges.

To my mind, it is a mistake to think of creative activity as something unusual. I hold that the creative activity is normal to all living things. Creation is the finding of order in what was disorderly and this is a characteristically human activity.

So I would say that the ability to work creatively in more fields than one is a historical accident, which pertains to some people who have had, by chance or by the nature of their environment, the skill needed in several fields.

ANSWER**CREATIVE ACTIVITY**

1. Creative activity
 - (a) A natural impulse of living things
 - (b) For creation of order
2. Creative activity a physiological need
 - (a) In nature things always run down
 - (b) Things become disorderly
 - (c) Living things opposed to disorder & running down of things
3. For creating order, need to find in nature
 - (a) Links
 - (b) Likeness
 - (c) Hidden patterns
4. Creative activity
 - (a) Normal to all living things
 - (b) "Typical human activity"
5. Possible in more than one field
6. Skill for creative activity in many fields had by a few
 - (a) By chance
 - (b) By the nature of their environment
7. Such activity a historical accident

CHAPTER



Check Lists

A check list is a list of items that people use to make sure that everything is in order before any important activity is taken up.

Examples**I. Here is a sample check list. It can be used when one wants to go on a journey or trip by car.**

- | | | |
|--|-----|----|
| 1. Is there water in the radiator? | YES | NO |
| 2. Is there petrol in the tank? | YES | NO |
| 3. Are the brakes in good condition? | YES | NO |
| 4. Are the tyres properly inflated? | YES | NO |
| 5. Is the oil level in the engine right? | YES | NO |
| 6. Has the driver been informed about the trip? | YES | NO |
| 7. Have the snacks been packed? | YES | NO |
| 8. Has the road tax been paid? | YES | NO |
| 9. Has the insurance premium been paid? | YES | NO |
| 10. Has the driving licence been taken? | YES | NO |
| 11. Have the up and down expenses been arranged? | YES | NO |

II. You have decided to go on a weeklong tour with all your family members. Prepare a checklist that consists of eight items that are to be checked before you leave the house.

- | | | |
|--|-----|----|
| 1. Have all the lights been switched off? | YES | NO |
| 2. Has the television set been turned off? | YES | NO |
| 3. Have all the water taps been turned off? | YES | NO |
| 4. Have all the clothes been packed
(including warm clothing) | YES | NO |
| (a) for self | YES | NO |
| (b) for mother | YES | NO |
| (c) for father | YES | NO |
| (d) for younger brother | YES | NO |
| (e) for younger sister | YES | NO |
| 5. Has the watchman been informed? | YES | NO |
| 6. Have snacks been packed? | YES | NO |
| 7. Has enough money been taken? | YES | NO |
| 8. Has the conveyance been arranged? | | |
| (a) to go to Ooty | YES | NO |
| (b) to return home | YES | NO |

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- | | | |
|---|-----|----|
| 9. Have rooms been reserved in a hotel? | YES | NO |
| (a) Name of the hotel | YES | NO |
| (b) Address | YES | NO |
| (c) 2 double rooms with bath attached? | YES | NO |
| 10. Has the confirmation letter been received from the hotel? | YES | NO |

III. Check list for safety of temporary structures such as shamianas and tents.

- | | | |
|--|-----|----|
| 1. Is all combustible material used in the structure treated with a fire-retardant solution? | YES | NO |
| 2. Is the main structure put up with at least 100mm diameter wooden posts preferably of sal? | YES | NO |
| 3. Is the minimum height of the ceiling three metres? | YES | NO |
| 4. Are all fabrics, decorative materials and coil ropes dipped in a fire-retardant solution before use? | YES | NO |
| 5. Is a clear space of three metres kept on all sides between the adjacent buildings? | YES | NO |
| 6. Has care been taken not to erect temporary structure beneath live electrical lines or near railway lines, electrical substations or chimneys? | YES | NO |
| 7. Have all sides of the temporary structure been kept open? | YES | NO |
| 8. Is there provision for at least two separate, remotely located exits? | YES | NO |
| 9. Is there a clear indication of the Exit sign in plain legible letters? | YES | NO |
| 10. Is the exit light adequately illuminated with a reliable light source? | YES | NO |
| 11. Is the temporary lighting of the structure installed by a licensed electrical engineer? | YES | NO |
| 12. Do insulation and the installation conform to IS 1646 1982 code of Practice for Fire Safety of Buildings (General) : Electrical Installations? | YES | NO |
| 13. Are the portable incandescent lights placed on securely fixed separate stands? | YES | NO |

IV. You are planning a trip with your family by train to Palani. Prepare a check list of arrangements to be made

- | | | |
|-----------------------------|-----|----|
| 1. Onward Train Journey | | |
| Train reservation confirmed | YES | NO |
| II class A.C. | YES | NO |
| 5 adults | YES | NO |
| 1 child | YES | NO |

- | | | |
|--|-----|----|
| 2. Dindigul to Palani | | |
| Palni - taxi with A.C. | YES | NO |
| Taxi agency name | YES | NO |
| Taxi registration number | YES | NO |
| 3. Stay in Palani | | |
| Name of the Hotel | YES | NO |
| Two family rooms with A.C. | YES | NO |
| Hot water, shower bath | YES | NO |
| Veg. meals | YES | NO |
| 4. Darshan person to contact | | |
| (i)at the hotel | YES | NO |
| (ii)at the Devasthanam | YES | NO |
| (iii)confirmation letters | YES | NO |
| 5. Visting other temples taxi arranged | YES | NO |
| 6. Return to hotel in Palani -arrangement made | YES | NO |
| 7. Departure from Palani to Dindigul taxi arranged | YES | NO |
| 8. Dindigul to Erode train reservation confirmed | YES | NO |

V. Checklist for College Day function

- | | | |
|---|-----|----|
| 1. Has the Annual Day date been fixed? | YES | NO |
| 2. Has the chief guest been decided? | YES | NO |
| 3. Have the invitation cards been printed and distributed? | YES | NO |
| 4. Is the temporary pandal put up? | YES | NO |
| 5. Have the prize winners been informed? | YES | NO |
| 6. Has the compering team been formed? | YES | NO |
| 7. Is the committee for stage decoration appointed? | YES | NO |
| 8. Is the refreshments committee formed? | YES | NO |
| 9. Has the memento been bought for the chief guest? | YES | NO |
| 10. Have arrangements been made for light and sound system? | YES | NO |
| 11. Has the transport been arranged? | YES | NO |
| 12. Has dinner been arranged for the V.I.P.'s? | YES | NO |

VI. You are a company executive. You are proceeding on a business trip abroad. Prepare a checklist of at least eight important items to ensure the smooth functioning of the company in your absence.

- | | | |
|---|-----|----|
| 1. Has the Power of Attorney been given to the Chief Manager? | YES | NO |
| 2. Has the bank been informed? | YES | NO |
| 3. Have all the orders been executed? | YES | NO |
| 4. Is the day book upto date? | YES | NO |
| 5. Have all the pending bills been paid? | YES | NO |

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- | | | |
|--|-----|----|
| 6. Have proper instructions been issued to all the staff? | YES | NO |
| 7. Is there enough money in the bank to make payments? | YES | NO |
| 8. Have the share holders been informed? | YES | NO |
| 9. Has the Auditor been informed? | YES | NO |
| 10. Is the office aware of my address and contact number abroad? | YES | NO |

Do it Yourself

1. You have decided to go on a weeklong tour with all your family members. Prepare a checklist that consists of eight items that are to be checked before you leave the house. (M.Q.P.)
2. You are a company executive. You are proceeding on a business trip abroad. Prepare a checklist of at least eight important items to ensure the smooth functioning of the company in your absence. (Apr./May 2002)
3. Imagine that you have to go to Bangalore to attend a job interview. Prepare a checklist of eight most important activities that you would like to do before leaving for the interview. Give a proper title to your list. (Apr./May 2003)
4. Your family is about to leave for Ooty on a two-week holiday. Your father has asked you to prepare a checklist of things to be done before you leave the house. Prepare an eight-item checklist to give to your father. Remember to give a title to your checklist. (Apr./May 2004)
5. Imagine that you have to go to New Delhi to appear for an interview. Make an eight-item checklist with a proper title for your reference. (Apr./May 2004)
6. You are the College Union President arranging the valedictory function of the union at the college. Write a checklist of at least 8 important items to be taken care of for the smooth conduct of the function. (Nov./Dec. 2004)

CHAPTER



Reporting

DEFINITION

A report is a major form of professional communication. It is used extensively by government, business and industry as well as in professions such as science, engineering and medicine. It facilitates decision-making and acts as an instrument for nurturing the health of an organisation and promoting its growth. A report is also used for the study of existing procedures and practices as well as for launching new projects and assessing the progress of on-going projects. It is always written to meet a demand or to fulfill a requirement. By its very nature therefore, a report has to convey information and ideas accurately and efficiently. Usefulness, clarity and economy are its primary qualities. A report is not written to express a feeling, to convey an atmosphere or amuse as some other forms of communication do. A professional writes a report not because he has an impulse to write but because the situation demands it. Among many qualities that a professional should possess, the ability for effective communication is one. The skill of report writing can be acquired by mastering the craft of writing and learning the scientific process of investigation, analysis and interpretation.

We may define a professional report as a formal communication written for a specific purpose, conveying authentic information to a well-defined audience in a completely impartial and objective manner and containing recommendations, if required.

Preparatory Steps

A report is the result of detailed planning and meticulous execution of the plan. When you are asked to write a report you should first understand the terms of reference which would spell the purpose and scope of the report. Audience determination is the next preparatory step which would help you to give a proper direction to your writing. Very often the collection of data could be required before you draft an outline of the report.

Recommendations

Recommendations are clearly derived from the conclusions and indicate future action, application of material, need for further investigation or proposed programme, etc. These form the bases for decision making. If the number of recommendations is large they are listed in descending order of their importance. Occasionally they are accompanied by some explanation. In very short reports conclusions and recommendations are presented together rather than in separate sections.

INDUSTRIAL REPORTS

Report on an Industrial Visit

Introduction

The efficiency and overall performance of an engineer in his professional career depends on his strong theoretical base coupled with adequate practical exposure to the state-of-the-art technology. The practical difficulties encountered and the frequently used methods / standards can be better understood by an aspiring engineering graduate only by visiting some industries pertaining to his branch of study.

This aspect of getting practical experience is fulfilled by Industrial visits organised by the engineering colleges as a part of their course curriculum.

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Steps Involved

- (i) A faculty member who is in-charge of the visit along with the class representative shall finalise the names of the companies to be visited. After that the geographical area which has a higher concentration of industries of its sort is chosen.
- (ii) Formal letters seeking permission shall be sent to selected industries to get prior appointments.
- (iii) Based upon the dates of permission, a detailed schedule shall be prepared and submitted to the Heads of the Institution/Principal to seek his permission for the same. The schedule shall contain the following details:-
 - (a) Branch/Year/ Semester:
 - (b) Period of visit:
 - (c) Place(s) to be visited:
 - (d) Time of departure:
 - (e) Time of arrival:
 - (f) Mode of transportation:
 - (g) Board and lodging:
 - (h) Time schedule:

S. No.	Time	Details	Persons to contact

- (i) Budget:
- (j) Advance required:
- (k) Details of known persons in the areas to be visited with contact numbers:
- (l) Details of the accompanying staff:

IMPORTANCE OF INDUSTRIAL VISITS

As mentioned earlier, Industrial visits expose the students to the practical aspects of what they learn in theory and hence enhance their understanding. These visits help them to interact with industrial people which throws light upon what the industrial expectations are. It provides a congenial atmosphere for mutual sharing of technical know-how among their classmates/friends. Moreover, industrial visits promote love and respect for fellow beings, structures their social behaviour and nurtures virtues like tolerance, responsibility and caring for others.

Report on Industrial Visit

After the Industrial visit a report shall be submitted by each student describing what he has learnt. The report shall contain the following details:

- I. Synopsis with basic details
Names of the Companies visited, visiting dates, etc.
- II. (a) Introduction to the Company
(b) Manufacturing/Trading activities
(c) Customer base/Turnover
(d) Technical details of the products manufactured/ manufacturing processes/working principles with illustrations, diagrams, layouts, tables, graphs, etc.
(e) Technical description of machinery/products
(f) Industrial standards in use
(g) Quality policy—details of ISO and other Certifications obtained
(h) Applications/Advantages of the products manufactured.
- III. Conclusion
Benefits derived from the industrial visit.

Examples

1. A Sample Industrial Report

I SYNOPSIS

I am a IIIrd year Mechanical Engg. student of _____ college. I visited ABC and several other companies from 17-10-2005 to 20-10-2005 along with my classmates. The visit was very useful in exposing me to the practical aspects of my field of study. I have given details of the companies visited, products manufactured, processes involved, along with a report in the following pages.

II COMPANY DETAILS

ABC Company is engaged in production and trading of cutting tools. It was established in the year 1978 and has gained a high level of expertise in the Cutting Tool Industry.

They have a network of offices in India as well as an extensive dealer and distributor network spread across the country. Their international dealer and distributor network spans the globe with trade partners at all strategic locations in the world. They manufacture products as per the ANSI, DIN, JIS and ISI Standards. ABC Company is one of the leading manufacturers of HSS precision cutting tools.

Manufacturing Activities

Works 1—Manufacturing Drills and Taps

Works 2—100% Export Oriented Unit

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Trading Activities

ABC Company is engaged in trading of a comprehensive range of cutting tools catering to global markets.

Import and export of carbide & HSS twist drills, reamers and other shank type tools.

Export of diamond dressers, EDM wire and other related products.

Customer Base

Besides having a wide customer base in India, they also export their products to most European and Asian countries and also to South Africa and Australia. The major industries they cater to are—Automobile industry, Aerospace and Aircraft industry, Watch case industry, Tyre industry and other Engineering industries.

Quality Policy

ABC Company is strongly committed to supplying quality products to the customers. As such, all products manufactured by this company conform to international standards. Their quality assurance department is staffed by a team of well-qualified and experienced engineers to ensure that the products go through stringent testing and inspection at all stages of purchase, production and despatch.

The state-of-the-art production facilities and quality assurance system guarantee consistent quality of their products. They manufacture drills to ANSI, DIN, JIS, ISO, BIS standards and also to specific customer requirements.

Typical Applications

These include IC Engine valves, Twist drills, Taps, Reamers, Propeller shafts, Axle housings, Hydraulic hose end fittings, Steering columns, CV Joints, Fasteners, etc.

III CONCLUSION

The Industrial visit helped me a lot in enriching my knowledge. Now I have a clear understanding of principles of various cutting machines. I have also learnt about the uses of gauges/ calibrators for inspection purposes. As I am now aware of the industrial expectations from graduating engineers, I will work in that direction to become a full-fledged engineer.

I take this opportunity to thank the Management, the Principal, Head of the Department, and the staff who accompanied us, especially for their guidance and support. I am grateful to the staff of the ABC Company for their whole-hearted guidance and encouragement during the visit. I also extend my gratitude to my classmates for their active participation and cooperation in making this Industrial visit a memorable one.

REPORT ON ACCIDENT IN A FACTORY

2. Imagine that you are a Safety Engineer in a car manufacturing factory. There has been a fire accident in the factory and one of the workers has been badly hurt and is in the hospital. Your General Manager has asked you to send him a detailed report on the accident together with your recommendations for averting a similar accident in the future. Prepare a report accordingly. (Apr./May 2003)

Answer

A REPORT ON FIRE ACCIDENT IN THE FACTORY

BY

S. Rajendran

Safety Engineer

Hindustan Motors

Mumbai

May, 2003

Hindustan Motors

Mumbai

To: General Manager

From: Safety Engineer

Ref. HM/37/B

20th May, 2003

Subject: Report on Fire Accident in our factory.

Please refer to your Memo. No. HM/37/B dated 15th May, 2003 asking me to send you a detailed report on the fire accident that took place in our factory at 11 p.m. on 14.5.2003 together with my recommendations for averting a similar accident in the future.

The following is a detailed report on the fire accident.

1. Due to a short circuit there was a fire accident around 11 p.m. on 14.5.2003. It seems enough precautions and preventive measures had not been taken to provide for safety in such circumstances. The fire spread rapidly burning and damaging several materials kept in the store room which is close to the place where fire broke out.
2. Mr. S. Vijay, Mechanic, who was on duty, sustained serious injuries and was rushed to the hospital. His condition is critical.
3. Three employees on duty, Mr. J. Gopal, Store Keeper, Mr. A. Ashok, Store Clerk and Mr. B. Vijay, Night Watchman, sustained minor injuries and were given first aid.

The following recommendations are made for averting similar accidents in the future:

1. There are two main reasons for fire due to Electricity. (i) Over heating of Electrical equipment. (ii) Electrical short circuit which causes sparks and flashes.
Temporary wiring and overloading of equipment should be avoided. Only approved electrical equipment should be used in the fire hazard area. Proper earthing and overload protection devices should be installed to prevent electrical faults. Electrical installations should be periodically checked by a competent person.
2. The second main cause of industrial fire accident is the presence of carelessly discarded cigarettes, cigars, beedies and other smokes and half-burnt live match sticks. Smoking should be strictly prohibited. "No smoking" area should be marked with conspicuous signs and the rules should be enforced very rigidly.
3. Gas cutting and welding operations should be avoided near areas where highly inflammable or highly combustible materials are stored or handled.
4. Fire fighting equipment should be provided and maintained for protection against fire.
5. All live wires should be isolated in such a manner that they cannot be touched. The live wires should be insulated with a non-conducting material so as to prevent the two or more wires in a circuit from touching one another and causing the well known "short circuit".
6. All practical measures should be taken to prevent outbreak of fire and its spread both internally and externally.
7. The first precaution to be taken in case of fire in a factory is the provision and maintenance of a proper means to escape. Proper corridors, staircases, exit doors and all other means of passage by which the people in the building may reach a place of safety outside should be provided.

(sd.) K. Rajan,
Safety Engineer.

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Note: If the report is in the form of a letter, the format is as follows

HINDUSTAN MOTORS
27 Crescent Road, Mumbai –1

To 20th May 2003

Dear Sir,

Sub :

Ref :

Yours faithfully,

(K. Rajan)

Safety Engineer.

(M.Q.P.)

3. Write a report on the road accident you've witnessed in about 200 words.

ANSWER

A REPORT ON ROAD ACCIDENT

It all happened so suddenly and unexpectedly. The date was 2.11.2003 and it was a Sunday. The time was 11 p.m. and the place was P.S. Park, Erode.

There was a head-long collision between a bus and a lorry. The bus was coming from the Railway Station and lorry was going towards the Railway Station. The bus was over-crowded. Both the bus and the lorry were running at a high speed. The lorry driver died on the spot. The bus driver sustained serious injuries and was rushed to the Govt. Hospital. Ten passengers got seriously hurt and fifteen passengers sustained minor injuries. They were all admitted in hospitals and nursing homes. Of course, they were given first aid but perhaps that was not enough.

Within minutes the police arrived on the spot. Press reporters and media persons also arrived with their cameras. Inquiries revealed that the lorry driver was fully drunk and had lost control. The bus driver was in a hurry to reach the destination. Also, there was a brake failure and he could not suddenly stop the bus.

To avert such an accident in the future the following recommendations are made for public safety.

1. Drivers should not be permitted to drive under the influence of liquor.
2. There should be speed limit and those who exceed the prescribed speed limit should be punished.
3. Vehicles must be checked and kept in good running condition as a safeguard against mechanical failure and other such problems.
4. There should be speed-breakers at important places to prevent over speeding.
5. Over-crowding in buses should not be permitted. Those found guilty should be severely dealt with.
6. Police personnel should be posted at important places, especially road junctions, for road safety.

Do it Yourself

1. You are the works manager in Industrial Gases Limited where LPG cylinders are filled for utilisation by the customers. Write a report to the Chairman of the company about an accident that happened in the LPG filling section in which five workers are seriously injured. Suggest the remedial measures also to avert such happenings in future.
(Nov./Dec. 2004)

CHAPTER



Technique of Formatting, Drafting and Revising

In technical writing, what you say is important and how the text looks on the page is also equally important. It is better not to have excessively long paragraphs and pages full of wall-to-wall words.

People read technical writing (memos, letters, reports or instructions) for information about a product or service. Your readers want you to provide the information quickly, information they can understand at a glance. Reading word after word, paragraph after paragraph, takes time and effort, which most readers cannot spare. Good technical writing allows readers rapid access to information.

Your document is a visual representation of what you want to express. To achieve effective document design, you'll need to provide your readers visual (a) organisation (b) order, (c) access, (d) variety.

Organisation

Chunking The easiest way to improve your document design is to break text into smaller chunks of information, a technique called chunking. This helps your readers understand the overall organisation of your correspondence.

Chunking is accomplished by using any of the following techniques:

- (i) **Heading** (one to three words that summarise the content of a unit of information)
- (ii) **White space** (horizontal spacing between paragraphs)
- (iii) **Rules** (horizontal lines typed across the page to separate units of information)

Order

A reader wants from your text a sense of order. What is most important on the page? What is less important? What is least important? You can arrange ideas in their order of importance. There are various techniques to achieve this goal.

- (i) **Typeface:** There are many different typefaces (or fonts), either serif or sans serif typeface. Serif type has decorative strokes at the edges of each letter and sans serif omits the decorative lines.
- (ii) **Type size:** Another way is through the size of your type. A primary, first-level heading should be larger than subsequent, less important heading and so on. For example, a first-level heading could be in 18-point type. The second-level heading would then be set in 16-point type, and so on.
- (iii) **Density:** Type density is created by boldfacing or double-striking words.
- (iv) **Spacing:** Another technique is the amount of horizontal space used after each heading.
Position: Your headings can be centered, aligned with the left margin, indented or out dented. But there should be consistency in your arrangements.

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Access

To help readers access information rapidly, you can use any of the following highlighting techniques.

- (i) **White Space:** You can create vertical space by indenting. White space helps the readers to focus on the indented points you want to emphasise.
- (ii) **Bullets:** Bullets, used to emphasise items within an indented list, are created by using asterisks (*), hyphens (-), a lower case “o”, degree signs (°), typographic symbols, etc.
- (iii) **Boldface:** Created on a computer or by double striking on a typewriter, boldface text emphasises a key word or phrase.
- (iv) **All caps:** The technique of capitalising text is an excellent way to highlight a WARNING, DANGER, CAUTION, or NOTE.
- (v) **Underlining:** One underline word or phrase will call attention to itself and achieve reader access.
- (vi) **Italics:** Italics and underlining are used similarly as highlighting techniques.
- (vii) **Numbering:** This shows sequence or importance and allows for easy reference.
- (viii) **Windowing:** If you indent your key points and enclose them in a box, you’re windowing. Windowing draws your reader’s attention to an idea, thus making it more emphatic.
- (ix) **Fills:** You can further highlight windowed text through fills (lines, patterns, waves, bricks, gradients, and shadings in a text box).
- (x) **Colour:** Another way to make key words and phrases leap off the page is to colour them. *Danger* would be red, for example, *Warning* orange and *Caution* yellow.
- (xi) **Inverse type:** You can also help readers access information by using inverse type-printing white on black, versus the usual black on white.

Variety

Your reader might profit from more variety. For example, you might want to use a smaller or larger paper, to vary the weight of your paper, using 10-pound, 12-pound, or heavier card stock, or even to print your text on colour paper.

You can vary the document design by printing your text horizontally, by using more columns, by separating columns or texts, and also by using graphics. It is rightly said that a picture is often worth a thousand words.

