

# TECHNICAL ENGLISH I



# TECHNICAL ENGLISH I

**Late Dr S Sumant**

Former Professor and Head  
Department of English and Humanities  
Erode Sengunthar Engineering College  
Thudupathi

and

**Maven Learning Private Limited**

Chennai



**Vijay Nicole Imprints Private Limited**

CHENNAI

Published by



**Vijay Nicole Imprints Private Limited**

No. 4, First Floor, Velachery-Madipakkam Main Road, Ram Nagar South, Chennai - 600 091.

Phone: 91 44 4281 1452 , 4281 1349

Email: vijaynicole@airtelmail.in, www.vijaynicole.co.in

in collaboration with



**Tata McGraw Hill**

Tata McGraw Hill Education Pvt. Ltd.

B-4, Sector-63, Dist. Gautam Budh Nagar

Noida, UP 201 301

Phone: +91 120 4383400

Fax: +91 120 4393401-403

www.tatamcgrawhill.com

**Technical English I**

**ISBN: 978-81-8209-308-9**

**Copyright © 2011, Vijay Nicole Imprints Private Limited**

No part of this publication may be reproduced or distributed in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise or stored in a database or retrieval system without the prior written permission of the publishers and copyright holders. The program listings (if any) may be entered, stored and executed in a computer system, but they may not be reproduced for publication.

Information contained in this work has been obtained by publishers, from sources believed to be reliable. However, neither publishers nor copyright holders guarantee the accuracy or completeness of any information published herein, and neither publishers nor copyright holders shall be responsible for any errors, omissions, or damages arising out of use of this information. This work is published with the understanding that publishers and copyright holders are supplying information but are not attempting to render engineering or other professional services. If such services are required, the assistance of an appropriate professional should be sought.

Laser typeset at: Maven Learning Private Limited, Chennai - 600 091.

Printed at: Max Printing Press, Chennai - 600 095

# Contents

<i>Preface</i> .....	<i>vii</i>
----------------------	------------

## UNIT I

1. General Vocabulary – Changing Words from One Form to Another ....	3
2. Adjectives and Comparative Adjectives .....	11
3. Adverbs and Adverb Forms .....	21
4. Active and Passive Voice .....	26
5. Tenses .....	34
6. Nouns and Compound Nouns .....	48
7. Skimming and Scanning .....	57
8. Listening and Transfer of Information – Bar Charts and Flow Charts .....	59
9. Paragraph Writing .....	70
10. Process Description .....	90
11. Discussing as a Group and Making an Oral Report on the Points Discussed .....	92
12. Conversational Techniques – Convincing Others .....	93

## UNIT II

13. Vocabulary – Prefixes and Suffixes .....	97
14. Spelling and Punctuation .....	115
15. ‘Wh’ Question Forms .....	136
16. Scanning and Inference .....	138
17. Listening and Note-taking .....	140
18. Paragraph Writing – Comparison and Contrast .....	152
19. Creative Thinking and Speaking .....	154

**UNIT III**

20.	Single Line Definitions and Extended Definitions.....	157
21.	Sequencing of Sentences .....	173
22.	Instructions .....	177
23.	Persuasive Speaking .....	181
24.	Discussing Ideas .....	184
25.	Role-plays .....	186

**UNIT IV**

26.	Modal Verbs and Probability .....	191
27.	Concord Subject Verb Agreement .....	200
28.	Correction of Errors .....	206
29.	Cause and Effect Expressions .....	213
30.	Speaking about the Future Plans .....	216

**UNIT V**

31.	‘If’ Conditionals .....	221
32.	Gerunds .....	228
33.	Intensive Reading .....	232
34.	Presentation of Problems and Solutions – Debating .....	261
35.	Itinerary – Planning for an Industrial Visit .....	264
36.	Formal Letter Writing – Letters to the Editor .....	268
37.	Invitation Letters – Accepting and Declining Letters .....	274
38.	Permission Letters .....	279
	Solved University Question Papers .....	283

## Preface to Technical English II

Technical English I 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 Communication, Grammar, Usage and Composition. The book caters to the latest syllabi requirements of Anna University in toto.

The main objectives, as per the University syllabi, has been keenly taken into consideration, while framing the book – to enhance listening skills, to communicate effectively in English in real life, to develop the reading habit of students, to improve their vocabulary, to familiarise technical jargons, and to draft letters in formal & business situations.

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.

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 students who are yet to gain proficiency in the language. It includes many solved question papers for reference and to enable students to score well in the exams.

In the compilation of this book, the editors and content developers at Maven Learning Pvt. Ltd. take this opportunity to pay their respects and homage to Late Dr. S. Sumant who passed away recently. The content developers have tried their best to retain the winning ways of Dr. S. Sumant while updating, adding and working on new content.

The publishers would like to record Late Dr. S. Sumant's appreciation of the support of Udyog Ratan Thiru J. Sudhanandhen, Correspondent, Erode Sengunthar Engineering College, Dr. T. Shanmugam, Principal, Ms. J. Malini and Mrs. Kavitha Mohan in the writing of this book.

Maven Learning is thankful to Mrs. Rama Ravi and Ms. Aadhithya for thier support in content developing and editing of this book. Please do let us know your feedback and suggestions for further improvement of the book.