Drafting

Prepare the first draft without caring much for the mechanics of writing. Revise the draft carefully. Delete a word, phrase, sentence or paragraph which does not add any meaning to the point under discussion.

Choice of Words and Phrases

The ultimate goal of good technical writing is clarity. Clarity can be achieved by choosing the right words and phrases.

1. Prefer concrete to abstract words

Concrete words tend to be more forceful, direct and exact than their abstract counterparts. Abstract words have a tendency to be general and vague.

2. Prefer specific to general words

The use of specific words makes the writing clearer and immediately creates an image in the mind of the reader.

General

- (a) reside
- (b) volume

Specific

- stay
- book

(c) employ	use
(d) compensation	pay
(e) endeavour	try
(f) demonstrate	show
(g) discontinue	stop
(h) terminate	end
(i) aggregate	total
(j) component	part

3. Use plain words

The use of plain words saves time - the writer's, the typist's and the reader's. A list of such words is given below.

Long and unfamiliar

- (a) initiate
- (b) dwell
- (c) expedite
- (d) utilisation
- (e) viable
- (f) metropolis
- (g) discern
- (h) optimum
- (i) purchase
- (j) verbose

Plain and familiar

- start
- live
- hurry up
- use
- practical
- city
- see
- best
- buy
- wordy

4. Avoid cliché and jargons.

5. Avoid using foreign words and phrases.

6. The use of acronyms and abbreviations should also be avoided in technical writing.

7. Avoid redundancy

Redundancy may be either the use of unnecessary words or needless repetition of an idea. In the phrases below the superfluous words are italicized.

Basic fundamentals, refer *back*, repeated *again*, returned *back*, advance *forward*, *humorous* joke, true *fact*, *absolutely* essential, *actual* experience, *advance* planning, enclosed *herewith*, etc.

8. Active voice

Sometimes the change of the passive voice into the active voice reduces the number of words improves the sentence.

America was discovered by Columbus. (Passive voice)

Columbus discovered America. (Active voice)

Sentence Structure and Length

A sentence may be the statement, question-word questions, yes/no questions, commands and exclamations. In your report most of the sentences would be statements, simple, compound or complex sentences.

Paragraph Structure and Length

Paragraphing breaks the materials into related subdivisions for the reader's better understanding. Further it is always good to break down complete statements into lists. In general it has been found that short, simple sentences are effective. They promote easy reading. Be concise; it saves time and aid comprehension.

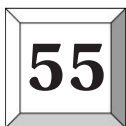
Revising

To ensure that your report is effective, revise your draft as follows.

1. **Add detail for clarity and/or persuasiveness:** If an idea within your report is not fully clear and complete, add another quotation, or additional information to make your point clear.
2. **Delete dead words and phrases:** Your goal is to communicate clearly and concisely. Delete words that serve no purpose. In addition, revise your draft for clarity of focus.
3. **Simplify your words for easy understanding:** The goal of technical writing is to communicate, not to confuse. Write to be understood.
4. **Ensure effective organisation:** Be consistent in whatever you write and in whatever way you write. Your report should be organised in a systematic way. Whatever format you use, you should be consistent.
5. **Reformat your text for reader friendly ease of access:** Use headings and sub-headings, graphics, itemised lists and white space for easy understanding.
6. **Correct any errors:** You must check for accuracy, your grammar, mechanics, quotations, paraphrasing, summarising, works cited, etc.

(Courtesy: Sharon J. Gerson and Steve M. Gerson : *Technical Writing : Process and Product*. Krishna Mohan & Meera Banerji, *Developing Communication Skills*)

CHAPTER



Structure of Technical Reports

A technical report has the following sequence

1. Cover
2. Title page
3. Acknowledgements
4. Table of contents
5. Abstract and summary
6. Introduction
7. Discussion or description
8. Conclusions
9. Recommendations
10. Appendix
11. List of references
12. Bibliography
13. Glossary
14. Index

COVER

To protect the manuscript against damage, a report is usually bound in a cover. A neat and attractive cover gives a report a professional look. It should contain only essential information, namely, the report number and its classification if any, name of the organisation, title of the report, name of the author and the date.

TITLE PAGE

It is the first right-hand page of the report. In addition to all the information in the cover it contains the following: project or job number, if any, the name and designation of the primary recipient, approvals and distribution list, if necessary.

ACKNOWLEDGEMENTS

It is necessary to acknowledge any help, assistance or guidance received from different persons or organisations. In doing so you should be sincere and courteous and have a variety in your expressions. A few commonly used expressions are given below:

- (i) We thank...
- (ii) We are grateful...
- (iii) We are indebted...

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- (iv) We are highly obliged to...
- (v) Thanks are due to ...
- (vi) We are particularly grateful...
- (vii) We should like to thank, etc. ...

The reasons for thanking the person or persons are also stated. For example, 'we are grateful to Mr. John for his useful guidance, etc.

TABLE OF CONTENTS

The main function of the table of contents is to help the reader locate specific material in your report. For proper organisation you should follow the decimal numbering system in listing the topics and sub-topics.

ABSTRACT AND SUMMARY

An abstract is a clear, concise condensation of the purpose and the most important results of the project. It states what the report is all about, what has been accomplished and the significance of the achievement. A summary on the other hand is the entire report in a nutshell. It has a beginning, stating why the project was carried out and why the report was written; a middle, highlighting the most important features of the report and an end giving conclusions and recommendations.

INTRODUCTION

An introduction states the subject and the purpose of the project, gives the background, describes the basic procedure or methods followed for the collection of data and their sources, defines scope pointing out the limitations or qualifications of the project; and indicates the value or importance of the project.

DISCUSSION OR DESCRIPTION

The function of this element is to discuss or describe the main business of the report. It naturally therefore contains the data in an organised form, often in tables, which are analysed. These are then evaluated and judgements are formed and they ultimately lead to the formulation of conclusions.

CONCLUSIONS

To give a sense of finality and completeness to the discussion or description, it is a common practice to make certain remarks at the end of a piece of writing. Their function is merely to bring the discussion smoothly to a close, giving the reader a psychological assurance of having come to the end.

RECOMMENDATIONS

Recommendations, when given, are clearly derived from the conclusions and indicate future action, application of material, need for further investigation or proposed programme, etc.

APPENDIX

The appendix is a useful element of the report. Each appendix should be a separate unit and should be numbered as Appendix A, Appendix B, etc. The kinds of material that are generally included are as follows: derivations of equations, detailed calculations, copies of exhibits, data sheets, questionnaires used in the investigation, list of questions used for interview, sample of forms, detailed descriptions of equipment or procedure, tables and figures which would not conveniently fit into the body of the report, etc.

LIST OF REFERENCES

If you have used or quoted in your report matter from any published or unpublished source, you should give credit to the author(s) concerned by citing them in the text and listing them at the end of your report. This list is known as the list of references. The entries in the list with full bibliographical details are made in the alphabetical order or in order of citation in the text.

BIBLIOGRAPHY

A bibliography is a list of sources consulted. It is serially numbered and the entries in it are made in the alphabetical order. The details appear in the same sequence as in the list of references.

GLOSSARY

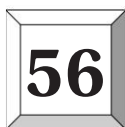
A glossary is a list of technical words or terms used by the reporter in a special sense. The sole purpose of a glossary is to help the reader understand clearly what you say in the report.

INDEX

An index helps the reader locate a topic or a sub-topic or any other material easily. The entries in the index are arranged in an alphabetical order and are cross referenced.

(Source: Krishna Mohan and Meera Banerji : *Developing Communication Skills*, pp.83,99.)

CHAPTER



Notices, Agenda, Minutes and Memoranda

NOTICES

When you want to convene meetings, you have to send a written notice within the specified time to every member of the group. The notice should mention the name and address of the organisation, and the date on which it is issued besides indicating the day, date, time and venue of the meeting.

AGENDA

Agenda is an official list of items of business to be transacted at a specific meeting. The items of the agenda are arranged in increasing order of importance and each item bears a number. However, almost every agenda has confirmation of the minutes of the previous meeting as the first item and any other matter with the permission of the Chairman as the last item.

MINUTES

Minutes are the official record of the business transacted at a meeting. They act as an aid to memory and provide a basis for decision and action. As the minutes of every meeting are approved by the members at the next meeting and signed by both the secretary and the chairman, they are considered very important records and preserved carefully.

Minutes follow the pattern of agenda and bear the same numbers. For each item a heading is given and the discussion/decision on it is recorded. Minutes contain the following details:

- Name of the organisation/unit

- Day, date, time and venue of the meeting

- Number of the meeting, if in a series

- Names of the chairman and the secretary

- Names of members present

- Names of members absent

- Names of persons who attended the meeting by special invitations, if any

- Record of transactions, item-wise

- Signature of the secretary and the chairman

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MEMORANDA

Memos (correspondence written and read only within a company) are an important means by which employees communicate with each other.

Characteristics of a Memo

1. It is internal. It is correspondence written to colleagues within a company.
2. Its identification lines include “Date” “To”, “From” and “Subject”, the message follows.
3. Its tone is informal.
4. Its structure is typically 8 ½” × 11” with 1” margins, 80 characters per line and about 55 lines per page.

SUBJECT LINE

A typical format is as follows:

Date:

To:

From:

Subject: Focus + Topic

Introduction: A lead-in, warm-up, overview stating why you're writing and what you're writing about

Discussion: Detailed development, made accessible through highlighting techniques, explaining exactly what you want to say

Conclusion: A summation stating what's next, when this will occur, and why the date is important

The beginning of a memo is the subject line.

SUBJECT

Salary increases for staff.

This subject line gives us the topic – staff' plus a focus – salary increases' all linked by a preposition.

INTRODUCTION

You want your first sentence or sentences to communicate immediately. A goal is to write one or two clear introductory sentences which tell your readers what you want and why you're writing.

DISCUSSION

The discussion section allows you to develop your content specifically. You want to respond to the reporter's questions (who, what, when, why, where, how). You also want to make your information accessible. Avoid long paragraphs. Instead, try to make your text more reader-friendly by applying some of these highlighting techniques :1. itemisation, 2. white space, 3. boldface type, 4. headings, 5. columns and 6. graphics.

CONCLUSION

Conclude your memo with a complimentary close and/or a directive close. A complimentary close motivates your readers and leaves them happy.

A directive close tells your readers exactly what you want them to do next or what your plans are (and provides dated action).

STYLE

Use simple words, readable sentences, specific detail and highlighting techniques. In addition, strive for an informal, friendly tone.

GRAMMAR

Abide by all grammatical conventions when writing memos. Poor grammar or typographical errors destroy your credibility.

WRITING

Once you've gathered your data and determined your objectives in prewriting, your next step is to draft your memo. In doing so, consider the following drafting techniques.

1. Review your prewriting
2. Determine your focus (topic, sentence, thesis statement, objective of the memo, etc.)
3. Clarify your audience
4. Have introduction, body and conclusion
5. Organise your ideas
6. Write the draft

REWRITING

To revise your memo and make it as good as it can be, follow these revision techniques:

1. Add new detail for clarity
2. Delete dead words and phrases
3. Simplify words and phrases
4. Move information from top to bottom or bottom to top for emphasis
5. Reformat for access
6. Enhance the tone and style of your memo
7. Correct for accuracy (Proofread)
8. Avoid sexist language

(Source: Sharon J. Geron and Steven M. Gerson, *Technical Writing: Process and Product*.)

PROJECT PROPOSALS

DEFINITION

A proposal is systematic, factual, formal and persuasive description of a course of action or a set of recommendations or suggestions. It is a method of persuading the reader to agree to the writer's view or accept his suggestion. As such, it should suggest a simpler, more efficient and more economical solution. The main aim of a proposal is to suggest new designs of products which are more economical, technically more sound and more efficient in performance. Another purpose for which a proposal is written is the solution of a technical problem or the performance of a task requiring sophisticated professional skills. A proposal may thus be defined as a written offer to solve a technical problem or to undertake a project of a practical or theoretical nature.

TYPES OF PROPOSALS

Proposals can be

1. Non-formal and Formal
2. Internal and External
3. Solicited and Unsolicited

Non-formal and Formal Proposals

A non-formal proposal is a brief description of suggestions or recommendations. Non-formal proposals are usually short. They are written to initiate small projects that do not require elaborate description and discussion. Formal proposals, on the other hand, are comparatively longer. They are usually written to initiate big projects and require elaborate descriptions.

Internal and External Proposals

An internal proposal is addressed to readers within an organisation. It may present different options for solving a problem. External proposals are communicated to people outside an organisation. They are more formal, detailed and elaborate than internal proposals. An external proposal may offer a plan to solve a problem and give appropriate suggestions and recommendations.

Solicited and Unsolicited Proposals

A solicited proposal is written in response to a specific request from a client. As companies, Government agencies and Institutions want the best people to take their projects, they make the request for proposals to increase competition. They specify their requirements and mention their conditions. An unsolicited proposal, on the other hand, is written without any request for a proposal. Such a proposal offers a solution or a recommendation, based on an objective assessment of situation or condition by an individual or a firm.

STRUCTURE OF FORMAL PROPOSALS

A formal proposal may include some or all of the following parts

1. Title page
2. Cover letter
3. Table of contents
4. List of figures

5. Abstract or summary
6. Methodology
7. Introduction
8. Statement of the problem
9. Proposed plan and schedule
10. Advantages/Disadvantages
11. Conclusion/Recommendations
12. Works cited
13. Appendix
14. Glossary

1. Title Page

The title page contains the title of the proposal, the name of the company, writer or writers submitting the proposals and the date on which the proposal was submitted as shown below:

A Proposal on

Submitted to

Submitted by

Date

2. Cover Letter

It provides the reader an overview of what is to follow. It informs the reader of the purpose of writing the proposal, the subject of the proposal and its importance.

3. Table of Contents

This section provides the reader an overall view of the proposal by listing the main headings and the sub-headings in the proposal, with their page numbers. Given below is an example of a table of contents:

Table of Contents

List of Illustrations	iii
Abstract	iv
1. Background	1
2. Introduction	2
3. Statement of the Problem	3
4. Proposed Plan and Schedule	5
5. Conclusion and Recommendations	8
6. Appendix	11
7. Glossary	15

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4. List of Figures

This section includes a list of tables, graphs and charts used in the proposal, and their page numbers.

Fig. 1	3
Fig. 2	4
Fig. 3	4
Fig. 4	5
Fig. 5	6
Fig. 6	7

5. Abstract or Summary

The summary is the entire proposal in a nutshell. A well-written, comprehensive and yet concise summary would persuade the reader to appreciate your idea. The summary includes

- (i) The name of the proposal
- (ii) A clear statement of the technical requirement your proposal fulfils
- (iii) The problem you propose to solve
- (iv) The duration of the project
- (v) A cost estimate

6. Methodology

This section summarises the proposed methods of data collection and the procedure for investigating the problem.

7. Introduction

This section gives the background, states the purpose and discusses the scope. It also highlights the major advantages and justifies the proposed course of action.

8. Statement of the Problem

This section gives an objective description of the problem. It also makes the proposal convincing and acceptable.

9. Proposed Plan and Schedule

It gives a detailed account of the importance of a proposal. It suggests the various techniques to be used and is divided into various headings and sub-headings for easy understanding.

10. Advantages and Disadvantages

This section indicates the advantages and disadvantages of the proposal. It reinforces that the proposal has more advantages than disadvantages.

11. Conclusions/Recommendations

This section sums up the proposal. It provides the reader with a sense of closure. The conclusion restates the problem, the proposed solution and the benefits to be derived.

12. Works Cited

This page documents the sources (books, periodicals, interviews, computer software, etc.) that have been used.

13. Appendix

Appendices allow you to include any additional information like survey reports, tables, figures, relevant letters, memos, etc. An appendix provides data for future reference.

14. Glossary

A glossary is an alphabetical list of high-tech terminology. It is invaluable. Readers who are unfamiliar with your terminology can turn to the glossary and read your definitions.

Appendix

IMPORTANT DEFINITIONS

1. **A dual purpose bicycle**

A two-wheeler which is pedaled using muscular power and which can be used as a vehicle as well as a power source to operate pumps and lathes.

2. **A Handicap**

(i) A thing that makes progress difficult, a disadvantage.

(ii) A serious, usually permanent, physical or mental condition that affects one's ability to walk, see, speak, etc.

3. **A Robot (also Automaton)**

A machine that can perform the actions of a person and which operates automatically or is controlled by a computer.

4. **Appropriate technology** (May 2002, April/May 2005)

This is a kind of low cost technology of the intermediate type. The accent here is on the appropriateness of the technology used in relation to the cultural and geographical circumstances of people. It arises from the local needs and uses local resources, both human and material. Its benefits go to the local community. It is linked to the concept of social justice. Pedal powered rice-threshers and Gobar gas plants are very good examples of appropriate technology.

Appropriate technology is that technology which is affordable within the resources available, is culturally acceptable and is environmentally harmless.

5. **Artificial Intelligence**(May/June 2005)

It is the study of how to make computer do intelligent things that we think and make decisions.

6. **Blue tooth technology**(May/June 2005)

Blue tooth technology allows electronic equipment to communicate by using radio,so that, a computer and printer can work together without having a wire connecting them.

7. **Communication cord** (May 2002)

A cord that passes along the length of a train inside the coaches, which the passengers can pull to stop the train in case of emergency.

8. **Communication satellite**

It is a satellite that transmits to a place or places on Earth, telephone messages or radio and television signals received from another part of the earth.

9. **Computer**

An electronic device for storing and analysing information fed into it, for calculating or for controlling machinery automatically.

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10. **Hardware (Computing)**

The mechanical and electronic parts of a computer.

11. **High technology** (May 2002, April/May 2005)

Unlike simple technology, high technology is not labour intensive. Machines of the sophisticated and complex types do most of the work. Naturally, these machines and their operation cost a great deal. Of course this high technology operating on a large scale is highly productive. Oil mills, ceramic plants, shoe factories and textile mills are examples of high technology.

12. **Information technology**

The study or use of electronic equipment, especially computers, for storing analysing and distributing information of all kinds, including words, numbers and pictures.

13. **Intercom** (May 2002)

A system of communication by radio or telephone between or within offices, aircraft, etc.

14. **Intermediate technology**

As the name implies, this type of technology stands halfway between simple and high technologies in terms of its capital costs, sophistication and scale of operation. The ox-drawn plough can be cited as a good example of intermediate technology as it stands between the traditional hand-operated hoe and the modern diesel tractor.

15. **Internet**

An international computer network through which computer users all over the world can communicate, exchange information, etc.

16. **Jet engine**

An engine that gives forward movement by releasing a stream of gases at high speed behind it.

17. **Jet lag**

The tired feeling and other physical effects experienced after a long flight, especially when there is a great difference in the local times at which the journey begins and ends.

18. **Laser printer**

A machine linked to a computer that produces good quality printed material by means of a laser beam.

19. **Laser technology** (Apr./May 2005)

This technology uses laser, a device that produces a narrow, intense and highly controlled beam of light.

20. **Machine**

An apparatus with several moving parts, designed to perform a particular task. Machines may be driven by electricity, steam, gas, etc. or by human power.

21. **Mass communication (the Mass media)**

It is the means of communicating with an large number of people, e.g. newspaper, television and radio.

22. **Modem**

A device linking a computer system, for example, a telephone line so that data can be transmitted at high speed from one computer to another.

23. **Multimedia**

The term means involving several different methods of communication or forms of expression. e.g. a multimedia event, including music, video and a laser show.

24. Nuclear energy (also Nuclear power)

An extremely powerful form of energy produced by the splitting of the nuclei of atoms. Nuclear energy can be used to produce electricity.

25. Photocopier

A machine used for making photocopies.

26. Safety belt (also Seat belt) (May 2002)

A belt attached to a seat in an aircraft, a car, etc., worn by a passenger to avoid being forward if an accident occurs.

27. Safety match

A match that will only catch fire when rubbed against a special surface, e.g. the side of the box containing it.

28. Safety net

- (i) A net placed underneath acrobats, etc. to catch them if they should fall.
- (ii) An arrangement that helps to prevent disaster if something goes wrong.

29. Safety pin

A pin with the point bent back towards the head and covered by a guard when closed.

30. Safety valve (May 2002)

- (i) A device that releases steam or pressure in a machine when it becomes too high.
- (ii) A harmless way of releasing feelings of anger, annoyance, etc.

31. Satellite

- (i) An electronic device that is sent into space and moves around a planet.
- (ii) A natural body in space that moves around a larger body, especially a planet.

32. Semi-Conductor

A semi-conductor is a substance such as silicon, that allows some electric currents to pass through it, and is used in electronic equipment.

33. Simple technology or Traditional technology (May 2002, Apr./May 2005)

This type of technology is primarily based on human labour. It involves the use of very few tools which are of the simplest variety. They cost next to nothing and are easy to operate. The use of a hoe for cultivation or weeding by a farmer is an example of simple technology.

34. Software (Computing)

The data, programmes, etc. used to operate a computer.

35. Windmill

- (i) A mill that works due to the action of wind on long projecting arms (sails) that turn on a central shaft.
- (ii) A similar tall thin structure used to convert the power of the wind to electricity.

QUESTION PAPERS

ANNA UNIVERSITY

B.E./ B.TECH. DEGREE EXAMINATION, APRIL/MAY 2002

First Semester

Time: Three Hours

Maximum: 100 Marks

Answer ALL Questions

SECTION A (10 × 2 = 20 Marks)

1. Match the words in column A with their meanings in column B:

A

B

- | | |
|------------------|------------------------------|
| (a) Amalgamation | giving out rays |
| (b) Chip | bringing together |
| (c) Radiation | getting completely exhausted |
| (d) Depletion | device composed of silicon |

2. Fill in the blanks in the following sentences with the comparative forms of the adjectives given in brackets:

- (a) Diesel is _____ (heavy) than petrol.
- (b) Diesel costs _____ (little) than petrol.
- (c) Pressurised heavy water reactor is _____ (small) than fast breeder reactor, and is, therefore _____ (compact) than the other.

3. Write definitions for the following in a sentence each:

- (a) A Tour
- (b) A Computer

4. Complete the following suitably:

- (a) If there had been no rains last month _____
- (b) If there were no politicians to tempt people _____

5. Fill in the blanks with the appropriate forms of words:

ADJECTIVES	NOUNS	OPPOSITE (NOUNS)
Pure		
		Abnormality
	Reability	
		indestructibility

6. Fill in the blanks in the following passage with the appropriate forms of the verbs given in brackets:

I _____ (be) an employee of the Central Government. I _____ (start) my career in Bombay in 1955. In 1970 I _____ (get) a transfer to Calcutta. Now I _____ (work) in Chennai.

7. A compound noun such as
- power source*
- can be expanded as a
- source of power*
- . Similarly expand the following compound nouns using suitable prepositions:

- (a) Mains electricity
- (b) A control centre
- (c) The research laboratory
- (d) A water truck

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8. Edit the following passage:

The aim of the authors is to describe about the benefits in computerisation and to suggest solutions to the problem of unemployment.

9. Punctuate the following:

Are there any advantages in the computerisation of work in large establishments if so what are they.

10. (a) Add suitable endings to the following words to form adjectives:

- (i) suburb
- (ii) continue
- (iii) retract
- (iv) vigour

(b) Use two of the adjectives you've formed in sentences of your own.

SECTION B ($5 \times 16 = 80$ Marks)

11. Read the following report and answer the questions that follow it:

It has always been clear, of course, that a properly designed media programme uses press, posters, printed leaflets and so on in proportions suitable to the nature of the product itself. In such a programme television occupies a relatively important place if the product is sold in small quantities, at a low price to the vast mass of the people. It is regarded as a quick acting medium, peculiarly suited to prompting 'impulse purchases'.