**Publisher**





# UNIT I



## CHAPTER 1 GENERAL VOCABULARY – CHANGING WORDS FROM ONE FORM TO ANOTHER

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

## 4 Technical English

21.	Converge	Convergence	Convergent
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	Developing
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
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	Pronounceable
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

## 6 Technical English

81.	Resist	Resistance	Resistible
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.	Noun	Adjective	Verb	Adverb
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	Excels	Excellently

## EXAMPLES

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

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

2. 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

## 8 Technical English

3. 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

**EXERCISE I**

Fill in the blank spaces in the box with the appropriate form of the word.

<b>1. Verb</b>	<b>Noun</b>	<b>Adjective</b>	
(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)
<b>2. Verb</b>	<b>Noun</b>	<b>Adjective</b>	
(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)
<b>3. Verb</b>	<b>Noun</b>	<b>Adjective</b>	
(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)
<b>4. Verb</b>	<b>Noun</b>	<b>Adjective</b>	
(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)



<b>5. Verb</b>	<b>Noun</b>	<b>Adjective</b>	
(a) Dispose	–	Disposable	(Oct. '98, Apr. '97)
(b) Act	Action	–	(Oct. '98, Nov. '96)
(c) Penetrate	Penetration	–	(Apr. '97)
(d) –	Calculation	Calculable	(Apr. '96)
<b>6. Verb</b>	<b>Noun</b>	<b>Adjective</b>	
(a) Prefer	Preference	–	(Nov. '96)
(b) Consider	Consideration	–	(Nov. '96)
(c) Compare	–	Comparable	(Nov. '96)
(d) –	Explosion	Explosive	(Nov. '96)
<b>7. Verb</b>	<b>Noun</b>	<b>Adjective</b>	
(a) Corrode	Corrosion	–	(Apr. '97)
(b) Stabilize	–	Stable	(Apr. '97)
(c) –	Quickness	Quick	(Nov. '96)
<b>8. Noun</b>	<b>Adjective</b>	<b>Person concerned</b>	
(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)

## EXERCISE II

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

<b>1. Verb</b>	<b>Noun</b>	<b>Adjective</b>
(a) Weaken	–	–
(b) –	Submission	–

## 10    ➤    Technical English

(c) –	–	Variable
-------	---	----------

(d) Remove	–	–
------------	---	---

2.    **Verb**                      **Noun**                      **Adjective**

(a) –	Transformation	–
-------	----------------	---

(b) Pronounce	–	–
---------------	---	---

(c) –	–	Explosive
-------	---	-----------

(d) Value	–	–
-----------	---	---

3.    **Verb**                      **Noun**                      **Adjective**

(a) –	–	Imaginative
-------	---	-------------

(b) Define	–	–
------------	---	---

(c) –	–	Vacant
-------	---	--------

(d) Strengthen	–	–
----------------	---	---

4.    **Verb**                      **Noun**                      **Adjective**

(a) –	–	Resistible
-------	---	------------

(b) Suit	–	–
----------	---	---

(c) –	Reputation	–
-------	------------	---

(d) –	–	Beautiful
-------	---	-----------

## CHAPTER 2 ADJECTIVES AND 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 forms 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
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	runder	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
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.**

- (a) Diesel is heavier (heavy) than petrol.
- (b) Diesel costs less (little) than petrol.
- (c) 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)**

- (a) Lead is heavier (heavy) than aluminium.
- (b) Gold is more expensive (expensive) than silver.
- (c) The process of extraction of oil is simpler (simple) than the process involved in prospecting for oil.
- (d) 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 2002)**

- (a) Nylon is harder (hard) than rubber.
- (b) Platinum is more expensive (expensive) than gold.
- (c) Today, making investments in landed property is wiser (wise) than investing in articles of gold.
- (d) 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) A wise enemy is better (good) than a foolish friend.
- (b) Liberty is more important (important) than food.
- (c) Petrol is costlier (costly) than kerosene.
- (d) 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.

**18**        Technical English

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.

**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**

(1) 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.
(2) 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.

**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.

**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. (Apr.'97)
7. Platinum is a more expensive metal than gold. (Nov.'98)
8. A mile is longer than a kilometer. (Oct.2000)
9. Alcohol boils at 78°C; water boils at 100°C.

**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 3 ADVERBS AND ADVERB FORMS

An *Adverb* is a word which modifies the meaning of a verb, an adjective or another adverb.

For example:

Alex runs *quickly*.

This is a very *sweet* mango.

She speaks *quite* correctly.

### KINDS OF ADVERBS

1. Adverbs of Time (which show when).

I met my friend *yesterday*.

She passed the examination *last* year.

2. Adverbs of Frequency (which show how often )

He *always* likes tea.

She *seldom* goes there.

Rajan *never* comes here.

He *frequently* comes unprepared.

3. Adverbs of Place (which show where)

Come *here*.

Go *there*.

Come *in*.

4. Adverbs of Manner (which show how or in what manner)

She speaks English *fluently*.

He answered the question *quickly* .

He writes *neatly*.

[**Note** – This class includes nearly all those adverbs which are derived from adjectives and end in - *ly*]

5. Adverbs of Degree or Quantity (which show how much, or in what degree or to what extent)

You are *quite* right.

I am *rather* busy.

**22** 🐾 Technical English

She is *fully* prepared.

The tank is *almost* full.

I am *so* glad.

She sings *pretty* well.

## 6. Adverbs of Affirmation and Negation

He *certainly* went.

They *do not* understand English.

## 7. Adverbs of Reason

He *therefore* left college.

## 8. Interrogative Adverbs (which are used in asking questions)

*Why* did you go there?

*When* did you come?

*Where* are you going?

*Why* are you late?

**FORMATION OF ADVERBS**

1. Adverbs of Manner are mostly formed from Adjectives by adding *-ly*; as, wise, wisely; quick, quickly; clever, cleverly; foolish, foolishly; wonderful, wonderfully; nice, nicely; beautiful, beautifully.
2. When the Adjective ends in *y* preceded by a consonant, change *y* into *i* and add *-ly*; as, ready, readily; heavy, heavily; easy, easily; happy, happily.
3. When the Adjective ends in *le*, simply change *e* into *y*; as, single, singly; simple, simply; double, doubly.
4. Some Adverbs are made up of a Noun and a qualifying Adjective; as otherwise, sometimes, meanwhile, meantime.
5. Two Adverbs sometimes go together, joined by the conjunction *and*; as, again and again; by and by; far and wide; first and foremost; now and then; once and again; through and through; far and near; out and out; off and on; to and wide; over and above.

**POSITION OF ADVERBS**

1. Adverbs of Manner, which answers the question 'How?' are generally placed after the verb or after the object if there is one; as,

She speaks English *fluently*.

He does his work *carefully*.

It is raining *heavily*.

2. Adverbs of Place and of Time are usually placed after the verb or after the object if there is one; as,

They will go *there*.

She will come *here*.

I went *there yesterday*.

She is getting married *next week*.

3. When there are two or more Adverbs the normal order is: (a) Adverb of Manner, (b) Adverb of Place, (c) Adverb of Time

He spoke *earnestly* at the *meeting last night*.

Lata sang *very well* at the *concert last week*.

## Adverbs of Frequency

Position of adverbs of frequency which answer the question 'How often?' (e.g., always, never, often, rarely, usually, generally) and certain adverbs like almost, already, hardly, nearly, just, quite :

- a) If the verb is am, is, are, was, were, these adverbs are placed after the verb.

He is *always* late.

She was *never* absent.

I am *always* at home on Sundays.

- b) In the case of other verbs, they are put before the verb.

She *seldom* comes here.

They *frequently* go there.

I *never* do such a thing.

- c) When there are two verbs, these adverbs are placed after the auxiliary verb.

He will *certainly* help you.

I can *easily* answer this question.

She has *already* passed the examination.

## EXAMPLES

### I. Form adverbs

1. careful
2. heavy

24 🖱 Technical English

3. kind
4. foolish
5. clever.

**ANSWERS**

1. carefully
2. heavily
3. kindly
4. foolishly
5. cleverly

**II. Insert the given adverbs (or adverb phrases) in their normal position.**

1. She is late. (sometimes)
2. I know the answer. (already)
3. He is on time for meals. (never)
4. They are busy. (always)

**ANSWERS**

1. She is sometimes late.
2. I already know the answer.
3. He is never on time for meals.
4. They are always busy.

**EXERCISE I**

**I. Form adverbs using the words given below.**

1. wise
2. nice
3. beautiful
4. slow
5. quick
6. fluent



7. happy
8. smooth
9. ready
10. wonderful

**II. Insert the given adverbs (or adverb phrases) in their normal position.**

1. The train has left. (just)
2. I drink brandy. (never)
3. She goes to the cinema. (seldom)
4. Is he there? (still)
5. Have you seen a ghost? (ever)
6. The rich pities the poor. (always)

## CHAPTER 4 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 the Verb in the Active Voice 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

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.

**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.
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 5 TENSES

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

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

### EXAMPLES

I *speak* 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.
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.

## 36    Technical English

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****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. (Apr.'96)
2. The windows \_\_\_\_\_ (be) open.
3. No one, except his closest friends \_\_\_\_\_ (support) him.
4. It is I who (be) to blame.
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 \_\_\_\_\_ (come) 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)
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.

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

- For an action going on at the time of speaking as,  
She is singing.(now)

**38**    ➤    Technical English

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.
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)

**40**    ➤    Technical English

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.
12. The earth \_\_\_\_\_ (behave) like a magnet, and this fact \_\_\_\_\_ (make) possible the magnet compass. (Apr. '97)
13. The number of jobs \_\_\_\_\_ (increase) in the technology sector. (Apr. '97)
14. Indian banks \_\_\_\_\_ (become) very efficient. (Apr. '97)
15. Over the last fifty years, computers \_\_\_\_\_ (develop) dramatically. (Jan. 2005)

**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.

***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**

1. Selvi \_\_\_\_\_ (do) her home work since 6 O'clock. (Nov. '99)
2. She \_\_\_\_\_ (work) here for the last three years.



3. We \_\_\_\_\_ (study) English for two years.
4. It \_\_\_\_\_ (rain) since early morning.
5. I \_\_\_\_\_ (live) here since 1980.
6. 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.

1. 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)
2. 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)
3. She \_\_\_\_\_ (go) abroad last month. (Apr. '98)
4. (a) On the farms, the hens \_\_\_\_\_ (brood), but no chicks hatched.  
 (b) The farmers complained that they \_\_\_\_\_ (are) unable to raise.  
 (c) The apple trees \_\_\_\_\_ (come) into bloom but no bees droned away the blossoms.  
 (d) 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

## 42    Technical English

- 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.
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.

## 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.

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.

## 44    Technical English

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.