Larger items, such as cars and refrigerators, may be more profitably advertised in the press or other media which are examined in greater detail and more at leisure than television 'commercials' can possibly be. Nevertheless, in most mass advertising campaigns, the media are used in combination with each other, in proportions which tend to be more and more carefully, and even scientifically, determined.

It is significant, in this connection, that the poster medium and outdoor advertising generally, are now staging something of a recovery, after sustaining what at first looked like being a severe blow at the time of the introduction of commercial television into the United Kingdom in 1955.

Media planning is only one of the branches of the British advertising business, where more exact methods of measurement and the close study of statistical data have made considerable headway in recent years. The marketing and research departments of the advertisers themselves, and of the agents who act as middlemen between advertisers and media owners in the case of more than 50 percent of British advertising business, are constantly expanding. These departments have for sometime included a number of University graduates. Usually with particular qualification in statistics and the movement of University trained men into advertising, the business is growing as is the study of advertising problems in the universities themselves, particularly in the departments of economics, psychology and sociology.

(a) Complete the following sentences choosing one of the options given below each sentence:

1. A properly designed media programme uses
 - (i) television —if the commodity is produced on a large scale.
 - (ii) different sources of media according to the type of the product.
 - (iii) a media which depends on the impulse.
2. The producers advertise large items
 - (i) on television 'commercial' to appeal to the people.
 - (ii) in press so that the customer may see details leisurely.
 - (iii) to make profit through poster advertisement.

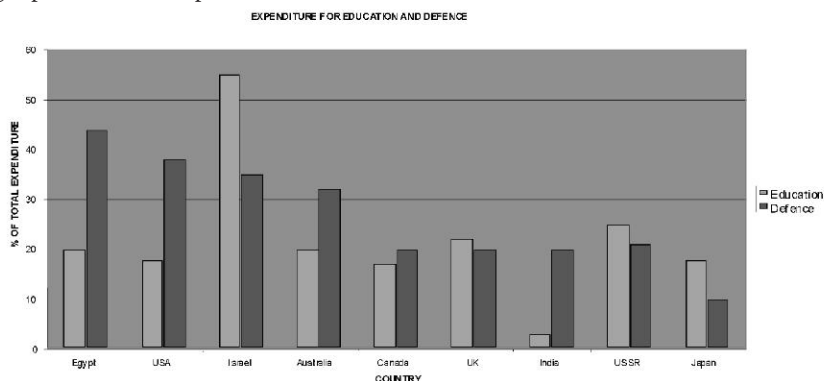
3. The poster medium and outdoor advertisement
 - (i) were started in the United Kingdom in 1955.
 - (ii) are again becoming popular these days.
 - (iii) nowadays depend upon commercial television.
 4. British advertising business
 - (i) is one of the branches of media planning.
 - (ii) has a close study of roads and ways in recent years.
 - (iii) studies closely measuring methods of advertisement.
 5. The marketing and research departments of advertisers
 - (i) have employed a number of university graduates.
 - (ii) have appointed 50 percent middlemen.
 - (iii) have started departments of economics, psychology and sociology.
 6. The advertising agents act as middlemen between
 - (i) university students and advertisers.
 - (ii) media owners and economists.
 - (iii) those who are interested in advertising and those who own the media.
- (b) Give the most suitable meanings of the following words as they are used in the text choosing from the lists given below:
1. Nevertheless

(i) never before	(ii) never	(iii) however
------------------	------------	---------------
 2. Severe blow

(i) air	(ii) a hard bit	(iii) a flight
---------	-----------------	----------------
 3. Sociology
 - (i) a study of ecology
 - (ii) a study of the nature and development of society
 - (iii) a study of the history of a nation
 4. Headway
 - (i) progress in difficult circumstances
 - (ii) the path of the leader
 - (iii) the movement of one's head
 5. In proportions
 - (i) in parts
 - (ii) in correct relation to other things
 - (iii) in proper terms
 6. A close study
 - (i) a thorough, detailed study
 - (ii) a study of secret material
 - (iii) the end of reading
- (c) Read the text and answer the following questions:
1. What are the different media available for advertising products?
 2. When were the poster medium and outdoor advertising affected terribly?
 3. What are the reasons for the growth in advertising?
12. (a) Imagine that you have acquired a personal computer. Write a letter to your friend describing how you enjoy using it.
- (or)
- (b) Imagine that you visited a factory where you had a chance to observe an industrial robot at work. Write a letter to your friend describing what you saw.

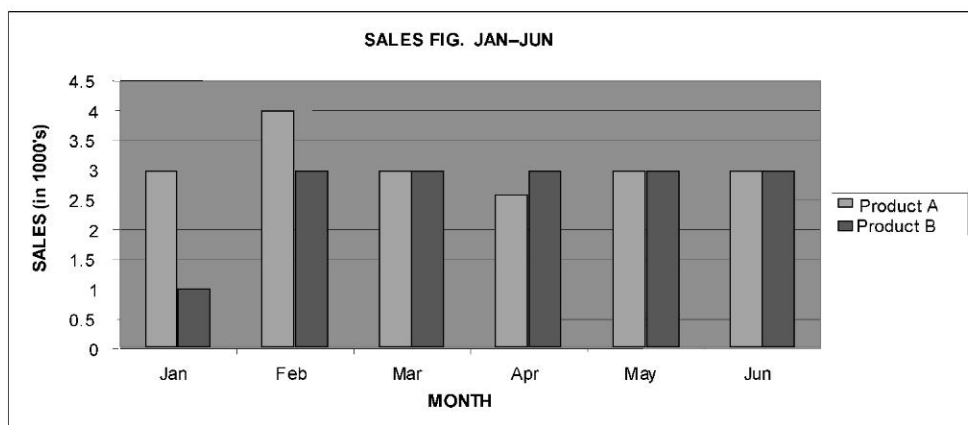
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13. (a) Look at the following bar chart which describes the expenditure on education and defence as percentages of the total expenditure incurred by different countries. Write a paragraph presenting the information contained in it using expressions of comparison.



(or)

- (b) Look at the following bar chart which describes the sales figures of products A and B for the period from January to June in respect of a firm. Write a paragraph presenting the information contained in it using expressions of comparison.



14. (a) Write a paragraph of about 200 words comparing the life in a village with that in a city.
(or)
(b) Do you think that the introduction of computers in industries will lead to unemployment? Express your ideas in a paragraph of about 200 words.
15. (a) Write a set of eight recommendations that will help the public save petrol.
(or)
(b) Write a set of eight recommendations that should be followed to save water.

B.E./ B.TECH. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2002**First Semester**

Time: Three Hours

Maximum: 100 Marks

Answer ALL Questions

SECTION A

(10 × 2 = 20 Marks)

1. Match the words in column A with their meanings in column B:

A

B

- | | |
|-------------------|----------------------------|
| (a) Contamination | (i) intensify |
| (b) Fission | (ii) misuse |
| (c) Aggravate | (iii) division of the atom |
| (d) Abuse | (iv) pollution |

2. Fill in the blanks in the following sentences with the comparative forms of the adjectives given in brackets:

- (a) Lead is _____ (heavy) than aluminium.
 (b) Gold is _____ (expensive) than silver.
 (c) The process of extraction of oil is _____ (simple) than the process involved in prospecting for oil.
 (d) The disposal of nuclear wastes causes _____ (great) problems when compared to the production of nuclear energy.

3. Read the following definition of a 'computer programme':

"A computer programme is a set of instructions which tells a computer what to do".

Using this model, write definitions for each of the following words:

- (a) An auditorium
 (b) A robot

4. (a) Make nouns from the verbs given below by adding suitable suffixes:

(suffixes : '-tion', '-ment', '-ence', '-ance')

- | | |
|----------------|--------------|
| (i) improve | (ii) vibrate |
| (iii) maintain | (iv) refer |

- (b) Form adjectives from the nouns by adding suffixes like '-al' and '-ical':

- | | |
|-----------------|-------------|
| (i) physics | (ii) nature |
| (iii) tradition | (iv) season |

5. A compound noun such as '
- power source*
- ' can be expanded as '
- a source of power*
- '. Similarly expand the following compound nouns:

- (a) Aluminium extraction
 (b) Control tower
 (c) Steel box
 (d) Space travel

6. Fill in the blanks with the appropriate forms of the verbs given in brackets:

Kamala _____ (be) a teacher. In 1970 she _____ (start) her career in Sri Lanka. She _____ (migrate) to India in 1995. Presently, she _____ (work) in Delhi.

7. Edit the following passage by correcting the mistakes in grammar and spelling:

In the coming dicades road transport has face serious problems. The dencity of automobile trafic in the sities will being so high, that the roads will hardly be able to accomodated them.

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8. Rewrite the following sentences in the passive voice:
- Indian Airlines has introduced the automatic printing of tickets in major cities.
 - A very small quantity of nuclear fuel can produce enormous amount of energy.
9. Fill in the blanks with suitable prepositions:
 Artificial Intelligence (AI) is the science ———— developing computers that can learn and follow instructions ———— great accuracy and speed. An example ———— AI is the use ———— expert systems.
10. Identify the word that does not belong to the group. Say why it is different from the rest of the words in the group:
 Use the following format for your answer.
 E.g. : Doctor, nurse, hospital, militant, patient
Ans : All the words in the group are related to health, but 'militant' is not.
- Incident, happening, event, experiment, occurrence
 - Lime, cement, bricks, juice, sand
 - Wind power, petrol, solar power, bio-gas, pedal power
 - Moon, stars, sun, satellite, mars

SECTION B

(5 × 16 = 80 Marks)

11. Reading comprehension:

Read the passage and answer the questions following it:

- Almost all the energy that living things make use of comes from the sun. The chief exception is the gravitational pull of the earth itself, and of the moon upon the waters of the earth. The sun gives out enormous quantities of energy in the form of radiation.
- The energy given out by the sun is created by the process known as nuclear fusion. Fusion means 'joining together'. The opposite process is nuclear fission, meaning, 'splitting apart' or 'dividing'. If either fission or fusion takes place quickly, the result is a great and sudden release of energy—an explosion, in fact. Both kinds of nuclear events can be created on earth but so far the only one that can be slowed down and controlled is fission.
- Nuclear fission is the splitting of the nucleus of an atom. Only a few elements are suitable for use in this way, the most important ones being Uranium-235, Uranium-233 and Plutonium-239. When a nucleus of one of these elements is struck by a free neutron it breaks down into two lighter nuclei which fly apart at high speed, colliding with surrounding atoms. Their kinetic energy is converted into heat energy. At the same time, two or three free neutrons are released and one of them enters the nucleus of a neighbouring atom, causing fission to occur again; and so on. The reaction spreads very quickly, with more and more heat energy released and this is called a 'chain' reaction because the splitting of each nucleus is linked to another, and another and another.
- If this reaction takes place in an atomic bomb, where nothing is done to slow it down, the result is a violent explosion that can destroy a town in a few seconds. Fission can also, however, take place within a construction called a nuclear reactor, or atomic pile. Here the highly fissile material (U-235, U-233, Pu-239) is surrounded by a substance that is non-fissile, for instance graphite. This material is called a moderator. The neutrons lose some of their energy and speed through colliding with the atoms of the moderator. Energy—heat energy—is still created on an enormous scale, but no expansion takes place. The moderator has another function : by slowing down the speed of the free neutrons, it makes it more likely that one of them will collide with the nucleus of a neighbouring atom to continue the chain reaction.

- V. The chief advantage of nuclear energy is that it does not depend on any local factors. A nuclear reactor, unlike an oil-well or a coalmine does not have to be sited on top of a fossil-fuel source; unlike the solar energy unit, it does not have to go out of production when the sun is not shining; unlike hydro-electric power, it does not depend on a large flow of water which may be reduced during some seasons of the year. With an atomic power station, the only limiting factor is that of safety.
- VI. In the opposite process, nuclear fusion, two nuclei come together to form a new nucleus of a different kind and this process also releases energy on an enormous scale. Fusion can only occur under conditions of very great heat—at least 50,000,000 degrees Celsius. A fusion reaction on earth has already been created—the hydrogen bomb. This is an uncontrolled reaction. It is not yet possible to produce a controlled fusion reaction that can be used for the production of useful energy.

- (a) Match the headings with the relevant paragraphs: (5)

A	B
1. Uncontrolled and moderate nuclear reaction	Paragraph I
2. The advantages of nuclear energy	Paragraph II
3. Fission and fusion	Paragraph III
4. The nuclear fission chain reaction	Paragraph IV
5. Energy from the sun	Paragraph V

- (b) Complete the following sentences by selecting the most suitable one from the options listed: (5)

- The aim of a nuclear reactor is
 - to establish a controlled chain reaction
 - to absorb neutrons travelling at a particular speed
 - to cause a rapid chain reaction in order to release the greatest amount of energy
- Destructive weapons can be obtained from
 - nuclear fusion
 - nuclear fission
 - both nuclear fission and nuclear fusion
- One of the functions of a moderator is
 - to speed up the nuclear reaction
 - to slow down the speed of free neutrons
 - to slow down the splitting of an atom
- A violent nuclear explosion can destroy a whole town
 - within a few hours
 - within a few minutes
 - within a few seconds
- Nuclear fission gets repeated
 - when a group of neutrons enter the nucleus of the adjoining atom
 - when one of the neutrons enters the nucleus of the adjoining atoms
 - when two or three neutrons go away from the adjoining atom

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- (c) Read the following statements and state whether they are 'True' or 'False' : (6)

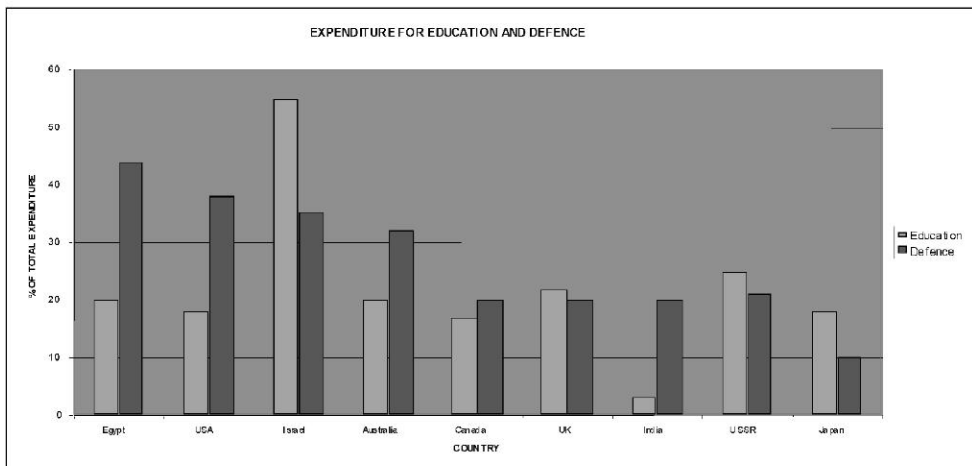
1. The hydrogen bomb is a good example of nuclear fission.
2. A few elements alone are suitable for use as nuclear fuels.
3. Nuclear energy depends upon the supply of fossil fuels.
4. An atomic power supply can supply the same quantity of energy throughout the year.
5. A hydro-electric power station can be built anywhere.
6. The sun's energy is released by the process of nuclear fusion.

12. (a) Imagine that you have got internet facility at home. Write a letter to your friend explaining the advantages of having internet facility at home. Your letter should not exceed 200 words.

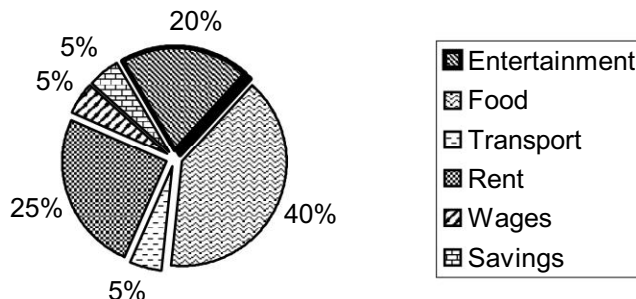
(or)

- (b) Write a letter to the editor of a newspaper highlighting any four problems faced by commuters in city buses. Suggest suitable solutions for each one of the problems highlighted. (200 words)

13. (a) Look at the following bar chart which describes the expenditure on education and defence of the total expenditure incurred by different countries. Write a paragraph presenting the information contained in it using expressions of comparison. Also give your comments in about 100 words, on defence expenditure and whether you think it is necessary or not. (Total: 200 words)



- (b) Look at the following pie chart, which shows the different ways Mr. Gupta spends his monthly income. Write a paragraph presenting the information contained in the chart. In about 100 words, write whether Mr. Gupta is spending his income wisely or not. (Total : 200 words).



14. The two groups of sentences given below are not in the correct order. Select any ONE group of jumbled sentences and rewrite them in the correct order:
- (a) (i) In the long term, certain chemicals in tobacco smoke intensify the damage in the lung region.
(ii) But, giving up smoking progressively reduces such risks of lung cancer.
(iii) Consequently, the mucus remains and starts accumulating in the lungs, making them liable to infection.
(iv) However, without any doubt it can be said that smoking is injurious to health.
(v) The damage caused to the lungs and respiratory passages inhibits the process that removes mucus and dust particles.
(vi) There is an overwhelming statistical and experimental evidence to associate smoking with diseases like lung cancer and coronary heart attacks.
(vii) This, in turn, induces cancer in the lung tissues.
(viii) Apart from early death from these two diseases, heavy smokers suffer from persistent coughs which damage the lungs.
- (b) (i) Another disadvantage is that diesel engines are difficult to start in cold weather.
(ii) For one, the higher compression that makes the diesel more efficient necessitates the use of heavier engine components.
(iii) Thirdly, diesel engines have been noted for their loud noise and vibration.
(iv) However, the popularity of diesel engines still continues, because the price of diesel is low when compared to the price of petrol.
(v) Finally, these engines are known for the emission of heavy smoke.
(vi) The diesel engine, an increasingly popular engine in automobiles has its own disadvantages.
(vii) But, plugs are available to preheat the engines to provide easier starting.
(viii) Therefore, diesel engines remain heavier than petrol engines.
15. (a) Write a paragraph comparing human brain and the computer and another paragraph comparing calculators and computers in about 100 words each.
- (or)
- (b) Write two paragraphs describing the advantages of using solar power and wind power as alternative sources of energy in India. (200 words)

B.E./ B.TECH. DEGREE EXAMINATION, APRIL/MAY 2003

First Semester

Time: Three Hours

Maximum: 100 Marks

Answer ALL Questions

SECTION A

(10 × 2 = 20 Marks)

1. Match the words in column A with their meanings in column B:

A

B

- | | |
|---------------|------------------|
| (a) Countless | generate |
| (b) Tranquil | extended walking |
| (c) Produce | numerous |
| (d) Trekking | calm, peaceful |

2. Fill in the blanks in the following sentences with the comparative forms of the adjectives given in brackets :

- (a) Nylon is _____ (hard) than rubber.
 (b) Platinum is _____ (expensive) than gold.
 (c) Today, making investments in landed property is _____ (wise) than investing in articles of gold.
 (d) In mountain regions, day travel is _____ (good) than night travel.

3. Read the following definition of a "Computer Programme":

"A computer programme is a set of instructions which tells a computer what to do."

Using this model, write definitions for the following in a sentence each.

- (a) A calculator (b) A computer virus

4. (a) Make nouns from the verbs given below by adding suitable suffixes:

[Suffixes: '-tion', '-ment', '-ence', '-ance']

- | | |
|---------------|----------------|
| (i) interfere | (ii) cultivate |
| (iii) invest | (iv) accept |

- (b) Form adjectives from the nouns by adding suitable suffixes like '-al', '-ical' and '-able':

- | | |
|------------------|------------------|
| (i) biochemistry | (ii) environment |
| (iii) technology | (iv) reason |

5. A compound noun such as '
- power source*
- ' can be expanded as '
- source of power*
- '. Similarly expand the following compound nouns:

- | | |
|---------------------------|------------------------|
| (a) silver extraction | (b) computer diagnosis |
| (c) resources utilisation | (d) information centre |

6. Fill in the blanks with the appropriate forms of the verbs given in brackets:

Rajesh _____ (work) as a farmer in a village near Salem till June 1990. In July 1990, he _____ (change) his profession. After the change he _____ (migrate) to Chennai and through hard work he became rich. At present, he _____ (be) the owner of two factories in the city.

7. Edit the following passage by correcting the mistakes in grammar and spelling, without changing the meaning of the passage:

Technology is an mixed package : it has its benifits and its drawback. Technology are the power dirived from the aplication of knowlege. This power has been sought to be utilised to improved the standards of living of people all over the world.

8. Rewrite the following sentences in the passive voice:

- (a) We can use coal to produce detergents, explosives and paints.
- (b) Multinational companies make huge investments in oil-rich countries.

9. Fill in the blanks with suitable prepositions:

The gobar gas plant is a simple apparatus used _____ turning animal wastes _____ bio-gas plus nitrogen fertiliser. 'Gobar' comes _____ the Hindi word _____ cow. Cattle-dung forms the primary source _____ fuel _____ the rural population _____ India. Other supplementary materials like organic wastes can be used, wherever the availability _____ cattle-dung is found to be inadequate.

10. Identify the word that does not belong to the group. Say why it is different from the rest of the words in the group:
E.g.: Doctor, nurse, hospital, militant, patient.

Ans: All the words in the group are related to health, but 'militant' is not.

- (a) Iron, silver, mercury, zine, copper
- (b) Cars, ships, motorbikes, buses, vans
- (c) Computer, chip, taperecorders, microprocessor, robot
- (d) Agriculture, industry, harvest, farmer, seed

SECTION B (5 × 16 = 80 Marks)

11. Read the text and answer the questions that follow it:

Space is a dangerous place, not only because of meteors but also because of rays from the sun and other stars. The atmosphere again acts as our protective blanket on earth. Light gets through, and this is essential for plants to make the food which we eat. Heat, too, makes our environment tolerable and some ultraviolet rays penetrate the atmosphere. *Cosmic rays* of various kinds come through the air from outer space, but enormous quantities of radiation from the sun are screened off. As soon as men leave the atmosphere they are exposed to this radiation but their space suits or the walls of their spacecraft, if they are inside, do prevent a lot of radiation damage.

Radiation is the greatest known danger to explorers in space. Doses of radiation are measured in units called 'rems'. We all receive radiation here on Earth from the sun, from cosmic rays and from radioactive minerals. The 'normal' dose of radiation that we receive each year is about 100 millirems (0.1 rem); it varies according to where you live, and this is a very rough estimate. *Scientists have reason to think* that a man can put up with far more radiation than this without being damaged; the figure of 60 rems has been agreed. The trouble is that it is extremely difficult to be sure about radiation damage a person may feel perfectly well, but the cells of his or her sex organs may be damaged, and this will not be discovered until the birth of (deformed) children or even grandchildren.