**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**

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)

## 46    Technical English

3. They \_\_\_\_\_ (complete) the work by next year. (Apr.'99, M.Q.P.2001)
4. By next June he \_\_\_\_\_ (finish) his course. (Nov.'96, Arp.'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. (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

## CHAPTER 6 NOUNS AND 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. <b>Air supply</b>               | supply of air   |
| 2. <b>Animal behaviour</b>         | the behaviour of an animal  |
| 3. <b>Aluminium extraction</b>     | the extraction of aluminium   |
| 4. <b>Arithmetic unit</b>          | a unit in which arithmetic operations are performed                             |
| 5. <b>Ball pen</b>                 | a pen that writes with a tiny ball at its point which rolls ink on to the paper |
| 6. <b>Battery car</b>              | car which works on battery  |
| 7. <b>Battery valve</b>            | valve of a battery  |
| 8. <b>Blast furnace</b>            | furnace of the type which works by blast of preheated air                       |
| 9. <b>Boat house</b>               | boat used as a house  |
| 10. <b>Boiler feed water</b>       | water for feeding (supplying) the boiler  |
| 11. <b>Boiler inspection door</b>  | door for the inspection of a boiler   |
| 12. <b>Butterfly valve</b>         | valve which is in the shape of a butterfly                                      |
| 13. <b>Butt weld</b>               | weld of the type called 'butt'  |
| 14. <b>Cable television</b>        | television signals transmitted through cables                                   |
| 15. <b>Calculation speed</b>       | speed with which calculations are done  |
| 16. <b>Calculator memory</b>       | memory of a calculator  |
| 17. <b>Car battery</b>             | battery of a car  |
| 18. <b>Carbon dioxide</b>          | dioxide of carbon   |
| 19. <b>Cassette tape</b>           | tape of a cassette  |
| 20. <b>Coal gas</b>                | gas obtained from coal  |
| 21. <b>Colour television</b>       | television showing pictures in colour   |
| 22. <b>Communication satellite</b> | satellite used for communication  |



<b>23. Computer language</b>	language used for computer operation
<b>24. Computer diagnosis</b>	diagnosis made by a computer
<b>25. Computer manual</b>	manual for operating the computer
<b>26. Computer operator</b>	a person who operates a computer
<b>27. Computer technology</b>	technology used in computers
<b>28. Concrete structure</b>	structure made of concrete
<b>29. Concrete wall</b>	wall made of concrete
<b>30. Condenser extractor pump</b>	pump for extracting from condenser
<b>31. Control centre</b>	centre from where control is exerted
<b>32. Control tower</b>	tower that controls
<b>33. Cooling tower</b>	tower for the purpose of cooling
<b>34. Copper wire</b>	wire made of copper
<b>35. Cylinder condensation losses</b>	losses from the cylinder by condensation
<b>36. Cylinder head</b>	head of a cylinder
<b>37. Cylinder head design</b>	design of the head of a cylinder
<b>38. Cylinder walls</b>	walls of the cylinder
<b>39. Data input</b>	input of data
<b>40. Diesel engine</b>	an engine that runs on diesel
<b>41. Dish antenna</b>	antenna in the shape of a dish
<b>42. Disk drive</b>	drive of a disk (features of a computer that allows intention of a disk for reading)
<b>43. Earth oil price increase</b>	increase in the price of oil obtained from the earth
<b>44. Energy source</b>	source from which energy is obtained
<b>45. Fire fly</b>	fly that emits flickering light
<b>46. Fire tube boiler inspection door</b>	door for the inspection of boiler of fire tube type
<b>47. Flood damage</b>	damage caused by flood
<b>48. Food source</b>	the source of food
<b>49. Friction losses</b>	losses caused by friction
<b>50. Gas jar</b>	jar containing gas

<b>50</b>	Technical English	
<b>51.</b>	<b>Gear mechanism</b>	mechanism for operating the gear
<b>52.</b>	<b>Generator power output</b>	output of power from the generator
<b>53.</b>	<b>Gravity feed lubrication system</b>	system of lubrication by feeding by gravity
<b>54.</b>	<b>Grease gun</b>	gun used for injecting grease
<b>55.</b>	<b>Heat content</b>	content of heat
<b>56.</b>	<b>Heat transfer</b>	transfer of heat
<b>57.</b>	<b>Heat treatment</b>	treatment with or by heat
<b>58.</b>	<b>Hot water</b>	water that is hot in condition
<b>59.</b>	<b>Immigration department Officer</b>	officer of the immigration department
<b>60.</b>	<b>Inflation rate</b>	the rate of inflation
<b>61.</b>	<b>Information centre</b>	centre for giving information
<b>62.</b>	<b>Jet engine</b>	an engine propelled by jet
<b>63.</b>	<b>Juice extractor</b>	extractor used for extracting juice
<b>64.</b>	<b>Key board</b>	board having keys for operation by finger tips
<b>65.</b>	<b>Laser printer</b>	printer that uses laser technology
<b>66.</b>	<b>Leaf protein</b>	protein contained in a leaf
<b>67.</b>	<b>Letter press</b>	method of printing using raised types
<b>68.</b>	<b>Liquid oxygen</b>	oxygen obtained in liquid form
<b>69.</b>	<b>Litho plate</b>	zinc or aluminium plate used in printing
<b>70.</b>	<b>Lock nut</b>	nut of the kind which locks
<b>71.</b>	<b>Machine language</b>	language that a machine operates by
<b>72.</b>	<b>Machine testing conditions</b>	conditions under which a machine is tested
<b>73.</b>	<b>Machine tools</b>	tools for cutting or shaping materials, driven by a machine
<b>74.</b>	<b>Mackintosh computer</b>	a computer of the type known as mackintosh
<b>75.</b>	<b>Mains electricity</b>	electricity which comes from the mains
<b>76.</b>	<b>Mass production</b>	production in mass
<b>77.</b>	<b>Measurement procedure</b>	procedure for measuring something