Early space probes showed that radiation varies in different parts of space around the Earth. It also varies in time because, when great spurts of gas shoot out of the sun (solar flares), they are accompanied by a lot of extra radiation. Some estimates of the amount of radiation in space, based on various measurements and calculations, are as low as 10 rems per year, others are as high as 5 rems per hour. Missions to the moon (the Apollo flights) have had to cross the Van Allen belts of high radiation and, during the outward and return journeys, the 'Apollo 8' crew accumulated a total dose of about 200 millirems per man. It was hoped that there would not be any large solar flares during the times of Apollo moon walks because the walls of the LEMS (Lunar Excursion Modules) were not thick enough to protect the men inside, though the command modules did give reasonable protection. So far, no dangerous doses of radiation have been reported, but the Gemini orbits and the 'Apollo 8' missions have been quite short. We simply do not know yet how men are going *to get on* when they spend weeks and months outside, the protection of the atmosphere, working in a space laboratory or in a base on the moon. Drugs might help to decrease the damage done by radiation, but no really effective ones have been found so far. At present, radiation seems to be the greatest physical hazard to space travellers, but it is impossible to say just how serious the hazard will *turn out to be* in the future.

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(a) Read the passage carefully, then answer the following questions. Choose the response which best reflects the meaning of the text:

1. Scientists have fixed a safety level of
 - (i) 10 rems per year
 - (ii) 60 rems per year
 - (iii) 100 millirems per year
 - (iv) 5 rems per hour
2. The spacemen were worried about solar flares when they were
 - (i) Crossing the Van Allen belts
 - (ii) Setting up a moon base
 - (iii) Exploring the surface of the moon
 - (iv) Waiting in the command module
3. When men spend long periods in space how will they protect themselves?
 - (i) By taking special drugs
 - (ii) By wearing special suits
 - (iii) By using a protective blanket
 - (iv) No solution has been found yet
4. Which of the following is true?
 - (i) The grandchildren of astronauts are deformed
 - (ii) The children of astronauts have damaged sex organs
 - (iii) Radiation damage may show only in later generations
 - (iv) Radiation does not seem to be very harmful

(b) Choose the definition which best fits these words or phrases as they are used in the text:

(4)

1. Cosmic rays
 - (i) Rays from outer space
 - (ii) Sunbeams
 - (iii) Ultraviolet rays
 - (iv) Rays from spacecraft
2. Scientists have reason to think
 - (i) Scientists are right to think _____
 - (ii) Scientists have evidence to suggest _____
 - (iii) Scientists need to think _____
 - (iv) Scientists are certain _____
3. Get on

(i) Mount	(ii) Walk
(iii) Survive	(iv) Advance
4. Turn out to be

(i) Change	(ii) Harm
(iii) Remain	(iv) Prove

(c) Look at the passage and decide whether the following statements are 'true' or 'false':

(8)

1. The atmosphere screens off the Earth from excessive radiation.
2. Everyone on earth is exposed to exactly the same amount of radiation.
3. Solar flares are not dangerous.
4. Space is a dangerous place because it is not fully explored.
5. The 'Apollo 8' missions have been quite long in duration.
6. The drugs that have been found to decrease radiation are ineffective.

7. The greatest physical hazard to space travellers is remaining for long hours in space.
8. In space travel, space suits are absolutely necessary for the scientists.
12. (a) Write a letter to your cousin advising him/her to take up a computer software course during the vacation in December. In your letter, explain the benefits of enrolling for such a course. Your letter should not exceed 200 words.

(or)

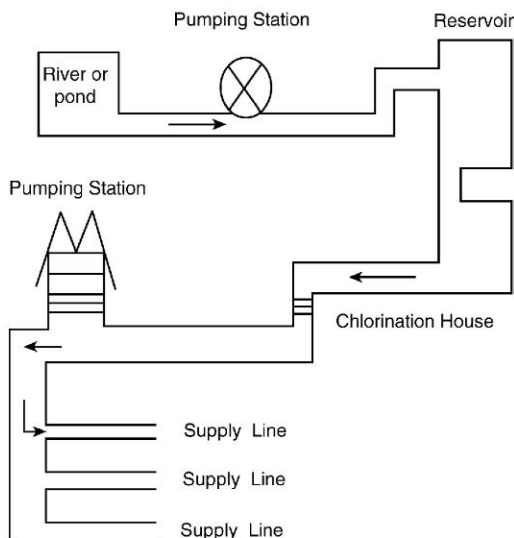
- (b) Write a letter to the editor of a newspaper highlighting any four problems faced by commuters in city buses. Also suggest suitable solutions for each one of the problems highlighted. (200 words)
13. (a) Using the information provided in the given text, draw a flow chart describing the different stages involved in the making of coins. Remember to give an appropriate title to your flow chart.

Coins are manufactured in a factory known as a mint. There are three mints in India: in Bombay, Calcutta and Hyderabad. Production of coins at the mints is a complete process. It starts with the buying of unmixed metals and their testing by the Assay Department. Then the metals are alloyed in oil-fired or electric arc furnaces, and cast into ingots 40 cm wide, 15 cm thick and 6 m long. These ingots are reheated until the temperature is hot enough for hot rolling. During this stage, the ingots pass through a series of rollers until they form long, thin sheets which are the thickness of a coin. From these thin strips, blank discs are punched. These are the basic raw material for the manufacture of coins. The blanks are heated to soften them, and they are rolled so that the rim is raised. Finally they are stamped with the design of the coin. At every stage, defective pieces are carefully sorted out, and (with the frequent checking and returning points) strict quality control is maintained. Rejects are returned to the alloying stage, together with the waste from the alloy strip.

(or)

- (b) Look at the flow chart given below and write a paragraph describing the process involved in the purification of water and its supply to the people of a town. (100 words)

Also, write a paragraph of 100 words pointing out the importance of purifying water before it is supplied to the public.

Process of Purification of Water

14. The two groups of sentences given below are not in the correct order. Select any ONE group of jumbled sentences and rewrite them in the correct order.

- (a) (i) The dissolved cellulose is formed into threads by a technical process.
 (ii) This fibre is, in fact, a reconstituted natural fibre.
 (iii) After that, they are dried on a heated roller.
 (iv) The cellulose is obtained from shredded wood pulp.
 (v) Finally, they are wound on to a bobbin.
 (vi) It is made by dissolving cellulose in a solution of sodium hydroxide.
 (vii) The threads are drawn from the setting bath of dilute sulphuric acid. Then, they are wound on reel and washed.
 (viii) Rayon is a man-made fibre.

(or)

- (b) (i) Antarctica which is regarded as a continent by itself is located in this southern polar region.
 (ii) Geographers have found that there are some important differences between the northern and southern polar regions of the earth.
 (iii) Antarctica is snow-bound almost throughout the year, but the snow in the Arctic melts in summer.
 (iv) The Arctic region, in the north, is mostly sea, surrounded by masses of land.
 (v) But, on the whole, both the polar regions help nature, in maintaining the ecological balance.
 (vi) The southern pole, on the other hand, is situated in a land mass surrounded by oceans.
 (vii) Both the regions, in general, have very cold climate.
 (viii) The winter in the Arctic is not so severe as in the Antarctic.

15. (a) Describe in two paragraphs the advantages and disadvantages of nuclear power as an alternative source of energy. (200 words)

(or)

- (b) Write two paragraphs comparing human beings with robots. (200 words)

B.E./B.TECH. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2003**First Semester**

Time: Three hours

Maximum : 100 Marks

Answer ALL Questions.

SECTION A

(10 × 2 = 20 Marks)

1. Write a single sentence definition for each of the following terms:
E.g. "A transformer is a piece of electrical equipment, which changes the voltage of current".
(a) Sensor (b) Flowchart
2. Expand the following compound nouns :
E.g. Air Supply – Supply of air.
(a) Ferrous oxide – coated tape
(b) Temperature drop
(c) Power cable
(d) Heat transfer
3. Fill in the blanks in the following sentences with suitable prepositions :
(a) The ore is then transported _____ mills.
(b) The machine is very heavy in spite _____ its small size.
(c) Oil is found underground trapped _____ the layers of rock.
(d) _____ operating the pump rhythmically water is pumped.
4. Correct the mistakes in English in the given passage :
One of the world's major source of energy are oil. We depend on it for heating, as fuel for transportation and generate of power. Crude mineral oil come out of the earth as a thick brown or black liqued with a strong smell. It is a complex mixtures of many different substance.
5. Change the active voice into the passive in the following sentences :
(a) We use radiation measuring instruments to monitor radiation levels.
(b) Users can maintain this pump themselves.
6. Match the words in column A with their meanings in column B:

A	B
(a) Hazard	something that rouses people to activity
(b) Core	choice
(c) Stimulus	innermost part
(d) Option	danger
7. Make antonyms of the following words by adding suitable prefixes :
(a) Relenting
(b) Purity
(c) Sensitive
(d) Advantage

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8. Fill in the blanks in the table given below with the appropriate form of the word :

VERB	NOUN	ADJECTIVE
		Reliable
	Stagnation	
Generate		
		Restorative

9. Fill in the blanks in the following sentences using the appropriate form of verbs given in brackets:
 Srinivasa Ramanujan _____ (be) a great mathematical genius. He _____ (accept) a clerical position in the Madras Port Trust Office. While he _____ (work) as a clerk, he _____ (write) to G.H. Hardy of Cambridge University a letter that was to change his life.
10. Complete the following sentences indicating the conditions in which something will happen :
 (a) If the battery of the car is down, _____.
 (b) If _____, the aeroplane cannot take off.

SECTION B

(5 × 16 = 80 Marks)

11. Read the text given below and answer the questions that follow:

GOLD

Mankind's fascination with gold is as old as civilisation itself. The ancient Egyptians esteemed gold, which had religious significance to them, and King Tutankhamum was buried in a solid-gold coffin 3500 years ago. The wandering Israelites worshipped a golden calf, and the legendary King Midas asked that everything he touched be turned into gold.

Not only is gold beautiful, but it is virtually indestructible. It will not rust or corrode; gold coins and products fabricated from the metal have survived undamaged for centuries. Gold is extremely easy to work with; one ounce, which is about the size of a cube of sugar, can be beaten into a sheet nearly 100 square feet in size, and becomes so thin that light passes through it. An ounce of gold can also be stretched into a wire 50 miles long. Gold conducts electricity better than any other substance except copper and silver, and it is particularly important in the modern electronic industry.

People have always longed to possess gold. Unfortunately, this longing has also brought out the worst in the human character. The Spanish conquistadores robbed palaces, temples, and graves, and killed thousands of Indians in their ruthless search for gold. Often the only rule in young California during the days of the gold rush was exercised by the mob with a rope. Even today, the economic running of South Africa's gold mines depends largely on the employment of black labourers who are paid about £ 40 a month, plus room and board, and who must work in conditions that can only be described as cruel. About 400 miners are killed in mine accidents in South Africa each year, or one for every two tons of gold produced.

Much of gold's value lies in its scarcity. Only about 80,000 tons have been mined in the history of the world. All of it could be stored in a vault 60 feet square, or a super tanker.

Great Britain was the first country to adopt the gold standard, when the Master of the Mint, Sir Isaac Newton, established a fixed price for gold in 1717. But until the big discoveries for gold in the last half of the nineteenth century—starting in California in 1848 and later in Australia and South Africa—there simply wasn't enough gold around for all the trading nations to link their currencies to the precious metal.

An out-of-work prospector named George Harrison launched South Africa into the gold age in 1886 when he discovered the metal on a farm near what is now Johannesburg. Harrison was given a £ 12 reward by the farmer. He then disappeared and reportedly was eaten by a lion.

One of the big gold-mining areas in the Soviet Union is the Kolyma River region, once infamous for its prison camp. The camp has gone, but in a way nothing has changed. Many ex-prisoners have stayed on to work the mines and are supervised by ex-guards.

Despite the current rush to buy gold, 75 percent of the metal goes into jewellery. Italy is the biggest user of gold for this purpose, and many Italian jewellers even tear up their wooden floors and burn them to recover the tiny flecks of gold.

Historically, the desire to hoard gold at home has been primarily an occupation of the working and peasant classes, who have no faith in paper money. George Bernard Shaw defended their instincts eloquently: 'You have to choose between trusting to the natural stability of gold and the natural stability of the honesty and intelligence of the members of the Government', he said, 'and with due respect to these gentlemen, I advise you... for gold'.

(a) Write the response which best reflects the meaning of the text:

(6 × 1 = 6)

1. One of the disadvantages of gold is that
 - (i) it loses its shape too easily
 - (ii) it is easy to destroy
 - (iii) it is expensive to mine
 - (iv) it is of no use in industry
2. Gold has always been considered a precious metal because
 - (i) money is made of it
 - (ii) it is rare
 - (iii) a small quantity goes a long way
 - (iv) it is of no use in industry
3. During the days of the gold-rush in California
 - (i) people had to mark out their gold claims with rope
 - (ii) people carried rope instead of guns
 - (iii) hanging was a common form of punishment
 - (iv) rope was the symbol of law and order
4. After the big gold discoveries in the late nineteenth century
 - (i) most nations adopted the gold standard
 - (ii) the trading nations were unable to get enough gold
 - (iii) gold coins were used by most nations
 - (iv) gold ceased to be an important metal
5. The gold standard is
 - (i) the average price of gold on the world market
 - (ii) a basis for determining the value of currency
 - (iii) the amount of gold required by a nation before its currency can be convertible
 - (iv) a means of determining the quality of gold
6. George Bernard Shaw thought that
 - (i) the members of the government were honest and intelligent
 - (ii) the value of gold was likely to change unexpectedly
 - (iii) one could place more faith in gold than in politicians
 - (iv) gold was more valuable than paper money

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- (b) State whether the following statements are true or false: $(6 \times 1 = 6)$
1. Gold was of no use to the Egyptians.
 2. It is extremely difficult to destroy gold.
 3. Gold is a poor conductor of electricity.
 4. Gold mining is dangerous.
 5. Before the big gold discoveries in the nineteenth century nobody was interested in gold.
 6. Harrison made a fortune from his discovery of gold.
- (c) Choose the definition which best reflects the meaning of the word as it has been used in the text: $(4 \times 1 = 4)$
1. Esteemed
 - (i) valued
 - (ii) worshipped
 - (iii) produced
 - (iv) needed
 2. Corrode
 - (i) be eaten away
 - (ii) melt
 - (iii) change colour
 - (iv) lose shape
 3. Ruthless
 - (i) hopeless
 - (ii) needless
 - (iii) heartless
 - (iv) useless
 4. Stability
 - (i) constancy
 - (ii) value
 - (iii) function
 - (iv) scarcity
12. (a) Your father has bought a personal computer but he is not sure how useful it would be for him at home. Write a letter to him telling him how best and useful it can be in his daily life.
(or)
- (b) Write a letter to the editor of a newspaper explaining the need for providing bright street lamps in your street where there is no adequate lighting for most part of the street.
13. (a) Describe in about 170-200 words the utility, function with advantages and disadvantages of a washing machine.
(or)
- (b) Imagine yourself to be in the year 2050 and you are in your early 70's. The fuel position is very bad. Describe how life was fifty years ago when fuel was easily available. Write this in about 170-200 words.
14. Below are two groups of sentences given. But they are not in order. Choose any one group of sentences and re-arrange them to make a coherent paragraph.
- (a) (i) Every kind of service is provided to clients hoping to find their life partner.
(ii) Computers and romance.
(iii) Computer dating agencies and matrimonial websites are catching on in a big way to help make that match on earth.
(iv) Even the matching of horoscopes is done using the principles of astrology and numerology.
(v) However, they have invaded every other domain one can think of—why not matchmaking?
(vi) Surely that is an unlikely combination!

(or)

- (b) (i) This is because, in the west this amounts to only 800 dollars and they have little motivation to bring down the cost any further.
- (ii) Why is the cost of installing a telephone in India as high as Rs. 30,000?
- (iii) The emphasis instead is on adding features while keeping the cost constant.
- (iv) At such levels it would be immediately affordable to over 15 percent of Indian population.
- (v) It is here that scientists in India have to take the initiative.
- (vi) They must aim to reduce the cost of telephone and internet access to a much lower value, say Rs. 10,000.

15. Given below are two passages. Read any ONE of them and draw a flow chart.

- (a) The earth contains a large number of metals which are useful to man. One of the most important of these is Iron. The iron ore which we find in the earth is not pure. It contains some impurities which we must remove by smelting. The process of smelting consists of heating the ore in a blast furnace with coke and limestone and reducing it to metal. Blasts of hot air enter the furnace from the bottom and provide the oxygen which is necessary for the reduction of the ore. The ore becomes molten, and its oxides combine with carbon from the coke. The non-metallic constituents of the ore combine with the limestone to form a liquid slag. This floats on top of the molten iron, and passes out of the furnace through a tap. The metal which remains is pig iron. We can melt this down again in another furnace – a cupola – with more coke and limestone, and tap it out into a ladle or directly into moulds. This is cast iron.

(or)

- (b) Calcareous material like limestone/marl is one raw material. Argillaceous material like clay/shale is another raw material. Limestone/marl is crushed and powdered and sent to the storage silos. Clay/shale passes through washing and reaches the wash basins. The powdered limestone from the storage silo and the clay/shale from the wash basins are proportionately mixed and sent to the unit where they are ground. After grinding, the mixture becomes slurry. The slurry is passed through the correcting basin and the slurry storage tank into the rotary kiln. Coal which is crushed and dried and pulverised in the grinding ball mill reached the rotary kiln where the slurry is heated. From the kiln, the material reaches the cement clinker from where it reaches the stage for being cooled. After cooling, it passes into the clinker storage from where it reaches the clinker grinding elevators. Gypsum is added at this stage. From the grinding elevators, cement reaches the silos. From the silos, it becomes cement ready to be weighed and packed.

B.E./B TECH. DEGREE EXAMINATION, APRIL/MAY 2004.**First Semester**

Time : Three Hours

Maximum : 100 Marks

Answer ALL Questions

SECTION A

(10 × 2 = 20 Marks)

1. Write a single sentence definition for each of the following terms:

E.g. A Thermometre is an instrument used for measuring temperature.

- (a) Microphone
- (b) Calculator

2. Expand the following compound nouns:

E.g. Friction losses—Losses caused by friction.

- (a) Lock nut
- (b) Computer design
- (c) Roller mill
- (d) Heat content

3. Fill in the blanks in the following sentences with suitable prepositions :

- (a) One _____ India's priorities is growing more food.
- (b) There are countless opportunities _____ qualified computer personnel.
- (c) Gold is a rare metal _____ a beautiful yellow colour.
- (d) 10 degrees is the limit _____ which the nozzle controls the steam flow.

4. Correct the mistakes in the English in the given passage :

A famlier sigth in the Indian countriside these days is a gulvanised box – like steel structure with a long, sterdy handle monted on a masseve pedestel.

5. Change the active voice into passive voice in the following sentences:

- (a) This will prevent metal surfaces from coming into contact.
- (b) The Egyptians knew the art of jewellery making as early as 3000 BC.

6. Match the words in column A with their meanings in column B:

A

B

- | | |
|---------------|----------------|
| (a) Breeder | calm, peaceful |
| (b) Drawback | severe |
| (c) Tranquil | producer |
| (d) Stringent | disadvantage |

7. Make antonyms of the following words by adding suitable prefixes :
- Associate
 - Sufficient
 - Common
 - Normal/reliable
8. Fill in the blanks in the table given below with the appropriate form of the word :

VERB	NOUN	ADJECTIVE
		Maintainable
	Contamination	
Inform		
		Motivated

9. Fill in the blanks in the following sentences using the appropriate form of the verbs given in brackets:
- A decade ago the most vehement opposition to computerisation _____ (come) from people who _____ (believe) that it _____ (lead) to unemployment. There _____ (be) a hue and cry over this.
10. Complete the following sentences indicating the conditions in which something will happen:
- If passengers stand on the foot boards of the buses, _____.
 - If the engine is serviced regularly, _____.

SECTION B (5 × 16 = 80 Marks)

11. FLICKER

Walker examined hundreds of people who had never had any kind of fit or attack and found that about one in every twenty responded to carefully adjusted flicker. They experienced 'strange feeling' or faintness or swimming in the head; some became unconscious for a few moments or their limbs jerked in rhythm with the light. As soon as any such sensation was reported, the flicker was turned off to prevent a complete convulsion. In other subjects, the flicker had to be exactly matched with the brain rhythm to produce any effects. A feedback circuit, in which the flashing light was actually fired by the brain signals themselves, produced immediate epileptic seizures in more than half the people tested.

Driving down a tree-lined avenue with the sun flickering through the trunks at a certain rhythm can be very disturbing. There is a record of a cyclist who passed out on several occasions while travelling home down such an avenue. In his case the momentary unconsciousness stopped him from pedalling, so he slowed down to a speed at which the flicker no longer affected him and came round in time to save himself from falling. But a motor car has more momentum, and the chances are that it would keep going at the critical speed and influence the driver long enough to make him lose control altogether. There is no way of knowing how many fatal crashes have occurred in this way.

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In another case, a man found that every time he went to the cinema he would suddenly find that he was consumed by an overwhelming desire to strangle the person sitting next to him. On one occasion he even came to his senses to discover that he had his hands clutched around his neighbour's throat. When he was tested, it was found that he developed violent limb jerking when the flicker was set at twenty-four cycles per second, which is exactly the rhythm of film recorded at twenty-four frames a second.

The implications of the discovery are enormous. Everyday we are exposed to flicker in some way and run the risk of illness or fatal fits. The flash rate of fluorescent lights at 100 to 120 per second is too high for convulsions, but who knows what effect it may be having on those exposed to it for many hours each day?

(a) Choose the response that best reflects the meaning of the text: (4 × 1 = 4)

1. Walter was interested in the reactions of
 - (i) Epileptics
 - (ii) Normal people
 - (iii) Cyclists
 - (iv) Motorists
2. When the experiment was going on and it was noticed that people began to have strange feelings
 - (i) the experiment was stopped
 - (ii) the flicker was matched with their brain rhythm
 - (iii) a feedback circuit was used
 - (iv) they were allowed to have an epileptic fit
3. Flicker is likely to affect car drivers more than cyclists because
 - (i) cyclists can close their eyes for a few seconds
 - (ii) cars cannot slow down in time
 - (iii) the rhythm of flicker is faster for cyclists
 - (iv) cyclists cannot go fast enough to be affected
4. The man in the cinema wanted to strangle his neighbour because
 - (i) the film was very violent
 - (ii) he did not like his neighbour
 - (iii) he responded to the flicker of the film
 - (iv) he was mentally unsound

(b) State whether the following statements are true or false : (6 × 1 = 6)

1. Walter examined people who were subject to fits.
2. When they began to have a convulsion he stopped the experiment.
3. Most people do not respond to flashing lights.
4. The cyclist fell off his bicycle.
5. Drivers are affected very suddenly by flicker.
6. The man went to the cinema because he enjoyed strangling people.

(c) Choose the definition which best reflects the meaning of the word as it has been used in the text:

(6 × 1 = 6)

1. Flicker
 - (i) bright light
 - (ii) fluorescent light
 - (iii) flashing light
 - (iv) sunlight

2. Limb
 - (i) eye or ear
 - (ii) arm or leg
 - (iii) foot or hand
 - (iv) hair or skin
3. Seizure
 - (i) a fit
 - (ii) a feeling
 - (iii) a rhythm
 - (iv) a signal
4. Fired
 - (i) burnt up
 - (ii) knocked out
 - (iii) set off
 - (iv) held up
5. Momentum
 - (i) the faster something is going the more difficult it is to stop
 - (ii) the heavier something is the more difficult it is to stop
6. Overwhelming
 - (i) insane
 - (ii) inexplicable
 - (iii) irresponsible
 - (iv) irresistible
12. (a) Your uncle has offered to sponsor you for a three-week activity holiday with some training. You have to choose between mountaineering and trekking. Write a letter to your uncle thanking him for sponsoring you and explain your reasons for choosing either mountaineering or trekking.

(or)

(b) Write a letter to the editor of a newspaper highlighting any four serious problems related to traffic in a metropolitan city like Chennai. In your letter you should also suggest suitable measures in order to overcome the problems that you have highlighted.
13. (a) Describe a roof water tank in about 170—200 words highlighting its characteristics, its purpose, function, utility and also its advantages and disadvantages.

(or)

(b) With more and more vehicles on the roads it is becoming very risky for all vehicles that ply on the roads safely. Write in about 170—200 words, the measures that must be adopted in order to bring safety on the roads.
14. Two groups of sentences are given below. They are not in proper order. Choose any one group of sentences and write them in the correct order.
 - (a) (i) Soil bacteria and fungi live by digesting and recycling dead plant material such as leaves and seed cases.
 - (ii) While there is some lab-based experimental evidence to support this theory it has been difficult to prove it.
 - (iii) One wonders why most natural antibiotics come from soil fungi and bacteria.
 - (iv) Obviously, it is impossible for the bacteria to carry away their food supply and therefore they lace surrounding food with compounds that are toxic to other species.
 - (v) A simple explanation is that these organisms use antibiotics to protect their food supply.
 - (vi) A second explanation is that antibiotic production is rooted in the plant material that is the food source.

(or)

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- (b) (i) The viewers can manipulate the surrounding that he or she sees during a virtual reality simulation.
- (ii) Supercomputers are used to create virtual reality.
- (iii) Though virtual reality considered to be an industry still in its infancy, its applications seem limited only by our imagination.
- (iv) Virtual reality is the simulation of a three-dimensional environment that appears real to the viewer.
- (v) Thus virtual reality experience needs to be credible in order to enhance human creativity and productivity.
- (vi) A virtual reality simulation happens in real time or as the viewer watches.

15. Given below are two passages. Read carefully and answer any ONE of them:

- (a) Silver occurs in ores of several metals. The froth process of extracting silver accounts for about 75 percent of all silver recovered. Here the ore is ground to a powder, placed in large vats containing water suspensions of frothing agents and thoroughly agitated by jets of air. Depending on the agent used, either the silver-bearing ore or the gangue adhering to the bubbles of the froth is skimmed off and washed. The final refining is done using electrolysis. Represent this by means of a flow chart.

(or)

- (b) A manufacturing company realised the gross return of Rs.2,75,000 during 1980. Rs.75,000 was spent on maintenance of infrastructure, Rs.1,20,000 towards wages for marketing the products; Rs.30,000 was spent on transport and Rs.10,000 on commissions. Rs.30,000 was repaid towards loan. The remaining amount was reinvested in manufacture. Represent this allocation on a pie-chart showing the item of minimum expenditure, the item of major expenditure and work out each expenditure into percentage.

B.E/B.TECH. DEGREE EXAMINATION, JANUARY 2005

First Semester

Time: Three Hours

Maximum : 100 Marks

Answer All Questions

SECTION A

(10 × 2 = 20 Marks)

1. Match the words in column A with their meanings in column B:

A

B

- | | |
|---------------|--|
| (a) Objective | severe |
| (b) Hazard | aim |
| (c) Spell | danger |
| (d) Stringent | a condition caused by or as if by magical powers |

2. Expand the following compound nouns:

- (a) Power source
- (b) Steel chair
- (c) Control centre
- (d) Calculation speed

3. Change the following words into their opposites by adding suitable prefixes:

- (a) Ability
- (b) Violence
- (c) Fortune
- (d) Legal
- (e) Like
- (f) Regular
- (g) Moral
- (h) Suitable

4. Change the following sentences as directed:

- (a) Teachers can best sow the seed for any type of behaviour at a tender age. (into passive)
- (b) Many faults have been ascribed to dams by people. (into active)

5. In each of the following groups of words there is a word that does not belong to the group. Identify these words and say why they are different from others.

E.g.: Doctor, Nurse, Hospital, Nomad, X-ray

Ans: Nomad. All the other words are about health.

- (a) Incident, happening, event, experiment, occurrence
- (b) Lime, cement, juice, bricks, sand
- (c) Angular, rectangular, circular, triangular, muscular
- (d) Gold, silver, mercury, copper, iron

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6. Fill in the blanks with suitable forms of comparative adjectives:

- (a) A wise enemy is _____ (good) than a foolish friend.
- (b) Liberty is _____ (important) than food.
- (c) Petrol is _____ (costly) than kerosene.
- (d) The tiger is _____ (ferocious) than other animal.

7. Fill in the blanks in the following sentences with suitable prepositions:

- (a) The apartment consists _____ three bed-rooms, a kitchen and two bathrooms.
- (b) The accident took place because of my fault, so I had to pay _____ the damage.
- (c) It is terrible that some people are dying _____ hunger while others eat too much.
- (d) You know that you can depend _____ me whenever you need help.

8. Correct the mistakes in English in the following passage :

Oil, the major sources of energy in the world today have had a dramatic effect in the worlds economy. Until quiet recently, this demand for oil seems unlimited. This enormous demands motivate several multinational companies to invest in location of large deposits.

9. Fill in the blanks with the correct tense forms of the verbs given within brackets:

- (a) Over the last fifty years, computers _____ (develop) dramatically.
- (b) What _____ you _____ now? (do)
- (c) The accident that _____ (occur) in 1986 at Chernobyl nuclear reactor resulted in the loss of many lives.
- (d) When I _____ (have) my dinner, my friend came.

10. Write a single sentence definition for the following items :

- (a) A robot
- (b) A computer program

SECTION B

(5 × 16 = 80 Marks)

11. Read the following passage and answer the questions following it:

When the first white men arrived in Samoa, they found blind men, who could see well enough to describe things in detail just by holding their hands over objects. In France, just after the First World War, Jules Romain tested hundreds of blind people, and found a few who could tell the difference between light and dark. He narrowed their photosensitivity down to areas on the nose or in the fingertips. In Italy, the neurologist Cesare Lombroso discovered a blind girl who could 'see' with the tip of her nose and the lobe of her left ear. When a bright light was shone unexpectedly on her, she winced. In 1956 a blind school boy in Scotland was taught to differentiate between coloured lights and learned to pick out bright objects several feet away. In 1960 a medical board examined a girl in Virginia and found that, even with thick bandage over her eyes, she was able to distinguish different colours and read short sections of large print. The phenomenon is obviously not new, but it has reached new peaks of sensitivity in a young woman from a mountain village in the rurals.

Rosa Kuleshova can see with her fingers. She is not blind, but because she grew up in a family of blind people, she learned to read Braille to help them and then went on to teach herself to do other things with her hands. In 1962 her physician took her to Moscow, where she was examined by the Soviet Academy of Science, and emerged a celebrity, certified as genuine. The neurologist Shaefer made an intensive study with her and found that, securely

blindfolded with only her arms stuck through a screen, she could differentiate among three primary colours. To test the possibility that the cards reflected heat differently, he heated some and cooled others without affecting her response to them. He also found that she could read newsprint and sheet music under glass, so texture was giving her no clues. Tested by the psychologist Novomeisky, she was able to identify the colour and shape of patches of light projected on to her palm or on to a screen. She underwent rigidly controlled tests with a blindfold and a screen and a piece of card around her neck so wide that she could not see around it. Rosa read the small print in a newspaper with her elbow. And in the most convincing demonstration of all, she repeated these things with someone standing behind her pressing hard on her eyeballs. Nobody can cheat under this pressure; it is even difficult to see clearly for minutes after it is released.

(a) Choose the response which best reflects the meaning of the text:

1. The first Whitemen to visit Samoa found men who
 - (i) were not entirely blind
 - (ii) described things by touching them
 - (iii) could see with their hands
 - (iv) could see when they held hands
2. What is the main idea of the first paragraph?
 - (i) very few people have the sensitivity of the blind
 - (ii) blind people can manage to see things but only vaguely
 - (iii) the eyes are not the only way of seeing
 - (iv) it is possible to localise the photosensitive areas of the body
3. Why did Shaefer put the paper under glass?
 - (i) to make things as difficult as possible
 - (ii) to stop the reflection of heat
 - (iii) to prevent Rosa from feeling the print
 - (iv) to stop her from cheating
4. What was the most difficult test of Rosa's ability?
 - (i) to read through glass blindfolded
 - (ii) to identify the colour and shape of light on a screen while securely blindfolded
 - (iii) to carryout tasks with someone pressing on her eyeballs
 - (iv) to work from behind a screen, blindfolded and with a card round her neck

b) Decide whether the following statements are True or False :

1. Rosa Kuleshova lives on a mountain peak.
2. Her family taught her everything about seeing with her fingers.
3. Shaefer found that temperature did not affect her ability to differentiate between colours.
4. Her ability to read with her fingers did not depend on the feel of the print.

c) 1. The word 'patches' refers to

a. rays b. waves c. spots d. lines

2. Find a single word in paragraph two which means the same as 'thick bandages over her eyes'
3. Find a synonym for 'pickout' in the first paragraph
4. The texture of silk is smooth. The texture of granite is _____

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12. (a) Write a letter to the Registrar, Anna University inviting him to preside over the valedictory function of Youth Red Cross to be held during the 2nd week of February 2005. Give him the details regarding the date, time, venue, number of participants, purpose of the programme and the nature of the activities undertaken by the volunteers of Youth Red Cross during 2004-05.

(or)

- (b) Write a personal letter to your father (who happens to be the Headmaster of the local school) explaining the uses of a computer which has been presented to the school by a Philanthropist.
- 13 (a) Write a paragraph of about 200 words explaining the wisdom of investing money in articles of gold.

(or)

- (b) Write a paragraph of about 200 words highlighting six most serious problems that are caused by the increased growth in traffic due to vehicles and also offering suitable solutions to those problems.
14. Arrange the following jumbled up sentences into a coherent, logical paragraph:

- (a) (i) Both had a city-state type of government.
 (ii) Athens and Sparta were the two most-advanced Greek cities of Hellenic period.
 (iii) For example, Sparta was hostile, war-like and military.
 (iv) However the differences outweigh the similarities.
 (v) Whereas, Athens catered more towards the democratic and cultural way of life.
 (vi) Also both took slaves from the people they conquered.
 (vii) The latter city left its mark in the fields of art, literature, philosophy and science.
 (viii) Also, the former passed on its totalitarianism and superior military traditions to the latter.

(or)

- (b) (i) When there is a language barrier, communication is accomplished through sign language.
 (ii) Body language transmits ideas and thoughts by certain actions.
 (iii) Many of these symbols of whole words are very picturesque and exact and can be used internationally.
 (iv) Ever since humans have inhabited the earth, they have made use of various forms of communication.
 (v) Other forms of nonlinguistic language can be found in Braille, signal flags, Morse code and smoke signals.
 (vi) A nod signifies approval while shaking the head indicates a negative reaction.
 (vii) Generally their expression of thoughts and feelings has been in the form of oral speech.
 (viii) Nonetheless verbalisation is the most common form of communication.

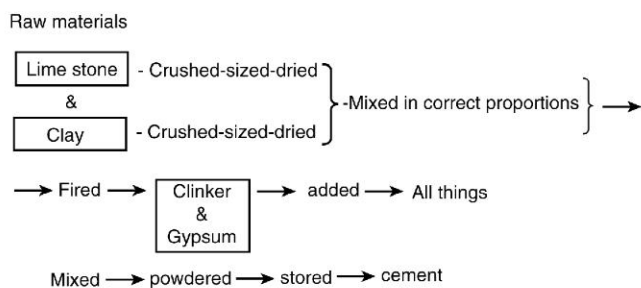
15. (a) Convert the following passage into a flow chart .

The earth contains a large number of metals which are useful to man. One of the most important of these is Iron. The Iron ore which we find in the earth is not pure. It contains some impurities which we must remove by smelting. The process of smelting consists of heating the ore in a blast furnace with coke and limestone and reducing it to metal. Blasts of hot air enter the furnace from the bottom and provide the oxygen which is necessary for the reduction of the ore. The ore becomes molten, and its oxides combine with carbon from the coke. The non-metallic constituents of the ore combine with the limestone to form a liquid slag. This floats on top of the molten iron and passes out of the furnace through a tap. The metal which remains is pig iron.

We can melt this again in another furnace - a cupola - with more coke and limestone, and tap it out into a ladle or directly into moulds. This is cast iron.

(or)

(b) Convert the following flow chart into a running passage of 200 words:

The Stages in Making Cement

B.E./ B.TECH. DEGREE EXAMINATION, JANUARY 2006.

First Semester

Time: Three Hours

Maximum: 100 Marks

Answer ALL Questions

SECTION A

(10 × 2 = 20 Marks)

1. Match the words in column A with their meanings in column B:

A	B
(a) Renowned	variety, having a difference
(b) Tranquillity	pollution
(c) Diversity	calm, peaceful
(d) Contamination	famous

2. Make nouns from the verbs given below by adding suitable prefixes:

A	B
(a) Protect	(b) inform
(c) Accept	(d) prefer
(e) Develop	(f) manage
(g) Require	(h) maintain

3. Fill in the blanks in the following sentences with the comparative forms of the adjectives given in brackets:

Oil, the major source _____ energy _____ the world today, has had a dramatic effect _____ the world's economy. Until, quite recently the demand _____ oil seemed unlimited.

4. Fill in the blanks with suitable forms of the verbs given in brackets:

- (a) India _____ (emerge) as the super power in Information Technology in a few years from now.
- (b) In recent times students from different parts of the world _____ (come) to study in Indian Universities.
- (c) India _____ (launch) its first satellite in the year 1990.
- (d) Computer experts _____ (be) in great demand today.

5. Read the following definition of a laboratory: "A laboratory is a room which is used for doing scientific experiments". Using this as a model, write definitions for the following in a sentence each:

- (a) A Robot
- (b) A Library

6. Edit the following passage by correcting the mistakes in spelling, grammar and punctuation:

At Chernobyl, the accident occurred while the operators were carry out a test on the turbogenerator with improper test procedures for safety point of view.

7. Change the voice of the following sentences:
(a) China produces thousands of electronic devices every year.
(b) Life-science companies employ various methods to control the global bio-industrial markets.
8. Say which word does not belong to the rest of the words in each group:
Follow the given format for your answer. *e.g.* doctor, nurse, hospital, leader.
Ans. : All the words are about are medical field but leader is not.
(a) tin, sand, copper, steel, zinc.
(b) mile, litre, tonne, kilogramme.
(c) television, radio, tape-recorder, newspaper.
(d) schools, deserts, teachers, colleges.
9. A compound noun such as 'power source' can be expanded as 'a source of power'. Similarly expand the following compound nouns:
(a) petrol engine (b) wooden box
(c) dam construction (d) computer memory
10. Complete the following sentences suitably:
(a) If you want to get good marks in the examinations _____
(b) If the pedestrians do not use the subways for crossing main roads _____

SECTION B

(5 × 16 = 80 Marks)

11. Read the following report and answer the questions that follow it:

The 20th century has witnessed a great scientific revolution. Its magnitude is very much greater than the Industrial Revolution or the biological Revolution witnessed up to the end of the 19th century. In the fields of physical and natural sciences, and engineering and technology there have been tremendous developments in the 20th century. In the 20th century great strides have taken place in the fields of atomic and space research. The old theory of indivisibility of atom was exploded. That the atom could be split has been demonstrated. This had led to great developments. On the one hand, there has been the making of atomic weapons. On the other hand, atomic energy has been put to constructive purposes. A number of atomic power stations have been constructed. Atomic energy has been used to drive ships. Efforts are also on to make it feasible to use atomic energy in automobiles. Space research has developed in leaps and bounds. The moon has been brought nearer the earth. Rockets and spacecrafts have been launched into the space in an effort to get data about the other-solar planets. Speculations are on for building interstellar spacecrafts.

There has been significant development in the fields of communication and electronics. Wireless and satellite communication system have brought societies and nations very close. Within an instant the message could reach across thousands of miles. The electronic media has become a boon to the society from the points of view of education and entertainment.

The progress in the field of chemistry has resulted in proliferation of all kinds of industries. Especially of use to the human society is the contribution of chemistry to agriculture. The production of fertilizers and pesticides has the way for more production of food items. The subject of metallurgy had become a major developing science. Further, the most significant developments of this field of science are that it has become interdisciplinary in nature. The application of chemistry to the medical and biological study is noteworthy.

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Similarly, rapid development has been noticed in natural sciences also. Besides the new methods of producing and using fertilizers and pesticides, new scientific methods of raising and managing crops have come up. The development in genetic research has grown so much that new insights have been obtained in the study of various systems in living organisms. More and more increased biproducts for consumption have come into existence. Genetic engineering is now at the threshold of bringing about another significant revolution in lifestyle. The study of plants and animals in relation to the environment is developing into another major useful science.

The great development in engineering and technology has resulted in the invention of numerous machines that make life easy for human beings. Revolution in the transport system, especially the introduction of the supersonic aviation has made world a global village. Besides the household gadgets, the robots are being introduced not only for domestic purposes, but also for industrial purposes. That is, more efficient work at the least possible time is now being promised. The introduction of computing machines has revolutionized all aspects of life. From the medical to the academic world, the computers have become the most reliable factor in the diagnosis and interpretation of diseases and problems.

All the great development in the physical sciences, natural sciences and engineering and technology have contributed to a more comfortable life. Efficiently in work is almost ensured. Saving of human energy from drudgery has been achieved. In short a magnificent revolution has taken place in human life because of scientific developments in the 20th century.

(a) Choose the most appropriate synonym which conveys the meaning of the word from the context of the text:

1. magnitude
 - (i) importance
 - (ii) size
 - (iii) quality
 - (iv) development
2. constructive
 - (i) construction
 - (ii) useful
 - (iii) critical
 - (iv) simple
3. proliferation
 - (i) developement
 - (ii) production
 - (iii) to increase in number
 - (iv) to get doubled in number
4. threshold
 - (i) beaten track
 - (ii) doorway
 - (iii) building
 - (iv) starting point
5. promised
 - (i) assured
 - (ii) given
 - (iii) spoken
 - (iv) taken

- (b) State whether the following statements are 'true' or 'false':
1. Industrial revolution took place in the 20th century.
 2. Rockets and Spacecrafts have been used for travel.
 3. Societies have become closer because of wireless and Satellite Communication System.
 4. Science has become interdisciplinary in nature.
 5. Genetic engineering can never bring another revolution in life style.
 6. Medical diagnosis has become more reliable because of computers.
- (c) Choose the response which best reflects the meaning of the text:
1. The word 'this' in the 1st paragraph refers to
 - (i) Newton's theory
 - (ii) the theory that atom cannot be split
 - (iii) the fact that atom can be split
 - (iv) atomic research
 2. The progress in the field of chemistry has helped in
 - (i) the development of many types of industries
 - (ii) the progress of space research
 - (iii) the innovations in communications field
 - (iv) the increase of computers.
 3. The introduction of the supersonic aviation has made
 - (i) life easier for every one
 - (ii) our world a bigger one
 - (iii) our world a smaller one
 - (iv) our world a healthy one
 4. The word 'this' in third paragraph refers to
 - (i) the field of natural science
 - (ii) the field of electronics
 - (iii) the field of metallurgy
 - (iv) the field of genetic engineering
 5. The developements in genetic research have provided
 - (i) new dimensions in the study of living organisms.
 - (ii) new outlook to science
 - (iii) new names to living organisms
 - (iv) new life to living organisms.

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12. Given below are two sets of jumbled sentences. Select any one and rewrite them in the right logical order:

- (a) 1. Human beings can walk, run, swim, and so on, but robots are usually confined to one place.
 2. Another advantage human beings have is the way the same person can do jobs as different as making a cup of tea or designing a new machine.
 3. It is a known fact that robots have many advantages over human beings
 4. Taking into account all these factors, it should be remembered that robots owe their existence, to human beings.
 5. However, it is also true that humans can do many things that robots can't.
 6. For example, humans can carry out a task without having to be told exactly how to do it, they don't have to be programmed.
 7. And unlike robots, people can know whether what they are doing is good or bad, and whether it is boring or interesting.
 8. Even if the robots are able to move, they can do so, only in a very limited way.
- (b) 1. But for this preheating mechanism, starting the diesel engine will be difficult.
 2. Therefore, diesel engines are heavier than petrol engines.
 3. The diesel engine is an increasingly popular engine in automobiles.
 4. Finally, diesel engines are noted for their noise, vibration and smoke.
 5. However, plugs are available to preheat the engine.
 6. But, it has its own disadvantages.
 7. Another disadvantage is that diesel engines are difficult to start in cold weather.
 8. For one, the higher compression that makes the diesel more efficient necessitates the use of heavier engine components.

13. (a) Your cousin wants to join a computer course during summer vacation and she has requested you to guide her in this regard. Write a letter of advice/guidance to her regarding the same.

Or

- (b) Write a letter to the editor of a newspaper highlighting any four-road safety problems faced by the citizens of Chennai. Also give suitable solutions on your letter to the problems you have highlighted.

14. Write two paragraphs on any ONE of the following topics (300 words)

- (a) Water as an invaluable natural resource, which has to be spent carefully.

Or

- (b) The merits and demerits of the best alternative source of energy for India.

15. (a) Write a set of eight recommendations that could be followed in order to keep the city of Chennai clean and green.

Or

- (b) Write a set of eight recommendations following which you could maintain your computer in good working condition.

ANNA UNIVERSITY

B.E./ B.TECH. DEGREE EXAMINATION, MAY 2003

Second Semester

Time: Three Hours

Answer ALL Questions

Maximum: 100 Marks

(10 × 2 = 20 Marks)

SECTION A

1. Match the words in column A with their meanings in column B:

A

B

- | | |
|-----------------|------------------------------|
| (a) Jargon | objective |
| (b) Equilibrium | attribute |
| (c) Target | state of being balanced |
| (d) Ascribe | highly technical expressions |

2. Rewrite the following in the indirect speech:

Interviewer: Will we be able to spread out to other planets?

Stephen Hawking: We shall probably manage a manned flight to Mars in the next century.

3. Rewrite the following pairs of sentences combining them into one each. Use the appropriate expressions to show their causal relations:

- (a) (i) The earth's ice cover is melting at high rates.
 (ii) Polar regions are warming faster than the planet as a whole.
- (b) (i) Several new blocks of buildings have been built there.
 (ii) The huge canopy of trees has disappeared.

4. Expand the following:

- (a) 150 rpm
 (b) 40 ppm
 (c) 273 K
 (d) 500 Btu/ft³

5. Fill in the blanks with suitable prepositions:

- (a) He submitted a proposal _____ dam construction _____ a particular place.
 (b) Renaissance added another 12,000 words _____ the English vocabulary.
 (c) Much powerful idiomatic English has come _____ card players, cowboys and jazzy musicians.

6. Using the hints given below, make sentences that express the purpose:

E.g. Experiment: demonstrate a principle

The purpose of an experiment is to demonstrate a principle.

An experiment is used to demonstrate a principle.

- (a) E-mail : ensure that the message reaches the addressee almost at once
 (b) Aerial : receive broadcast signals
 (c) Thermometre : measure the body temperature
 (d) Hammer : fix any object to the base using a nail

7. Write two sentences using:

- (a) whereas
 (b) but to show the contrast between two things, compared.

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8. Change the voice of the verbs in the following sentences and rewrite them:
 - (a) The researchers first grow the plant photosynthetically.
 - (b) In 2010, a person may easily be treated for heart disease and cancer, by doctors.
 - (c) He played a crucial role in solving the problem.
 - (d) Forests perform many ecological and social functions.
9. Form nouns from the following words adding suitable endings:
 - (a) satisfy
 - (b) retain
 - (c) replace
 - (d) repent

10. Punctuate the following passage:

She has an operation in the ear her husband says I have a real problem with my wife who behaves like a 56 year old teenager.