<b>78. Media support</b>	support by media
<b>79. Mercury thermometer</b>	thermometer using mercury
<b>80. Metal tubes</b>	tubes made of metal
<b>81. Mild steel</b>	steel that is mild in nature
<b>82. Muslin bag</b>	bag made of muslin
<b>83. Newsprint</b>	the paper on which newspapers are printed
<b>84. Nickel alloy</b>	alloy containing nickel
<b>85. Noise pollution</b>	pollution caused by noise
<b>86. Pedal power</b>	power derived from a pedal device
<b>87. Personal computer</b>	computer used for personal purposes
<b>88. Petrol engine</b>	an engine that runs on petrol
<b>89. Picture tube</b>	a tube which gives the picture in a television
<b>90. Power cable</b>	cable conducting power
<b>91. Power output</b>	output of power
<b>92. Power source</b>	source from which/where power is obtained
<b>93. Power station</b>	station producing power
<b>94. Power transmission problems</b>	problems in the transmission of power
<b>95. Radio telescope</b>	telescope using radio waves
<b>96. Radio waves</b>	waves of the radio
<b>97. Research laboratory</b>	laboratory for research
<b>98. Resources utilisation</b>	utilisation of resources
<b>99. Rice husk</b>	husk from rice
<b>100. Road engine</b>	an engine that runs on the road
<b>101. Roller mill</b>	mill for rolling
<b>102. Rubber roller</b>	roller made of rubber
<b>103. Shoe factory site announcement</b>	announcement of site for shoe factory
<b>104. Silver extraction</b>	extraction of silver
<b>105. Small newspaper</b>	newspaper serving small circles
<b>106. Soil laboratory</b>	laboratory for testing soil

**52**      Technical English

<b>107. Software packages</b>	packages of software
<b>108. Solar cooker</b>	cooker using solar energy
<b>109. Space travel</b>	travel in or to space
<b>110. Spark plug</b>	plug that emits spark
<b>111. Sports column writer</b>	a person who writes sports column for a newspaper/ magazine
<b>112. Steam chest</b>	chest containing steam
<b>113. Steam consumption</b>	the consumption of steam
<b>114. Steam engine</b>	engine that works by steam
<b>115. Steam jackets</b>	jackets containing steam
<b>116. Steam turbine</b>	turbine driven by steam
<b>117. Steel bar</b>	bar made of steel
<b>118. Steel box</b>	box made of steel
<b>119. Steel chain</b>	chain made of steel
<b>120. Steel tubes</b>	tubes made of steel
<b>121. Stock exchange broker</b>	a broker for exchange of stock
<b>122. Stop valve</b>	valve made to stop the passage
<b>123. Tamil newspaper reporter</b>	reporter of a Tamil newspaper
<b>124. Television mechanic</b>	mechanic who repairs television
<b>125. Temperature drop</b>	drop in temperature
<b>126. Turret lathe</b>	lathe having a turret
<b>127. Underground cable</b>	a cable that is laid underground to conduct electricity
<b>128. Waste disposal</b>	disposal of waste
<b>129. Water heater</b>	heater used to heat water
<b>130. Water power</b>	power obtained from water
<b>131. Water supply</b>	supply of water
<b>132. Water truck</b>	truck containing water
<b>133. Water tube</b>	tube containing water
<b>134. Weather report</b>	a report on the weather
<b>135. Wet steam</b>	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

## EXERCISE

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.
  - (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

## 54    ➤    Technical English

6. Expand the following compound nouns. (Jan. 2005)
- (a) power source
- (b) steel chair
- (c) control centre
- (d) calculation speed
7. Air supply (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 (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)
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 (Jan. 2005)
26. Control tower (Nov./Dec. 2002)
27. Copper wire (Nov.'96, Apr.'97)
28. Cylinder head (Apr.'96)
29. Cylinder head design (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)                                     |
| 38. Gravity feed lubrication system  |   |
| 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                | (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)                                     |

## 56    Technical English

62. Research laboratory
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
75. Steel bar (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
83. Water truck (Apr.'99)
84. Water tube (Apr.'96)
85. Workshop machinery (Apr.'96)



## CHAPTER 7 SKIMMING AND SCANNING

### **SKIM THE FOLLOWING PASSAGE AND ANSWER THE QUESTIONS BELOW.**

“Reading makes a full man, conference a ready man and writing an exact man.” says Bacon. What influence do you think reading, conversation and writing have in making you a citizen of the world? The major aim is to become and to be a citizen of the world. One may be a citizen of a town or city or a country that is easy because the spirit of the place grows into one’s own blood. However, to be a citizen of the world it calls for broader outlook, deep understanding and a judicious appreciation of other cultures; very few people could claim to be a citizen of the world. But it is plain that there have been and there are people who have reached that height. If we analyze and study their lives, we could see how their education, interactions with others and writings have made them citizens of the world. So let us see the role played by reading, interactions and writing in the make up of a citizen of the world.

First of all take the case of reading. One reads for pleasure or for understanding or for improving his stock of knowledge. What we read in schools or colleges or professional institutions is only the basic; they show and guide what and where to look for. For examples, specialists like doctors, lawyers or engineers cannot be content with what they have studied in their colleges. Unless they study, professional publications the latest they cannot be up to date. Thus a lawyer may study law reports; a doctor may study professional magazines and monographs. For pleasure we read a lot in our own mother tongue and in other languages as well. The companionship of books is the best that one could look for. Books may please you and never offend you. The reading may be light as a weekend magazine or it may be a master piece. One may read materials pertaining to his profession or personal interest; he may also read books on other areas for fun. Thus one may read books on dozens of different interests and this reading surely goes to make him a full or an all-round man. Such people of wide knowledge are really useful.

Very few people are good conversationalists, though there are many well-read men. To be a good conversationalist, one requires certain qualities. Basically one must be a good mixer; in other words one should like to socialize and have the gift of the gab. He must be a good conversationalist and a listener; he must never be offensive or must not wound the feelings of the others. At a higher level when a man meets others in conference he learns a lot from them. To be a success at a conference one must have the ability to put forth his arguments forcibly, logically and convincingly. He must have the patience to hear the other man. He must grasp and reply the other man’s point of view quickly. This makes one a ready man.

Coming to writing, we write when we cannot directly converse or talk to. In writing, words are recorded and once the writing goes out of one’s hand and reaches the other person, it becomes a record. The right words in the right place show the depth of knowledge of the writer and his penmanship. One may write simple, loving family letters, serious stories, poems, dramas,

**58**      Technical English

business letters and short articles. Whatever is written the flow of words shows the man. You must write what you want to express in plain, straight forward language avoiding redundancy. In conversation one may be wandering; digressions are permissible. However, in writing each word or sentence must take you forward. We can see this in the great essays of master writers. The power of written words has been proved in the great books of the world. The compactness, the exactness, the sequence of logic, all make good writing. The more one writes the more chastened he becomes like the polishing of a precious stone.

So to be a good citizen of the world, one must read a lot, one must learn from companions and one must write. Then he can become a full, ready and exact man.

**QUESTIONS**

1. Why do people read?
2. Who is a good conversationalist?
3. What makes a person a ready man?
4. What are the characteristics of good writing?
5. What do you infer from the passage?

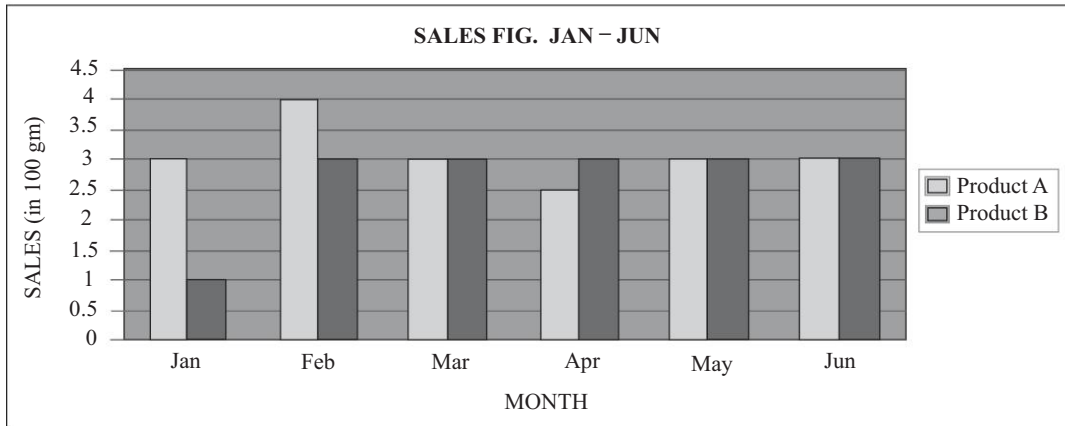
**ANSWERS**

1. People read for pleasure, for understanding and for improving their knowledge.
2. A good listener who likes to socialize, never offensive or hurts the feelings of others is a good conversationist.
3. Conference makes a person a ready man.
4. Compactness, exactness and sequence of logic are the characteristics of good writing.
5. Reading, conference and writing make a full man.

## CHAPTER 8 LISTENING AND TRANSFER OF INFORMATION—BAR CHARTS AND FLOW CHARTS

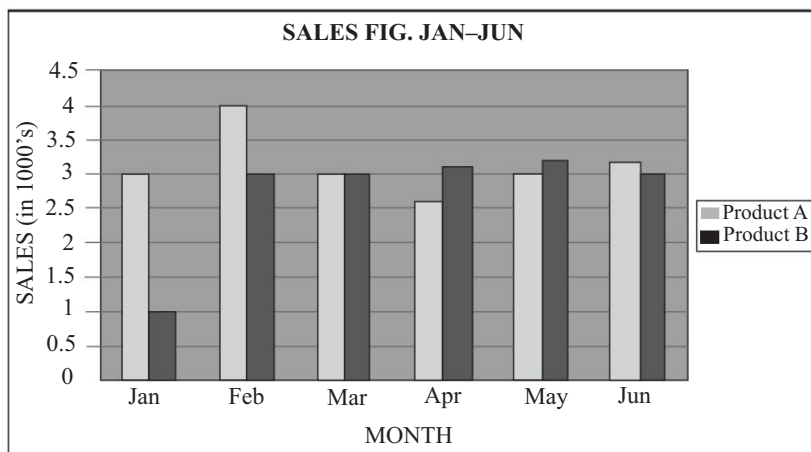
### BAR CHART

A *Bar Chart* is a diagram on which narrow bands of equal width but varying height are used to represent quantities.



### EXAMPLES

1. 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.