SECTION B

(5 × 16 = 80 Marks)

11. Read the passage carefully, and then answer the following questions:

Getting a chocolate out of a box requires a considerable amount of unpacking: the box has to be taken out of the paper bag in which it has arrived; the cellophane wrapper has to be torn off, the lid opened and the paper removed; the chocolate itself then has to be unwrapped from its own piece of paper. It is now becoming increasingly difficult to buy anything that is not wrapped in cellophane, polythene, or paper.

The package itself is of no interest to the people, who usually throw it away immediately. Useless wrapping accounts for much of the heap of garbage in the streets. So why is it done? Some of it, like the cellophane on meat is necessary, but most of the rest is simply competitive selling. This is absurd. Packaging is using up resources and messing up the environment.

Little research is being carried out on the costs of alternative types of packaging. Just how possible is it, for instance, for local authorities to salvage paper, pulp it, and recycle it as egg-boxes? Would it be cheaper to plant another forest? Paper is the material most used for packaging – but very little is recycled.

A machine has been developed that pulps paper then processes it into packaging, e.g. egg-boxes and cartons. This could be easily adapted for local use. It would mean that people would have to separate their refuse into paper and non-paper, with a different dustbin for each. Paper is, in fact, probably the material that can be most easily recycled; and now, with massive increase in paper prices, the time has come at which collection by local authorities could be profitable.

Recycling of this kind is already happening with milk bottles, which are returned to the dairies, washed out, and refilled. But both glass and paper are being threatened by the growing use of plastic. More and more dairies are experimenting with plastic bottles. If all the milk bottles necessary were made of plastic, then British dairies would be producing the equivalent of enough plastic tubing that would encircle the earth every five or six days!

The trouble with plastic is that it does not rot. Some environmentalists argue that the only solution to the problem of ever growing mounds of plastic containers is to do away with plastic altogether in the shops, a suggestion unacceptable to many manufacturers who say there is no alternative to their handy plastic packs.

More research is needed for the recovery and reuse of various materials and for the cost of collecting and recycling containers as opposed to producing new ones. Unnecessary packaging, that is used just once, can be avoided. But it is not so much a question of doing away with packaging as using it sensibly. What is needed now is a more sophisticated approach to packaging. Let it be simplified to a considerable extent to minimise land pollution.

(a) Choose the response which best reflects the meaning of the text:

1. The 'local authorities' are
 - (i) the Town Council.
 - (ii) the police.
 - (iii) the paper manufacturers.
 - (iv) the most influential citizens.
2. If paper is to be recycled
 - (i) more forests will have to be planted.
 - (ii) the use of paper bags will have to be restricted.
 - (iii) people will have to use different dustbins for their rubbish.
 - (iv) the local authorities will have to reduce the price of paper.
3. British dairies are
 - (i) producing enough plastic tubing to go round the world in less than a week.
 - (ii) giving up the use of glass bottles.
 - (iii) increasing the production of plastic bottles.
 - (iv) reusing their old glass bottles.
4. The environmentalists think that
 - (i) more plastic packaging should be used.
 - (ii) plastic is the most convenient form of packaging.
 - (iii) too much plastic is wasted.
 - (iv) shops should stop using plastic containers.
5. The author thinks that
 - (i) the function of packaging is not important.
 - (ii) people will soon stop using packaging altogether.
 - (iii) not enough research has been done into the possibilities of recycling.
 - (iv) the cost of recycling is so great that it is better to produce new materials than use old ones.

(b) State whether the following statements are true or false:

1. Too many products nowadays are wrapped in unnecessary packaging.
2. The countryside is being spoilt by the overproduction of packaging.
3. It is possible to use paper again.
4. The rising price of paper will make it worthwhile for local authorities to collect waste paper.
5. Plastic is difficult to destroy.

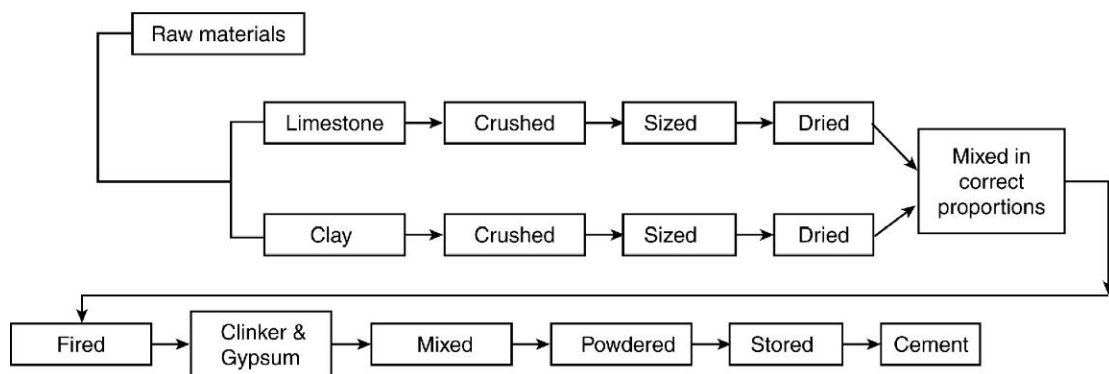
(c) Choose the meaning or explanation which best fits the context in which it is used:

1. Confined
 - (i) used for
 - (ii) restricted to
 - (iii) needed for
 - (iv) suited to
2. Accounts for
 - (i) makes up
 - (ii) compensates for
 - (iii) is recovered from
 - (iv) is kept out of

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3. So why is it done?
 - (i) Why do people buy things they don't need?
 - (ii) Why is so much wrapping thrown away?
 - (iii) Why do the shops try to sell things people don't want?
 - (iv) Why is so much unnecessary wrapping used?
4. Messing up
 - (i) spoiling
 - (ii) altering
 - (iii) improving
 - (iv) poisoning
5. Recycled
 - (i) reduced
 - (ii) reproduced
 - (iii) re-used
 - (iv) retailed
6. Handy
 - (i) attractive
 - (ii) easy to hold
 - (iii) convenient
 - (iv) easy to destroy

12. (a) Convert the following flow chart into a paragraph of about 150 words. Use an introductory and a concluding sentence with proper sequential expressions and appropriate connectives.

The Process of Making Cement

(or)

- (b) Given below is a process description. Read it and draw a flow chart representing the process described.
Rayon is a man-made fibre. It is, in fact, a reconstituted natural fibre-cellulose. Rayon is made by dissolving cellulose in a solution of sodium hydroxide, or caustic soda, as it is usually called. The cellulose is obtained from shredded wood pulp. The dissolved cellulose is formed into threads by forcing it through a spinneret in a setting bath of dilute sulphuric acid. The threads are drawn from the setting bath, wound on a reel, washed, then dried on a heated roller and finally wound on to a bobbin.
13. (a) "Computer, its Parts & Uses" – Write two paragraphs on this topic of 200 words each.
(or)
(b) Write a report of the road accident you've witnessed in about 200 words.

14. (a) As the Maintenance Engineer of Software Company, give a set of eight instructions that are to be followed by the lab assistants while handling sophisticated equipment.
(or)
(b) You have decided to go on a week long tour with all your family members. Prepare a checklist that consists of eight items that are to be checked before you leave the house.
15. (a) Write a letter to your brother who is going to write his Board Examination in April 2003. Offer your suggestions and recommendations to him (at least 8) as to how he should prepare for the Examination.
(or)
(b) Read the following advertisement and write a letter of application for the post advertised enclosing your bio-data.

Sales Engineers

A well-established company invites applications from aggressive and competent sales persons to sell micro-computer systems and related products.

Our Requirements:

- a university degree in Engineering
- industry experience
- good command over English and Tamil

Attractive remuneration package will be offered to the right candidate. Please apply with full career details and salary expectation to the Human Resources Manager, P.O. Box. 12543, General Post Office, Chennai.

B.E./B.TECH. DEGREE EXAMINATION, APRIL/MAY 2003

Second Semester

Time: 3 hours

Maximum: 100 Marks

Answer ALL Questions

SECTION A

(10 × 2 = 20 Marks)

1. Match the words in column A with their meanings in column B:

(4 × ½ = 2)

A	B
(a) Inedible	schedule
(b) Afforestation	importance
(c) Regimen	unfit to eat
(d) Primacy	expansion of forests

2. Fill in the blanks with appropriate prepositions:

(8 × ¼ = 2)

The present day computer viruses are very different _____ their ancestors. Earlier, these programmes were spread _____ users who shared programmes and data via floppies. These viruses either hid _____ the boot sector _____ floppy disks or _____ programme files, infecting other files when programmes were launched. But today, they spread _____ a dizzying speed _____ way of file transfers and e-mail _____ the Internet.

3. Complete the following sentences by using appropriate expressions of contrast like 'but', 'whereas', etc., to bring out the differences between the two types of technology. Do not use any expression more than once:

(4 × ½ = 2)

- (a) Mass production demands a heavy investment of capital, _____ production by the masses requires a small investment.
- (b) Production by the masses uses simple tools; mass production _____ employs sophisticated machinery.
- (c) _____ mass production technology is reserved for the rich and the powerful, the people's technology gives admittance to all.
- (d) In mass production man is the servant of machines. In production by the masses, _____ man is the master of machines.
4. Select any two from the words given in the box and use them as nouns and as verbs in separate sentences:
E.g. Project: (a) The project (N) was implemented last year.
(b) The picture was projected (V) on the screen.
5. Fill in the following blanks with the appropriate forms of the words and complete the table: (8 × ¼ = 2)

NOUN	ADJECTIVE	PERSON CONCERNED
Technology		
	Sociological	
		Botanist
Pathology		

6. The sentences given below express the idea of purpose. Use the hints given below each sentence and construct another sentence in the same pattern: (2 × 1 = 2)

- (a) We use cameras for taking photographs. _____ robots _____ (perform) heavy and dangerous jobs.
- (b) The purpose of a safety valve is to release excess pressure _____ catalyst _____ speed up a chemical process.

7. Rewrite the following expressions as shown in the given example: $(4 \times \frac{1}{2} = 2)$
 E.g. 'The pipe is 3 feet long' can be written as 'a 3-foot pipe'.
 (a) a tank with a capacity of 1000 litres
 (b) a walk of five miles
 (c) a project grant of Rs.60 lakhs
 (d) a symposium lasting for three days
8. Fill in the blanks with suitable passive forms of verbs given in brackets: $(4 \times \frac{1}{2} = 2)$
 The clay used by Spartek is really sediment deposits which _____ (collect) at the bottom of irrigation tanks.
 This mined clay _____ (bring) to the Tirupathi plant and _____ (mix) with other ingredients and _____ (wetgrind) into a fine slip.
9. Edit the following passage by correcting the mistakes in spelling, grammar and punctuation: $(8 \times \frac{1}{4} = 2)$
 Faradays experiments wear onli the first steps but he had shown quiet clearly that magnets could be use to produce an electric current
10. Describe very briefly the process involved in the extraction of sugarcane juice. (2)

SECTION B $(5 \times 16 = 80 \text{ Marks})$

11. Read the passage and answer the questions that follow it:

THE UNDERWORLD

Let us take a brief look at the planet on which we live. As earth hurtles through space at a speed of 70,000 miles per hour, it spins, as we all know, on its axis, which causes it to be flattened at the Poles. Thus, if you were to stand at sea level at the North or South Pole you would be 13 miles nearer the centre of the earth than if you stood on the Equator.

The earth is made up of three major layers—a central core, probably metallic, some 4000 miles across, a surrounding layer of compressed rock, and to top it all a very thin skin of softer rock, only about 20 to 40 miles thick – that's about as thin as the skin of an apple, talking in relative terms. The pressure on the central core is unimaginable. It has been calculated that at the centre it is 60 million pounds to the square inch, and this at a temperature of perhaps 10,000 degrees Fahrenheit. The earth's interior, therefore, would seem to be of liquid metal - and evidence for this is given by the behaviour of earthquakes.

When an earthquake occurs, shock waves radiate from the centre just as waves radiate outwards from the point where a stone drops into a pond. And these waves pulsate through the earth's various layers. Some waves descend vertically and pass right through the earth, providing evidence for the existence of the core and an indication that it is fluid rather than solid. Thus, with their sensitive instruments, the scientists who study earthquakes, the seismologists, can in effect X-ray the earth.

Iceland is one of the most active volcanic regions of the world. And it was to Iceland that Jules Verne sent the hero of his book *"A Journey to the Centre of the Earth"*. This intrepid explorer clambered down the opening of an extinct volcano and followed its windings until he reached the earth's core. There he found great oceans, and continents with vegetation. This conception of a hollow earth we now know to be false. In the 100 years since Jules Verne published his book, the science of vulcanology, as it is called, has made great strides. But even so the deepest, man has yet penetrated is about 10,000 feet. This hole, the Robinson Deep mine in South Africa, barely scratches the surface; so great is the heat at 10,000 feet that were it not for an elaborate air-conditioning system, the miners working would be roasted. Oil borings down to 20,000 feet have shown that the deeper they go, the hotter it becomes.

The temperature of the earth at the centre is estimated to be anything between 3,000 and 11,000 degrees Fahrenheit. Some scientists believe that this tremendous heat is caused by the breaking-down of radio-active elements, which release large amounts of energy and compensate for the loss of heat from the earth's surface. If this theory is correct, then we are all living on top of a natural atomic powerhouse.

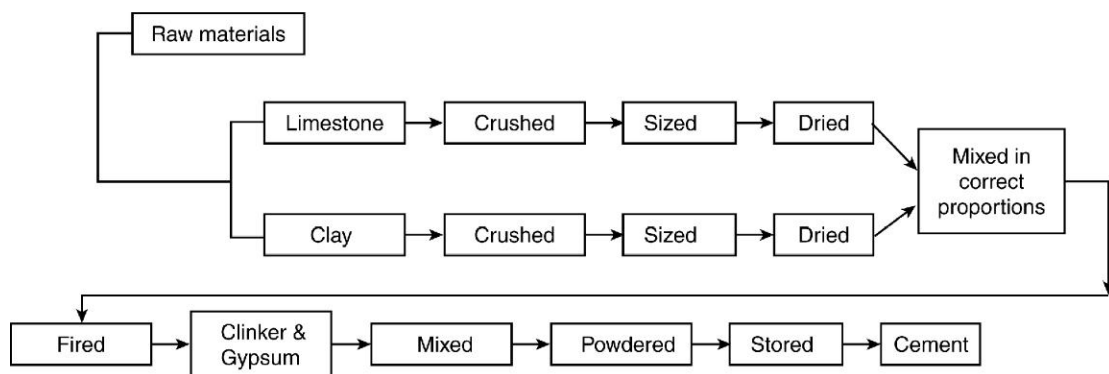
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- (a) Choose the response which best reflects the meaning of the text: (6 × 1 = 6)
1. The outer layer of the Earth is compared to the skin of an apple because
 - (i) it is only 20 to 45 miles thick
 - (ii) it is thin in proportion to the Earth's mass
 - (iii) it is relatively thin compared with the central core
 - (iv) it is softer than the other layers
 2. Which of the following is not true?
It is thought that the interior of the Earth is not solid because
 - (i) there is great pressure at the centre
 - (ii) earthquake waves can move vertically
 - (iii) the outer layer is made of rock
 - (iv) the heat at the centre is too great
 3. The Robinson Deep mine in South Africa is
 - (i) too deep to work in
 - (ii) too hot to work in
 - (iii) still in use
 - (iv) very close to the surface
 4. Since the publication of Jules Verne's book it has been proved that
 - (i) the centre of the earth is not hollow
 - (ii) oil borings cannot go deeper than 20,000 feet
 - (iii) the earth is hot at the centre because heat is lost at the surface
 - (iv) the earth is in danger of exploding
 5. The behaviour of earthquakes is the evidence to show that,
 - (i) the outer layer is not semi-solid
 - (ii) the interior of the earth is not solid
 - (iii) the interior layer consists of compressed rock
 - (iv) earthquakes can be controlled
 6. An elaborate air-conditioning system was indispensable in Robinson Deep Mine because of the
 - (i) excessive internal pressure
 - (ii) extreme cold condition
 - (iii) excessive internal heat
 - (iv) depth of the mine itself
- (b) Decide whether the following statements are true or false: (6 × 1 = 6)
1. If you stand at the Equator you will be closer to the centre of the Earth than if you stand at the Poles.
 2. The shock waves from an earthquake cannot pass through the Earth's central core.
 3. Jules Verne suggested that the Earth's centre was hollow.
 4. It is not known exactly how hot it is at the centre of the Earth.
 5. The earth travels through the space at a speed of 90,000 miles per hour.
 6. The earth is compared to a natural atomic power house.

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3. So why is it done?
 - (i) Why do people buy things they don't need?
 - (ii) Why is so much wrapping thrown away?
 - (iii) Why do the shops try to sell things people don't want?
 - (iv) Why is so much unnecessary wrapping used?
4. Messing up
 - (i) spoiling
 - (ii) altering
 - (iii) improving
 - (iv) poisoning
5. Recycled
 - (i) reduced
 - (ii) reproduced
 - (iii) re-used
 - (iv) retailed
6. Handy
 - (i) attractive
 - (ii) easy to hold
 - (iii) convenient
 - (iv) easy to destroy

12. (a) Convert the following flow chart into a paragraph of about 150 words. Use an introductory and a concluding sentence with proper sequential expressions and appropriate connectives.

The Process of Making Cement

(or)

- (b) Given below is a process description. Read it and draw a flow chart representing the process described.
Rayon is a man-made fibre. It is, in fact, a reconstituted natural fibre-cellulose. Rayon is made by dissolving cellulose in a solution of sodium hydroxide, or caustic soda, as it is usually called. The cellulose is obtained from shredded wood pulp. The dissolved cellulose is formed into threads by forcing it through a spinneret in a setting bath of dilute sulphuric acid. The threads are drawn from the setting bath, wound on a reel, washed, then dried on a heated roller and finally wound on to a bobbin.
13. (a) "Computer, its Parts & Uses" – Write two paragraphs on this topic of 200 words each.
(or)
(b) Write a report of the road accident you've witnessed in about 200 words.

B.E./B.TECH. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2003**Second Semester**

Time : Three Hours

Maximum : 100 Marks

Answer ALL Questions

SECTION A

(10 × 2 = 20 Marks)

1. Represent the meaning of the following passage in the form of a diagram:
The structure of a building essentially consists of two parts namely the superstructure which is above the plinth level and the substructure which is below the plinth level.
2. Give the American English equivalents of the following British English words:
(a) Lift (b) Chemist
3. Divide the following words into syllables and underline the stressed syllable:
(a) Technology (b) Communication
4. Use the following homophones in sentences to distinguish their meanings:
(a) Weather (b) Whether
5. List any two important pre-reading activities.
6. List any two important post-reading activities.
7. Rewrite the sentence using 'so that': Many ores are too wet to be used directly in the blast furnace.
8. Rewrite the sentence using 'so that': The iron ore is crushed so as to obtain uniform size particles.
9. Correct the mistakes, if any, in the spellings of the following words :
(a) managable (b) tendancy
10. Punctuate the following passage:
Inventions of the taperecorder video tape compact disc dvd cable tv and the internet have made high quality music and movies accessible to any place any time.

SECTION B

(5 × 16 = 80 Marks)

11. Discuss in about 200 words 8 problems you experience when listening to a news bulletin in British / American English.
12. (a) You are interested in buying a two-wheeler. Prepare a list of eight important questions to ask a sales person about the product.

(or)

- (b) Your friend is interested in learning to ride a two-wheeler. Give eight important instructions on how to ride a two-wheeler.
13. (a) Read the passage and answer the questions that follow it:
Compressed Natural Gas (CNG) is a safe fuel. Being lighter than air, it disperses easily into the atmosphere and does not form a sufficiently rich mixture for combustion to take place. CNG is 130 octane, which is considerably higher than 93 octane for petrol; consequently, a CNG vehicle is more energy-efficient. Higher octane rating allows higher compression ratios and improved thermal efficiency thus, reducing carbondioxide emissions. CNG allows the use of catalytic converter more efficiently than diesel. Compared to petrol or diesel, CNG vehicles emit 40% less of nitrous oxide (a toxic gas that creates smog), 90% less of hydrocarbons (which carry carcinogens), 80% less of carbonmonoxide (a poisonous pollutant) and 25% less of carbon dioxide (a major green house gas). Further, noise level of CNG engine is much lower than that of diesel.

CNG technology is in a state of evolution and therefore changing all commercial vehicles to single-fuel CNG might not be feasible. The entire investment in changing the vehicles to CNG mode and acquiring new vehicles within a short span will lead to ageing of all the vehicles at approximately the same time. A huge cost required to set up the infrastructure for CNG in a very short span is bound to reflect in budgetary deficit. Further, any mishap or disruption in a 1200 km pipeline supplying CNG can bring the entire public transport in Delhi to a standstill.

A dedicated CNG vehicle can be stranded on the way for want of gas due to limited number of CNG filling stations. Therefore, a dedicated CNG vehicle has to be close to a refueling facility, limiting its driving range. According to the Supreme Court order, the entire public transport is to be converted to only single-mode CNG and hence, dual fuel technology cannot be operated in Delhi for public transport. As, at present, CNG facilities are not available outside Delhi, tourist and transit buses that ply outside Delhi do not have access to CNG outside the city. Currently there are other problems: (i) it takes hours for refuelling of CNG vehicles because of long queues due to inadequate number of filling stations. (ii) most of the filling stations in Delhi are located in the southern half of the ring road because of which the vehicles have to travel a long way for filling gas and (iii) paucity of trained mechanics for CNG kits has made repairs expensive. Commitment is required on the part of the government to improve the infrastructure quickly to eliminate the long queues.

1. Answer the following questions in not more than 25 words each:
 - (i) What are 'carcinogens'?
 - (ii) Why is carbondioxide called a green house gas?
 - (iii) What is meant by 'a dedicated CNG vehicle'?
 - (iv) Give a suitable title to the passage.
2. Say whether the following statements are True or False:
 - (i) Because CNG is lighter than air, it doesn't catch fire easily when mixed with atmospheric air.
 - (ii) CNG technology has reached a state of perfection.
 - (iii) Trained mechanics for CNG kits are available in plenty.
 - (iv) Lack of natural gas resource is a serious problem in implementing CNG technology in India.

(or)

- (b) Read the table and answer the questions that follow it:

Registered motor vehicles in metropolitan cities (in thousands.)

Year	Kolkatta (K)	Chennai (C)	Mumbai (M)	Total (K + C + M)	Delhi
1986	339	228	480	1047	961
1991	475	544	629	1648	1813
1994	545	689	608	1842	2239
1998	664	975	860	2499	3033

1. Answer the following questions in not more than 25 words each:
 - (i) What is the table about?
 - (ii) What is a metropolitan city?
 - (iii) What is the relationship between years and total registration of motor vehicles?
 - (iv) Compare Kolkatta and Chennai in the aspect of registered motor vehicles.
 - (v) Compare Chennai and Mumbai in the aspect of registered motor vehicles.
 - (vi) Why are details of Delhi given as a separate column?
 - (vii) Give the descending order of cities based on the average registration for the last two years.
 - (viii) Give any one important information inferred from the table.