**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.

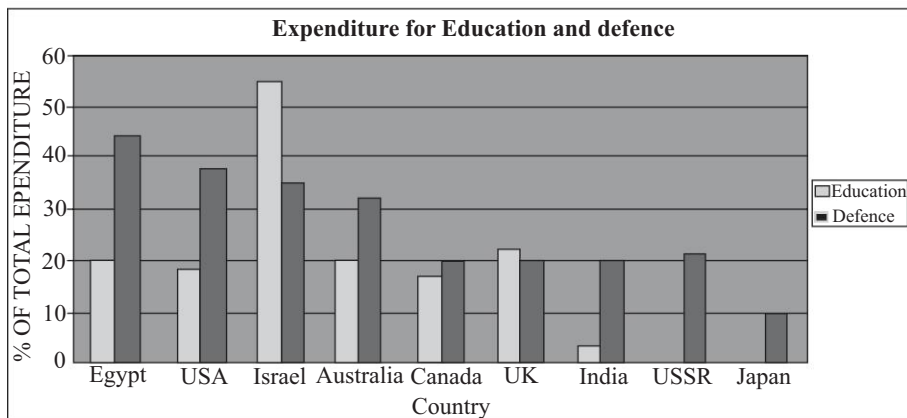
The figures for the month of April present a different picture. The demand for product A further decreased to about 2600 whereas the demand for product B was more than what it was in March. The demand for product A further diminished while the demand for product B further increased.

The month of May shows appreciation in demand for both the products. The sale of product A increased to 3000, what it was in January, while the sale of product B was above the 3000 mark, the highest during the period January to June.

In June, product A experienced a further rise in its sale, well beyond 3000, 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 3000, similar to what it was in February.

The bar chart shows that the maximum sale of product A was in February when it touched the 4000 mark, whereas the maximum sale of product B was in May, when it was above 3000. It was a big leap from 1000 in January.

- 2. 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.**



## 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 in 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.

## 62 Technical English

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%.

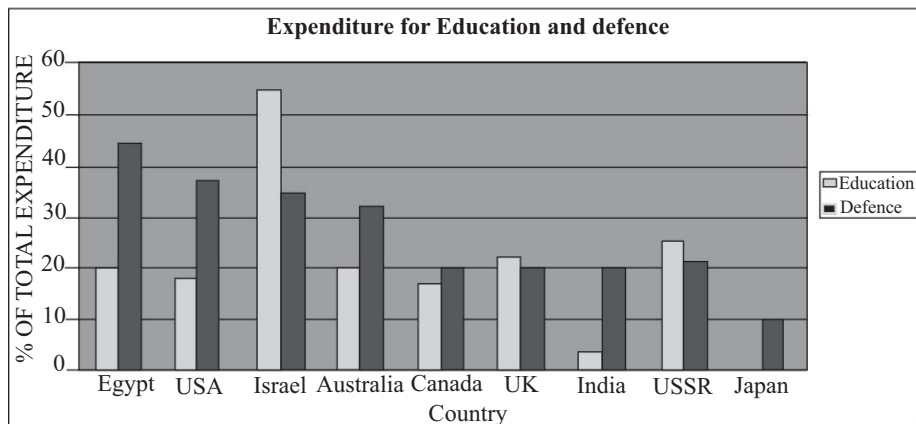
An overall view indicates that Israel leads the other eight countries in terms of its total expenditure on education which is 55%. The country that spends the least on education is India (3%).

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.

## EXERCISE

1. 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)



## FLOW CHARTS

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 *Flow Chart* is a diagram showing the development of something through different stages or processes.

## PROCEDURE FOR DECODING CHARTS AND SYMBOLS

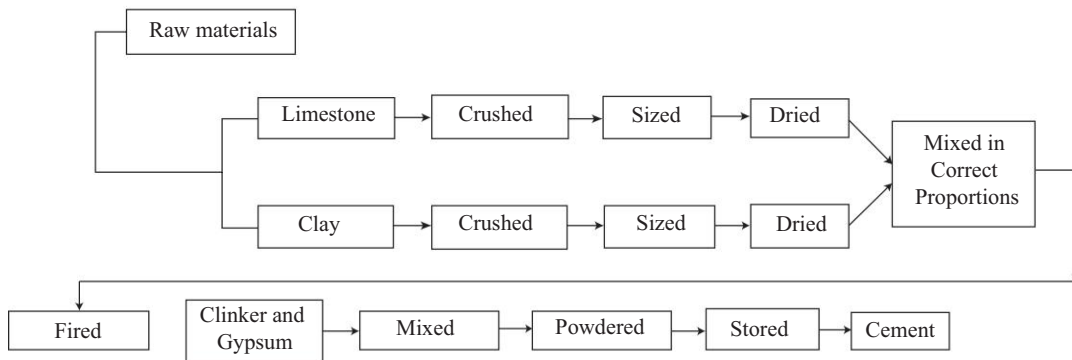
1. Take a good look at the given chart or table.
2. Understand the meanings of the code symbols.
3. Interpret and infer messages from the figures or pictures.
4. Prepare a rough draft.
5. Put these messages in logical continuity.
6. Compare and contrast variables.
7. Begin the paragraph with a topic sentence, and follow it up with sentences that help to expand, explain, elaborate, exemplify.