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14. (a) Read the following advertisement. Write a job application letter with a bio-data. Assume suitable addresses and qualifications. Wanted Oracle Developers. Qualification: B.E./M.C.A. Experience: Working on Oracle Developer's tools. Minimum experience: 2 years; Maximum experience: 5 years; Location: Bangalore, Chennai.
(or)
(b) Write a report in about 200 words to a campus journal on eight cocurricular activities of an academic year in your institution.
15. (a) Write a passage in about 200 words on the working of a mechanism (e.g. dry cell batteries). Underline "cause and effect" and "purpose" expressions.
(or)
(b) Write a passage in about 200 words on an industrial process (e.g. clay tile making). Underline the "passive constructions" and the "discourse markers".

B.E./B.TECH. DEGREE EXAMINATION, APRIL / MAY 2004**Second Semester
(Common to All Branches)**

Time: Three Hours

Maximum: 100 Marks

Answer ALL Questions

SECTION A

(10 × 2 = 20 Marks)

1. Match the words in column A with their meanings in column B:

A	B
(a) Nutrition	native
(b) Indigenous	objective, result aimed at
(c) Target	conservation
(d) Preservation	nourishment

2. Give four words beginning with the prefix 'self' and four words beginning with the prefix 'super'.

3. Fill in the gaps in the following passage with suitable prepositions:

The progress _____ the field _____ chemistry has resulted _____ the development _____ all kinds _____ industries. The applications _____ chemistry _____ the fields _____ medical and biological are significant.

4. Rewrite the following sentences in the reported speech:

- (a) The announcer said, "The Cheran Express is late by two hours".
 (b) The director said, "The Company has not been able to achieve its production target this year".

5. Fill in the blanks in the table given below with the appropriate forms of the words:

NOUN	ADJECTIVE	PERSON CONCERNED
Geology	Geological	Geologist
Chemistry		
		Botanist
	Natural	
Technology		

6. Make sentences expressing purpose using the hints given below:

E.g. aerial : receive broadcast signals

Ans: An aerial is used to receive broadcast signals.

(or)

An aerial is used for receiving broadcast signals.

- (a) carbon paper : make duplicate copies
 (b) barometer : measure atmospheric pressure

7. Correct the mistakes in spelling, grammar and punctuation in the following passage and rewrite it. You can find 8 mistakes in this passage:

Bamboos have been use by human beings since time immemorial. But it is only in the last four to five dicades that industries have came to recognise their value. owing to the instalation of india paper mills in bamboo has become a valuable resourse.

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8. Give the American spellings for the following British equivalents:

British English**American English**

- (a) programme
- (b) theatre
- (c) industrialisation
- (d) colour

9. Rewrite the given expressions as shown in the example.

E.g. 'The pipe is 3 feet long' can be written as 'a 3-foot pipe'

- (a) a walk of five kilometers
- (b) a seminar lasting for three days
- (c) a DC supply of 240 volts
- (d) a tank with a capacity of 2000 litres

10. Join the 'causes' in Column 'A' with the 'effects' found in Column B using cause and effect expressions like 'because', 'because of', 'caused by', 'due to', and 'owing to' and make sentences:

A

- (a) Loud horns and blaring loudspeakers
- (b) Depletion of bamboo forests
- (c) Chemical pollution
- (d) Construction of big dams

B

- damage to ear-drums
- increase in soil erosion
- greenhouse effect and ozone depletion
- evacuation of thousands of families

SECTION B

(5 × 16 = 80 Marks)

11. Read the given passage and answer the questions that follow:

The secrets of sleep were a mystery for centuries simply because there was neither the means to explore them, nor the need. Only when candles gave way to gas light and double his output by working shifts around the clock, did people seriously start wondering if sleep could be a waste of time. Our ability to switch night into day is very recent, and it is questionable if we will ever want, or be able, to give up our habit of enjoying a good night's sleep. However, a remarkable research project in London has already discovered a few people who actually enjoy insomnia. Even chronic insomniacs often get hours more sleep than they think. But, by placing electric contacts beside the eyes and on the head, it is possible to check their complaint by studying the tiny currents we generate which reveal the different brainwaves of sleep and wakefulness. This has shown that for some people seven or eight hours of sleep a night are quite unnecessary.

A lot of recent work has shown that too much sleep is bad for you, so that if you are fortunate enough to be born with a body which needs only a small amount of sleep, you may well be healthier and happier than someone who sleeps longer.

Every attempt to unravel the secrets of sleep, and be precise about its function, raises many problems. The sleeper himself cannot tell what is going on and, even when he wakes, has only a very hazy idea of how good or bad a night he has had. The research is expensive and often unpopular, as it inevitably involves working at night. Only in the last few years have experts come up with theories about the function of sleep and the laws which may govern it.

The real advance in sleep research came in 1937 with the use of the electroencephalogram. This machine showed small—50 microvolt—changes in the brain, so, for the first time, we could observe sleep from moment to moment. Before that time one could put the person to bed, watch him mumble, toss, turn, bring back a few rough memories of dreams, and that was about all. In 1937 it was possible to read out these changes, second by second. Then in 1959 two other things happened. Kleitman and Aserinsky, as they were looking at eye movements, trying to understand the brainwaves, noticed that after about ninety minutes there would be a burst of the EEG, as if the person was awake, and the eyes would move rapidly. It was not hard to guess that it was a dream. And indeed it was. Waking people up during that period, they found they were dreaming; waking them up at other periods, they found no dreams.

The electroencephalograph shows that when we fall asleep we pass through a cycle of sleep stages. At the onset of sleep, the cycle lasts about ninety minutes during which you pass through stages one, two and three to stage four. This is the deepest form of sleep, and from it you retreat to stage two, and from there into REM, or rapid eye movement sleep. Here, for ten minutes on the first cycle and then gradually longer, it is thought that we do most of our dreaming.

Studies of people who volunteered to be locked up for weeks in an observation chamber with no idea of whether it is night or day, give remarkable results. We are not in fact, twenty-four hour creatures. Put people in such circumstances and, even though the patterns of sleep continue, the day is extended to about twenty-five and a half hours. Without any clues to time, these people go to sleep the first night about an hour later than usual, the next night an hour later, and the next night. So that, after about ten days, the person is going to sleep at three O'clock in the afternoon, thinking that he is still going to sleep at midnight.

Today, jet-lag is a familiar hazard for the seasoned traveller. Travel across time zones plays havoc with the biological clock rhythm of the human body. For the active pilot, who is rarely in one place enough to know if it is time for breakfast or dinner, the impact of jet-lag on his sleep is critical. Several air disasters have been partly caused by overtired pilots ignoring the natural laws of sleep. Much research is directed to finding out what these laws are and to what extent pilots and astronauts dare disobey them. But they are laws which affect all of us, and not just pilots.

- (a) Choose the response which best reflects the meaning of the text: (6 × 1 = 6)
1. Only after the invention of electricity did people start
 - (i) to really enjoy insomnia
 - (ii) asking themselves if sleep was a waste of time
 - (iii) to need to do research into sleep
 - (iv) giving up the habit of sleeping so much
 2. It seems that most people
 - (i) need a lot of sleep
 - (ii) sleep too much
 - (iii) need less sleep than we thought
 - (iv) need more sleep than we thought
 3. The electroencephalograph records
 - (i) eye movements
 - (ii) the frequency of dreams
 - (iii) the time it takes to have a dream
 - (iv) small currents in the brain
 4. Dreams seem to be associated with
 - (i) deep sleep
 - (ii) rapid eye movements
 - (iii) jet-lag
 - (iv) overtiredness
 5. The people in the observation chamber
 - (i) went to sleep an hour earlier than usual each night
 - (ii) started to go to bed in the afternoon
 - (iii) slept for a much longer period than usual
 - (iv) went to sleep about an hour later than usual
 6. Jet-lag means
 - (i) being unable to sleep properly on aeroplanes
 - (ii) the clock says it is one time the body says it is another
 - (iii) it is a different time in different parts of the world
 - (iv) prolonging the day from twenty-four hours to twenty-five and a half hours

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- (b) State whether the following statements are true or false : (4 x 1=4)
1. People who suffer from insomnia often get much more sleep than they imagine.
 2. Research into sleep is now quite easy.
 3. When people dream, their eyes move.
 4. The cycle of sleep-stages lasts ten minutes.
- (c) Choose the definition which best fits these words or phrases as they are used in the text : (6 x 1 =6)
1. Gave way
 - (i) were rejected in favour of
 - (ii) gradually replaced
 - (iii) were replaced by
 - (iv) came back into use after
 2. Which of the following is not a suitable alternative for convert?
 - (i) change
 - (ii) turn
 - (iii) altar
 - (iv) transform
 3. Unravel
 - (i) disentangle
 - (ii) disrupt
 - (iii) disturb
 - (iv) discredit
 4. seasoned traveler
 - (ii) someone who is accustomed to travelling
 - (iii) someone who does not like travelling
 - (iv) someone who suffers from travelling
 5. Impact
 - (i) result
 - (ii) loss
 - (iii) effect
 - (iv) cause
 6. Clues
 - (i) clockwork
 - (ii) certainty
 - (iii) assistance
 - (iv) information
12. (a) Read the following advertisement published in "The Hindu" dt.29.3.2004 and write a letter of application.

Hyundai a 50 crore plus company, the leader in the automobile industry requires the following personnel:

Deputy Manager, Design and Development

Requirements : B.E./B.Tech. graduates with 10 to 12 years of experience in an industry.

Apply to : Human Resources Department
 'HYUNDAI' Auto Limited
 14, West Bank Street
 M.M. Nagar
 Chengalpattu District.

(or)

- (b) You happen to live in an area where political meetings are held frequently. Write a letter to the editor of a newspaper highlighting the problems experienced on account of noise pollution and suggest the steps that must be taken to solve the problem.
13. (a) Write eight instructions that are to be followed by the citizens of India in order to preserve the environment.
(or)
(b) Make a list of eight instructions which can be followed by computer users to maintain a computer in good working condition.
14. (a) Your family is about to leave for Ooty on a two-week holiday. Your father has asked you to prepare a checklist of things to be done before you leave the house. Prepare an eight-item checklist to give to your father. Remember to give a title to your checklist.
(or)
(b) Imagine that you have to go to New Delhi to appear for an interview. Make an eight-item checklist with a proper title for your reference.
15. (a) Write two paragraphs comparing the newspaper and the television as media of mass communication. Each of the paragraphs should not exceed 200 words.
(or)
(b) Write two paragraphs, one describing the benefits of technology the other describing the drawbacks of technology. Each paragraph should not exceed 200 words.

B.E./B.TECH. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2004**Second Semester**

Time: Three Hours

Maximum: 100 Marks

Answer ALL Questions

SECTION A

(10 × 2 = 20 Marks)

1. Match the words in column 'A' with their meanings in column B:

A

B

- | | |
|------------------|--|
| (a) Target | the make up of a book, newspaper, etc. |
| (b) Conservation | consider beforehand |
| (c) Layout | objective, result aimed at |
| (d) Anticipate | preservation |

2. Fill in the blank spaces below with the appropriate forms of the word:

NOUN	ADJECTIVE	PERSON CONCERNED
Psychology		Psychologist
Drama		Dramatist
	Natural	Naturalist
Technology	Technological	

3. Write two sentences to differentiate the usage of any ONE of the following words, one as a Noun and the other as a Verb:

- (a) Object (b) Conduct

4. Fill in the blanks below with two types of nouns, the first one referring to an action or state and the second one to a substance:

VERB	NOUN 1	NOUN 2
Catalyse		
Pollute		

5. Add a suitable prefix 'infra-', 'ultra-', 'sub-', and 'hyper-' to the following words to mean the words given against them:

- | | | |
|--------------------|---|---|
| (a) _____ sonic | : | (sound) having a pitch above the upper limit of human hearing |
| (b) _____ standard | : | not having the required or normal quality |
| (c) _____ red | : | having a wavelength just below the red end of the spectrum |
| (d) _____ tension | : | abnormally high blood pressure |

6. Fill in the following passage with suitable prepositions:

Appropriate technology is a technology that is developed to cater _____ the basic needs _____ economically poor people. Also, it is not concerned _____ only the small-scale technology. Appropriate technology lies somewhere _____ traditional and modern technology. It is particularly easy to operate and can be maintained _____ less skilled persons. A special feature _____ this technology is that it can be applied _____ a variety _____ rural needs.

7. Add a suitable contracted form of the predicate to compare plants and animals:

- (a) A plant cell will contain cellulose, but an animal cell _____.
- (b) Plants use sunlight to manufacture food, but animals _____.
- (c) An animal takes care of its offspring but a plant _____.
- (d) Plants can manufacture their own food, but animals _____.

8. Rewrite the following expressions as shown in the given example :

E.g. 'The pipe is three feet long' can be written as 'a 3-foot pipe'.

- (a) a journey of 20 miles
- (b) a match lasting five days
- (c) a tank with a capacity of 500 litres
- (d) a DC supply of 240 volts

9. Supply the correct forms of the verbs given in brackets :

The man (stop) the car and (come) to me. He (say) that he (not see) me because he (been) lost in the admiration of the scenery. He (take) out his wallet and (give) me some money. He said that the dog was dead and there was nothing we (can) do about it.

10. Correct the mistakes in the following text:

In 1973, the oil rich countries come to realize that if they act together, their oil deposits could be a source of great power and welth and their action of increase the price of oil immediately afterwards, almost hold the developed countries to ransom.

SECTION B

(5 × 16 = 80 Marks)

11. Read the following passage carefully and answer the question that follow it:

Three great challenges dominate the scene as one contemplates the global environmental campaigning in the first few decades of the 21st century. First, there is huge legacy of industrial pollution which is not being responded to Second, societies can live and work cleanly and sensitively but the means to do so are neglected. And third, governments are failing to organise politics and policies to protect public goods.

The first of these is a failure to respond to and deal with the pollution *legacy* of the 20th century, and in particular global warming which is leading to climate change. Disruption of the world's climate is already having *catastrophic* consequences for human and ecological well-being. While the international climate convention was signed at the Rio Earth summit in 1992 and although some progress has been made, effective action has not yet been agreed on, either in terms of targets or timetables.

The appropriate response to climate change is not *mitigation* or adaptation measures such as planting trees in the hope (not very well-founded) that they will mop up carbon dioxide or even constructing flood shelters for low-lying villages (though that is necessary). The appropriate response is to shift our energy economies rapidly out of fossil fuels and into renewable energy. It will be necessary to make *extensive* use of energy efficiency to make this task feasible in the necessary timescale.

The appropriate timescale is the time available to us before climate warming goes too far - before it reaches the upper limit of a rise of around 0.2 degree Celsius per decade beyond which United Nations advisors anticipate that unpredictable and drastic ecological damage will *ensue*. (By Greenpeace calculations this is a matter of a few decades, although evidence from coral reefs and the Arctic and from the increasing extreme weather conditions now suggest that dramatic change is indeed underway). All nations need to make this switch and obviously industrial nations have a proportionately greater responsibility to act first. It is the world's number one environmental concern.

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- (a) Say whether the following statements are true or false:
1. The legacy of industrial pollution is being dealt with concern by the government.
 2. We need to rapidly shift to alternative and clean forms of energy sources.
 3. Targets have been set for effective action to deal with the problem of pollution.
 4. The well-being of human beings is being affected due to environmental pollution.
- (b) Choose the word that comes closest to mean the words or phrases as they are used in the text:
1. Catastrophic
 - (i) disastrous
 - (ii) important
 - (iii) far-reaching
 - (iv) sudden
 2. Mitigation
 - (i) lessening
 - (ii) increasing
 - (iii) shift
 - (iv) investigation
 3. Legacy
 - (i) inheritance
 - (ii) problem
 - (iii) responsibility
 - (iv) ignorance
 4. Extensive
 - (i) widespread
 - (ii) appropriate
 - (iii) careful
 - (iv) necessary
- (c) Choose the response that best reflects the meaning of the text:
1. One of the alarming effects of global warming is
 - (i) damage of coral reefs
 - (ii) great climatic changes leading to adverse effects on man's health
 - (iii) worldwide pollution
 - (iv) worldwide floods
 2. Appropriate timescale is
 - (i) the lifespan of an average human being
 - (ii) the time it takes for complete ecological destruction
 - (iii) the time that man has taken to pollute the environment
 - (iv) the time that has been given to man before which he must tackle the problem of pollution
 3. Countries all over the world need to shift to renewable sources of energy but ones that need to shift immediately are
 - (i) developing countries
 - (ii) countries that rely heavily on industries
 - (iii) prosperous countries
 - (iv) countries where fossil fuels are available in plenty

4. The best manner in which climate change can be addressed is by
- (i) planting trees
 - (ii) constructing flood shelters
 - (iii) shifting to renewable sources of energy
 - (iv) cleaning the oceans
12. (a) Read the following advertisement and write a letter of application for the post advertised, enclosing your bio-data in the proper form.

Dalal Mott MacDonald, a part of MM Group of U.K. requires in-line experienced personnel in the disciplines of Chemical / Mechanical / Civil / Instrumentation / Electrical Engineering for executing major projects in Chennai City. Candidates must have minimum 5–8 years of experience in the relevant branch and also completed projects. Apply within 10 days to HRD Incharge, 21 Abdul Razak Road, Saidapet, Chennai–600 015 with salary drawn and salary expected details.

(or)

- (b) Write a letter of complaint to the Editor of a popular newspaper about the problem of increasing air pollution in Chennai City and also suggest remedial measures to tackle the same problem.
13. (a) You are the College Union President arranging the valedictory function of the union at the college. Write a checklist of at least 8 important items to be taken care of for the smooth conduct of the function.

(or)

- (b) You are the Works Manager in Industrial Gases Limited where LPG Cylinders are filled for utilisation by the customers. Write a report to the Chairman of the company about an accident that happened in the LPG filling section in which five workmen are seriously injured. Suggest the remedial measures also to avert such happenings in future.
- (a) It followed in the chemistry laboratory while doing experiments there.
- (or)
- (b) Write a set of eight important recommendations to a group of students from Europe who have come to spend their one month's vacation in India. The suggestions may be on the lines of food, travel, transport, climatic conditions, etc., to make their stay comfortable and enjoyable.
15. (a) Discuss whether technology is a 'boon' or a 'bane', substantiating your contention in a paragraph of about 200 words.

(or)

- (b) Write a paragraph of 200 words explaining the role of English as an international language.

B.E./B.TECH. DEGREE EXAMINATION, APRIL/MAY 2005**Second Semester**

Time : Three Hours

Maximum : 100 Marks

Answer ALL Questions.

SECTION A

(10 × 2 = 20 Marks)

1. Define any TWO of the following terms. (2 × 1 = 2)
 - (a) Laser technology
 - (b) Traditional technology
 - (c) High technology

2. Match the words in Column A with their meanings in Column B. (4 × ½ = 2)

A	B
(a) Archaeology	(i) a hand written or typed first copy of a book before it is printed
(b) Manuscript	(ii) the study of the past
(c) Offering	(iii) never ends or changes
(d) Perpetual	(iv) something that is given to god

3. Use the hints given below to make sentence expressing purpose. (4 × ½ = 2)
 Example : An experiment—demonstrate a principle

 The aim of an experiment is to demonstrate a principle.
 - (a) A sheet of carbon paper : makes copies while one types
 - (b) Constructing bypass road : reduces traffic congestion in a city
 - (c) A litmus test : identifies acids and alkalies
 - (d) A flowchart : represents a process as a series of steps

4. Correct the mistakes in spelling, grammar and punctuation in the following passage and rewrite it. (8 × 1/4 = 2)

 Every attempt to unravels the secrets of sleep, and its fancement raises mani problems. The sleeper himself could not tell what are going on and even when he wakes has only a very hazy idia of how good or bad a nite he has had.

5. Write Two sentences and (both as noun and as verb) using any Two of the words given below. (4 × ½ = 2)
 - (a) conduct
 - (b) rebel
 - (c) export

6. Fill in the blank spaces in the box given below with the appropriate forms of the words given below.

Noun	Adjective	Person concerned
_____	Chemical	_____
Botany	_____	_____
_____	_____	Geologist
Ecology	_____	_____

7. Rewrite the following passage in reported speech. (2)

Chairperson : The project in Saudi Arabia has been the main cause of the drain on our funds. Heavy investment has already been made and the project had come to a standstill. In fact, it cannot even take off on account of technical and procedural hurdles. Your company had been forced to resort to heavy borrowing in the current year.

8. Describe any Two of the terms given below. Your description of each term should not exceed 30 words:

(2 × 1 = 2)

- (a) Mass communication
- (b) Safety pin
- (c) Communication cord

9. Fill in the blanks in the following sentences using appropriate prepositions.

(4 × ½ = 2)

- (a) Is there a great difference _____ British and American English?
- (b) Brazil is rich _____ natural resources.
- (c) Fighting the thread of pollution is a race _____ time.
- (d) Is your sister still having treatment _____ asthma?

10. Fill in the blanks in the following sentences with present simple or present continuous tenses.

(4 × ½ = 2)

- (a) He joined the company 25 years ago and he still _____ (work) for us.
- (b) Go down this road, turn right, and the road _____ (lead) straight to the industrial estate.
- (c) We _____ (spend) a great deal on phone calls due to the postal strike.
- (d) She would be excellent as a sales representative because she _____ (speak) English fluently.

SECTION B

(5 × 6 = 80 Marks)

11. Read the following passage and answer the questions that follow it.

Packaging : the insane waste of making things to be thrown away.

To get a chocolate out of a box requires a considerable amount of unpacking : the box has to be taken out of the paper bag in which it arrived; the cellophane* wrapper has to be torn off, the lid opened and the paper removed; the chocolate itself then has to be unwrapped from its own piece of paper. But this insane amount of wrapping is not confined to luxuries. It is now becoming increasingly difficult to buy anything that is not done up in cellophane, polythene, or paper.

(5)

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The package itself is of no interest to the shopper, who usually throws it away immediately. Useless wrapping accounts for much of the refuse put out by the average London household each week. So why is it done? Some of it, like the cellophane on meat, is necessary, but most of the rest is simply competitive selling. This is absurd. Packaging is using up scarce energy and resources and messing up the environment. (10)

Little research is being carried out on the costs of alternative types of packaging. Just how possible is it, for instance, for local authorities to salvage paper, pulp it, and recycle it as egg-boxes? Would it be cheaper to plant another forest? Paper is the material most used for packaging—20 million paper bags are apparently used in Great Britain each day—but very little is salvaged.

A machine has been developed that pulps papers then processes it into packaging, e.g. egg-boxes and cartons. This could be easily adapted for local authority use. It would mean that people would have to separate their refuse into paper and non-paper, with a different dustbin for each. Paper is, in fact, probably the material that can be most easily recycled; and now, with massive increases in paper prices, the time has come at which collection by local authorities could be profitable. (20)

Recycling of this kind is already happening with milk bottles, which are returned to the dairies, washed out, and refilled. But both glass and paper are being threatened by the growing use of plastic. More and more dairies are experimenting with plastic bottles, and it has been estimated that if all the milk bottles necessary were made of plastic, then British dairies would be producing the equivalent of enough plastic tubing to encircle the earth every five or six days!

The trouble with plastic is that it does not rot. Some environmentalists argue that the only solution to the problem of ever growing mounds of plastic containers is to do away with plastic altogether in the shops, a suggestion unacceptable to many manufacturers who say there is no alternative to their handy plastic packs. (30)

It is evident that more research is needed into the recovery and re-use of various materials and into the cost of collecting and recycling containers as opposed to producing new ones. Unnecessary packaging, intended to be used just once, and making things look better so more people will buy them, is clearly becoming increasingly absurd. But it is not so much a question of doing away with packaging as using it sensibly. What is needed now is a more sophisticated approach to using scarce resources for what is, after all, a relatively unimportant function. (From an article in *The Times*) (35)

*cellophane: a thin, colourless, material useful for keeping products clean and dry. It serves as the outer wrapping for many things, such as cigarette-packs, chocolate-boxes, packs of razor-blades, playing-cards, greetings-cards, etc.

- (a) Read the passage carefully, then answer the following questions. Choose the response which best reflects the meaning of the text. (6 × 1 = 6)

1. 'This insane amount of wrapping is not confined to luxuries' (line 1), means

- (i) not enough wrapping is used for luxuries.
- (ii) more wrapping is used for luxuries than for ordinary products.
- (iii) it is not only for luxury products that too much wrapping is used.
- (iv) the wrapping used for luxury products is unnecessary.

2. The 'local authorities' are
 - (i) the Town Council
 - (ii) the police
 - (iii) the paper manufacturers
 - (iv) the most influential citizens
 3. If paper is to be recycled
 - (i) more forests will have to be planted.
 - (ii) the use of paper bags will have to be restricted.
 - (iii) people will have to use different dustbins for their rubbish.
 - (iv) the local authorities will have to reduce the prices of paper.
 4. British dairies are
 - (i) producing enough plastic tubing to go round the world in less than a week.
 - (ii) giving up the use of glass bottles.
 - (iii) increasing the production of plastic bottles.
 - (iv) re-using their old glass bottles.
 5. The environmentalists think that
 - (i) more plastic packaging should be used.
 - (ii) plastic is the most convenient form of packaging.
 - (iii) too much plastic is wasted.
 - (iv) shops should stop using plastic containers.
 6. The author thinks that
 - (i) the function of packaging is not important.
 - (ii) people will soon stop using packaging altogether.
 - (iii) not enough research has been done into the possibilities of recycling.
 - (iv) the cost of recycling is so great that it is better to produce new materials than use old ones.
- (b) State whether the following statements are True or False. (4 × 1 = 4)
1. Too many products nowadays are wrapped in unnecessary packaging.
 2. Most London families refuse to throw away packaging.
 3. The countryside is being spoilt by the overproduction of packaging.
 4. It is possible to use paper again.
- (c) Choose the definition which best fits these words or phrases as they are used in the text. (6 × 1 = 6)
1. confined (line 5)
 - (i) used for
 - (ii) restrict to
 - (iii) needed for
 - (iv) suited to
 2. accounts for (line 8)
 - (i) makes up
 - (ii) compensates for
 - (iii) is recovered from
 - (iv) is kept out of

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3. so why is it done? (line 9)
 - (i) why do people buy things they don't need?
 - (ii) why is so much wrapping thrown away?
 - (iii) why do the shops try to sell things people don't want?
 - (iv) why is so much unnecessary wrapping used?
4. most of the rest (line 10)
 - (i) the other kinds of packaging
 - (ii) what is left over
 - (iii) the other shopkeepers
 - (iv) the rest of the time
5. messing up (line 11)
 - (i) spoiling
 - (ii) altering
 - (iii) improving
 - (iv) poisoning
6. apparently (line 15)
 - (i) obviously
 - (ii) regularly
 - (iii) undoubtedly
 - (iv) supposedly
12. (a) Write an essay not exceeding 200 words either on the benefits or drawbacks of technology.
(or)
(b) Do you agree or disagree with the idea the development of a country should not be at the cost of the environment. Write an essay not exceeding 200 words expressing your views on the issue.
13. (a) Write eight instructions that must be followed in order to maintain safety in temporary structures such as shamanas and pandals.
(or)
(b) Write eight recommendations to control air pollution in cities.
14. (a) Write a letter to the editor of a newspaper complaining about the indiscriminate use of cellphones by drivers of vehicles. Your letter should
 - (i) identify the most serious problem associated with the use of cellphones by drivers.
 - (ii) suggest suitable and practical solutions to the problem.
 - (iii) say why you think the suggestions will be effective.
(or)
(b) An engineering college requires candidates for the posts of Lecturers, Assistant professors and professors in all disciplines. Candidates should have completed their Ph.D. and must have minimum three years experience in teaching. Excellent communication skills in English are a must. Interested candidates apply with biodata to:

The Director
Beta Engineering College
No. 45, Banarghatta Layout
Bangalore – 560 057

15. The sentences below are jumbled. Rewrite the sentences in the correct order.

- (a) (i) To test his hypothesis that the shape of a pyramid is responsible for the preservation of dead bodies, Bovis made an accurate model of the Cheops and put a dead cat inside it.
(ii) This is now called the Great Pyramid.
(iii) He found it unusually humid there, but what really surprised him were the garbage cans that contained, among the usual tourist litter, the bodies of a cat and some small desert animals that had wandered into pyramid and died there.
(iv) The pyramids on the West Bank of the Nile were built by the pharaohs as royal tombs and data from about 3000 B.C.
(v) Some years ago it was visited by a Frenchman named Bovis, who took shelter from the midday sun in the pharaoh's chamber, which is situated in the centre of the pyramid, exactly one-third of the way up from the base.
(vi) He began to wonder whether the pharaohs had really been so carefully embalmed by their subjects after all, or whether there was something about the pyramids themselves that preserved bodies in a mummified condition.
(vii) The most celebrated are those at Giza, of which the largest is the one that housed the pharaoh, known as Cheops.
(viii) Despite the humidity, none of the bodies had decayed, but just dried out like mummies.

(or)

- (b) (i) However, a remarkable research project in London has already discovered a few people who actually enjoy insomnia.
(ii) The secrets of sleep were a mystery for centuries simply because there was neither the means to explore them, nor the need.
(iii) This has shown that for some people seven to eight hours of sleep a night are quite unnecessary.
(iv) Even chronic insomniacs often get more hours of sleep than they think.
(v) Research into sleep patterns however is unpopular as it is expensive and inevitably involves working at night.
(vi) Only when candles gave way to gaslight, and gas to electricity, when man became able to convert night into day, and double his output did people seriously start wondering if sleep could possibly be a waste of time.
(vii) But, by placing electric contacts beside the eyes and on the head, it is possible to check their complaint by studying the tiny currents we generate which reveal the different brainwaves of sleep and wakefulness.
(viii) Our ability to switch night into day is very recent and it is question able if we will ever either want, or be able, to give up our habit of enjoying a good night's sleep.

B.E./B.TECH. DEGREE EXAMINATION, MAY/JUNE 2005

Second Semester

Answer ALL Questions.

Time : Three hours

Maximum : 100 Marks

SECTION A

(10 × 2 = 20 Marks)

1. Match the words in column A with their meanings in column B.

(4 × ½ = 2)

A

B

- | | |
|-------------------|--|
| (a) Perpetual | (i) the make-up of a page, a book, newspaper, etc. |
| (b) Deforestation | (ii) never ends or changes |
| (c) Layout | (iii) suitable |
| (d) Appropriate | (iv) clearing of forests |

2. Fill in the blanks spaces below with the appropriate form of the word.

(4 × ½ = 2)

Noun

Adjective

Person concerned

- | | | |
|----------------|---------------|------------------|
| (a) Chemistry | _____ | Chemist |
| (b) Drama | Dramatic | _____ |
| (c) _____ | Environmental | Environmentalist |
| (d) Psychology | _____ | Psychologist |

3. Add suitable prefixes—hyper, ultra, sub, super—to the following words to match the meaning given against them.

(4 × ½ = 2)

- | | | |
|-------------------|---|--|
| (a) _____sonic | : | having a speed greater than that of sound. |
| (b) _____violet | : | having wavelength beyond the violet and of the spectrum. |
| (c) _____standard | : | not having the required or normal quality. |
| (d) _____tension | : | abnormal blood pressure. |

4. Make sentences expressing purpose using the hints below.

(2 × 1 = 2)

Example: aerial—receive broadcast signals

An aerial is used to receive broadcast signals.

- | | | |
|-------------------|---|-------------------------------|
| (a) a litmus test | : | identifies acids and alkalies |
| (b) carbon paper | : | make copier while typing |

5. Fill in the blanks with two forms of the nouns given, the first one referring to an action and the second one to a substance.

(4 × ½ = 2)

Verb

Noun 1

Noun 2

- | | | |
|--------------|-------|-------|
| (a) Catalyse | _____ | _____ |
| (b) Corrode | _____ | _____ |

6. Rewrite the following expressions as shown in the example.

(4 × ½ = 2)

Example : 'The pipe is three feet long' can be written as 'a three-foot long pipe'.

- | |
|--|
| (a) A match lasting five days |
| (b) A journey of 40 miles |
| (c) At intervals of 10 minutes |
| (d) A research grant of 20 lakh/rupees |

7. Write two sentences using the words given below to bring out their difference in meaning when they are used as noun and as verb. (4 × ½ = 2)
- Conduct
 - Record
8. Complete the following sentences suitably.
- If the battery of the car is down_____.
 - If we were to appreciate the good deed of others_____.
9. Write an extended definition of 'Appropriate Technology'. (2)
10. Edit the following passage by correcting the mistakes in grammar, spelling and punctuation. (8 × ¼ = 2)
- Science fiction are one of the most popular form of literature it command a very wide reeding public. Many writer of the world are trying to produse it.

SECTION B

(5 × 16 = 80 Marks)

11. Read the following passage and answer the questions at the end of it.

Is language, like food, a basic human need without which a child at a critical period of life can be starved and damaged? Judging from the drastic experiment of Frederick II in the thirteenth century it may be. Hoping to discover what language a child would speak if he heard no mother tongue, he told the nurses to keep silent.

All the infants died before the first year. But clearly there was more than language deprivation here. What was missing was good mothering. Without good mothering, in the first year of life especially, the capacity to survive is seriously affected.

Today, no such drastic deprivation exists as that ordered by Frederick. Nevertheless, some children are still backward in speaking. Most often the reason for this is that the mother is insensitive to the cues and signals of the infant whose brain is programmed to mop up language rapidly. There are critical times, it seems, when children learn more readily. If these sensitive periods are neglected, the ideal time for acquiring skills passes and they might never be learned so easily again. A bird learns to sing and to fly rapidly at the right time, but the process is slow and hard once the critical state has passed.

Linguists suggest that speech milestones are reached in a fixed sequence and at a constant age, but there are cases where speech has started late in a child who eventually turns out to be of high IQ (Intelligence Quotient). At 12 weeks, a baby smiles and utters vowel-like sounds; at 12 months he can speak simple words and understand simple commands; at 18 months he has a vocabulary of 3 to 50 words. At 3 he knows about 1,000 words which he can put into sentences, and at 4 his languages differs from that of his parents in style rather than grammar.

Recent evidence suggests that an infant is born with the capacity to speak. What is special about Man's brain, compared with that of the monkey, is the complex system which enables a child to connect the sight and feel of, say, a teddy-bear with a sound pattern 'teddy-bear'. And even more incredible is the young brains ability to pick out an order in language from the hubub of sounds around him, to analyse, to combine and recombine the parts of a language in novel ways.

But speech has to be triggered, and this depends on interaction between the mother and the child, where the mother recognizes the cues and signals in the child's babbling, clinging, grasping, crying, smiling and responds to them.

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Insensitivity of the mother to these signals dulls the interaction because the child gets discouraged and sends out only the obvious signals. Sensitivity to the child's non-verbal cues is essential to the growth and development of language.

- (a) Choose the response which best reflects the meaning of the text. (4 × 1½ = 6)
1. Frederick II's experiment was 'drastic' because
 - (i) he wanted to prove that children are born with the ability to speak.
 - (ii) he ignored the importance of mothering to the infant.
 - (iii) he was unkind to the nurses.
 - (iv) he wanted to see if the children would die before they reached the age of one.
 2. The reason some children are backward in speaking today is that.
 - (i) they do not listen carefully to their mothers.
 - (ii) their brains have to absorb too much language at once.
 - (iii) their mothers do not respond to their attempts to speak.
 - (iv) their mother are not intelligent enough to help them.
 3. By 'Critical times' the author means
 - (i) difficult period, in a child's life.
 - (ii) moments when the child becomes critical toward its mother.
 - (iii) important stages in a child's development.
 - (iv) times when mothers often neglect their children.
 4. If the mother does not respond to her child's signals
 - (i) the child will never be able to speak.
 - (ii) the child will stop giving out signals.
 - (iii) the child will invent a language of its own.
 - (iv) the child will make little effort to speak.
- (b) State whether the following statements are true or false. (4 × 1½ = 6)
1. Children are slow to begin speaking if their mothers do not respond to the noises they make.
 2. By the age of a year and a half the child's vocabulary is still under 100 words.
 3. By the age of four, children still make grammatical mistakes.
 4. The author does not believe that children select and analyse their language.
- (c) Choose the definition which best fits these words or phrases as they are used in the text. (4 × 1 = 4)
1. deprivation
 - (i) inability
 - (ii) removal
 - (iii) need
 - (iv) disturbance
 2. Survive
 - (i) learn
 - (ii) live
 - (iii) communicate
 - (iv) overcome

- 3. backward
 - (i) inaccurate
 - (ii) shy
 - (iii) slow
 - (iv) undeveloped
- 4. mop up
 - (i) absorb
 - (ii) analyse
 - (iii) understand
 - (iv) develop

12. (a) Read the following advertisement published in a newspaper dt. 29.3.2004 and apply for the post of Deputy Manager, Design and Development with bio-data.

India Auto, a 50 crore plus company, the leader in the automobile industry requires the following personnel:
Deputy Manager, Design and Development

Requirements: B.E/B.Tech. graduates with 10 to 12 years of experience in an industry.

Apply to: Human Resources Department

India Auto Limited
10, New Street,
Bharath Nagar,
Chennai.

(or)

- (b) Write a letter of complaint to the editor of a newspaper about the increasing air pollution in Chennai city. Your letter should also suggest suitable solutions to tackle the problem of air pollution.
13. (a) You are the college union president in charge of the valedictory function of the union to be held in your college. Write a check list of the 8 most important items to be taken care of for the smooth conduct of the function. Do not forget to give a suitable title for the check list.

(or)

- (b) Imagine that you have go to Bangalore to attend an interview. Make an eight-item checklist with a proper title for own reference. Write a checklist containing eight items which will help you prepare for the interview.
14. (a) Write eight important instructions to be followed in the chemistry laboratory to avoid unforeseen accidents.

(or)

- (b) Write eight instructions that can be followed by the public to preserve the environment and keep it free from pollution (air, water and land).
15. (a) Write two paragraphs each not exceeding 100 words comparing Television with the Newspaper as the most popular mass media.

(or)

- (b) Do you agree or disagree with the idea that technology has been more beneficial than a drawback? Discuss your viewpoint with suitable examples in two paragraph, each not exceeding 100 words.

B.E./ B.TECH. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2005**Second Semester**

Time: Three Hours

Maximum: 100 Marks

Answer ALL Questions

SECTION A

(10 × 2 = 20 Marks)

1. Match the words in column 'A' with their meanings in column 'B':

A	B
(a) Infrastructure	required by written law or legislation
(b) Statutory	native
(c) Indology	the system of services from a basis
(d) Indigenous	the study of India

2. Fill in the blanks with appropriate prepositions:

The energy value of food is usually measured _____ calories. The number _____ calories one uses _____ any one moment normally depends _____ the activity one does.

3. Fill in the gaps in the following table with appropriate forms of the words:

e.g.: <u>verb</u>	<u>noun</u>	<u>adjectives</u>
Communicate	Communication	Communicative
(a) Protect	_____	_____
(b) _____	_____	productive.
(c) _____	reaction	_____
(d) Attract	_____	_____

4. Add suitable prefixes to the root words to give the meanings indicated:

- (a) _____: Zero less than zero.
 (b) _____: tension, abnormal blood pressure.
 (c) _____: sensitive excessively or abnormally sensitive.
 (d) _____: structure subordinate or underlying parts on which something is built.

5. Give two examples for each of the suffixes given below:

- (a) _____ment
 (b) _____tion
 (c) _____able
 (d) _____ence.

6. Use the appropriate tense forms of the verbs given in brackets and complete the text:

In 1950 and in 1970 most of America's energy _____ (come) from coal, oil and natural gas. But in this twenty-year-period, the amount _____ (produce) from coal _____ (fall) from 38% to 18.5%, while oil _____ (rise) from 36% to 44%.

7. Rewrite the following by replacing the numerical expressions in the position of an adjective before a noun, as shown in the given example:
e.g. : A pipe of 3 feet length.
Ans : A 3 - foot pipe.
(a) A drive for 8 hours.
(b) A committee of 6 members.
(c) A project proposal for 10 crores.
(d) An engine with 100 cc power.
8. Write sentences expressing 'purpose' by using the hints given below. An example has been worked out for you:
e.g. : aerial : receive broadcast signal.
Ans : An aerial is used to receive broadcast signals:
(a) Glass bottle store acids
(b) Telescope view stars and other celestial bodies
(c) Camera take photographs
(d) Underground cable carry electricity to towns
9. Rewrite the following sentences in the indirect speech using appropriate reporting verbs:
(a) The factory supervisor told the worker, "You can clean the tool with emry cloth".
(b) The Secretary said, "Repeated strikes have affected the company's progress".
10. Edit the following passage by correcting mistakes in grammar, spelling and punctuation. You find eight mistakes in this passage.
When a architect receive a proposal for a bilding, he meets the client and discuss his requirements. After visited the cite the architech draws up priliminary plans and together in a rough estimate of the cost submits them to the client.

SECTION B

(5 × 16 = 80 Marks)

11. Read the following report and answer the questions that follow it:

The ocean bottom is very interesting to oceanographers from many points of view. For one thing they find that the sedimentary rocks that exist on the ocean bottom are much younger than any similar rocks they find on the continents. In fact, no deposits on the ocean floor seem to be older than a couple of hundred million years, whereas many rocks on the continents are far older than this. For many years geologists have been asking, "Why aren't there older rocks on the ocean bottom? and "where do the older rocks go?"

Furthermore, the mud layers covering the rocks on the bottom of the ocean - the sediments - are continually being deposited, and yet the thickness of this overall layer remains very thin. Again, scientists ask, "where do these sediments go? Why aren't the sediments much thicker on the ocean bottom than we find them to be?"

The answers to these questions have been found in modern measurements, which indicate that the ocean bottom must be in motion. It is moving at a speed of from about one-half to six inches a year, and it seems to be doing so in a manner that suggests that the continents also are moving. Apparently the continents can be thought of as floating in a "sea" of basalt (that is, the ocean bottom rocks).

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Scientists think that many millions of years ago, all the continents were joined together in two huge landmasses, called Laurasia and Gondwanaland. Later on, in geological time, Laurasia split into North America, Europe, and Asia, while South America, Africa, Antarctica, and Australia were formed from Gondwanaland. But the final picture is apparently not complete, for the sea bottom is still moving and evidently the continents are moving too. Where they will be a few million years from now, scientists can only guess.

As far as oceanographers can tell, the reason for this movement is that the rock beneath the earth's crust (the mantle) is a somewhat fluid substance. It will move in much the same manner as water, but of course much more slowly. With the earth being warmer in the interior, convective currents or vertical head motions are set up in much the same way that air in a room moves from the floor to the ceiling when an electric heater is placed on the floor. Of course, when the moving mantle material reaches the underside of the crustal rocks (the ocean bottom), it spreads out to the sides. It is this horizontal motion that causes the ocean bottom and the continents to move.

Eventually, the mantle material must return to the interior of the earth, because any such material that comes from there must be replaced. In this manner, the older rocks on the underside of the oceanic crust are dragged down into the earth, which explains why the older rocks cannot be found. Similarly, the older sediments are also carried away as they build up. Measurements have been made that indicate that the rocks very close to mid-Atlantic ridge in the North Atlantic Ocean have very recently risen from the interior of the earth, while at points further away from the mid-Atlantic ridge, it was found that the age of the rocks increased. Thus, by noting the rock age measurements and the distance between samples, it is possible for scientists to calculate the rate at which the sea floor is spreading – which works out to be between one-half and six inches per year.

(a) State whether the following statements are 'True' or 'False':

1. The sedimentary rocks that exist on the ocean bottom are similar to sedimentary rocks found on the continents.
2. Sedimentary rocks found on the continents are older to sedimentary rocks found on the ocean bottom.
3. Geologists do wonder about the whereabouts of the sedimentary rocks.
4. The overall layer of the sedimentary rocks remains very thick.
5. Laurasia and Gondwanaland were two huge land masses.
6. Scientists can say for sure the direction in which the continents are moving.

(b) Read the passage carefully and then choose the response which best reflects the meaning of the texts:

1. The sedimentary rocks found on the ocean bottom are
 - (i) 100 million years older
 - (ii) 200 million years older
 - (iii) more than 200 million years older
 - (iv) 50 million years older.
2. The main question that remains in the minds of the geologists is
 - (i) the depth of the ocean
 - (ii) the nature of the older rocks
 - (iii) the whereabouts of older rocks
 - (iv) the formation of new rocks.

3. The strange feature about the sedimentary rocks is
 - (i) that the thickness of the overall layer remains thin
 - (ii) that the mud layers keep accumulating
 - (iii) that the ocean bottom is fully covered with them
 - (iv) that they are becoming bigger in size.
 4. The movement of continents occurs because
 - (i) the earth's crust is semi - solid substance
 - (ii) the earth's crust is in a somewhat fluid state
 - (iii) the earth crust's is full of water
 - (iv) the earth's crust is full of loose sand.
 5. The older rocks cannot be found on the ocean floor because
 - (i) they are dragged down
 - (ii) they are crushed because of underground pressure
 - (iii) they get melted
 - (iv) they are pushed to different places due to water currents.
- (c) Choose the definition which best fits the following words or phrases as they are used in the text:
1. Dragged
 - (i) pull something along
 - (ii) talk about
 - (iii) move slowly
 - (iv) damage
 2. Eventually
 - (i) finally
 - (ii) simultaneously
 - (iii) probably
 - (iv) possibly
 3. Spreading
 - (i) reaching out
 - (ii) moving to all sides
 - (iii) covering more area
 - (iv) telling a lot of people
 4. Build up
 - (i) grow up
 - (ii) get accumulated
 - (iii) become old
 - (iv) increase in number

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5. Apparently
 - (i) clearly
 - (ii) regularly
 - (iii) undoubtedly
 - (iv) supposedly
12. (a) Write a letter of application along with the bio-data for the post of Quality Control Manager in a reputed company.

(or)

(b) Write a letter to the Editor of a newspaper complaining about poor civic conditions (bad roads, garbage, street lamps) in your locality. Your letter should also give *solutions* to each of the problems discussed.
13. (a) You and your family members are going on a holiday to hill resort. You will be away from your home for 15 days. Prepare a check list of eight most important items related to the safety of your house, which you could use before undertaking the journey. Give a suitable title to your check list.

(or)

(b) You are the Safety Engineer of a tyre manufacturing company. A major fire accident has taken place in the factory and 12 workers have sustained severe burnt injuries. The Managing Director of the company has asked you to prepare a detailed report on the accident, together with your recommendations for averting similar accidents in the future. Your report should not exceed 250 – 300 words.
14. (a) Prepare a list of eight instructions that must be followed when operating a computer.

(or)

(b) Write eight instructions you would like to give to your... who wishes to apply for an engineering degree in a university abroad.
15. (a) Write two paragraphs not exceeding 200 words on the ways in which water; the valuable natural resource can be used and preserved (200 words)

(or)

(b) Discuss in two paragraphs whether television promotes education or entertainment or both. (200 words)