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

1. 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



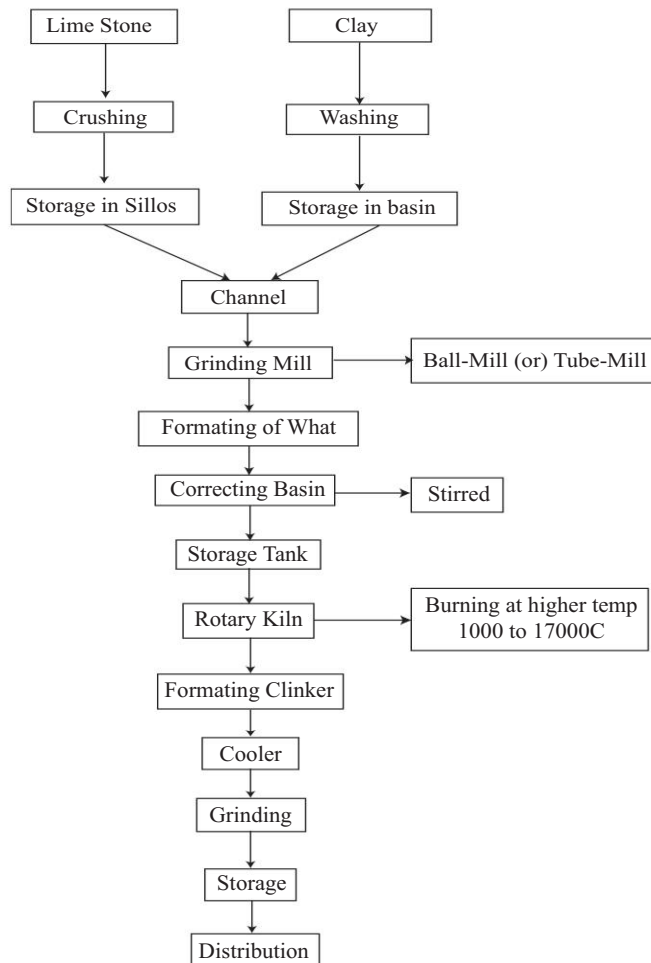
## ANSWER

### *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.

## 2. Stages in Making Cement



## 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



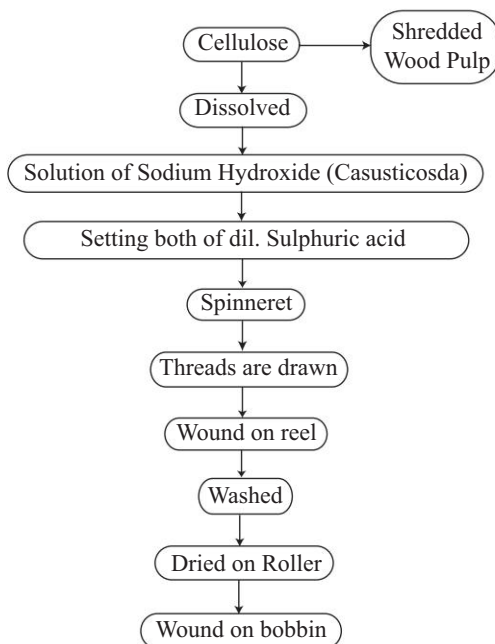
they are ground and the formation is known as slurry. In order to grind, either ball-mill or tube-mill is used. The slurry is led to the correcting basin where it is stirred well to ensure the correct composition of the mixture. After that, it is taken to the storage tank. Then it is fed into the rotary 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.

### 3. 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 reel, washed, then dried on a heated roller, and finally wound on to a bobbin.

#### ANSWER

#### *The Process of Making Rayon*

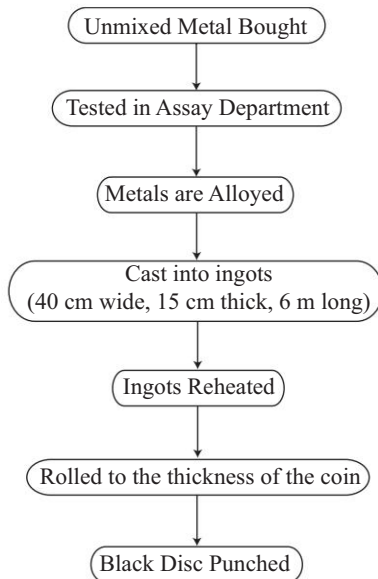


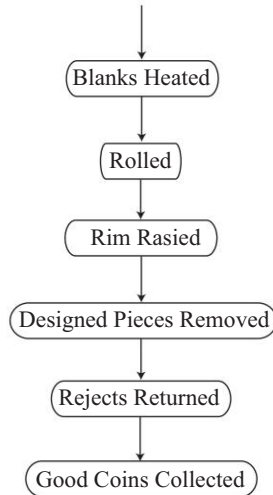
**4. Using the information provided in the given text, draw a flow chart describing the different stages involved in the making of coins. Remember to give an appropriate title to your flow chart: (Apr./May 2003)**

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.

## ANSWER

### *The Process of Making Coins*

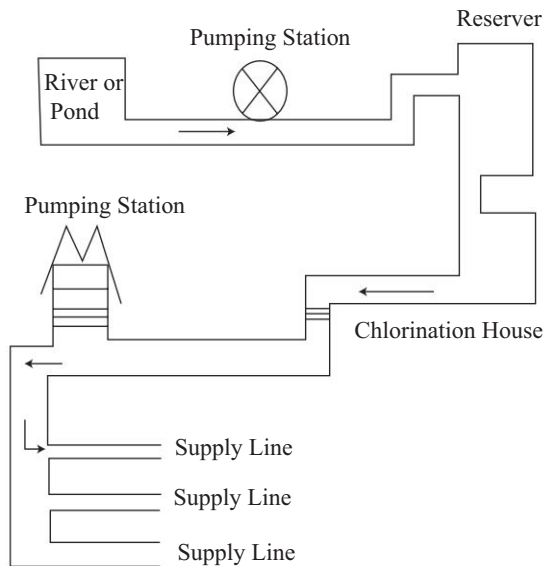




## EXERCISE

- 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*



## 68    Technical English

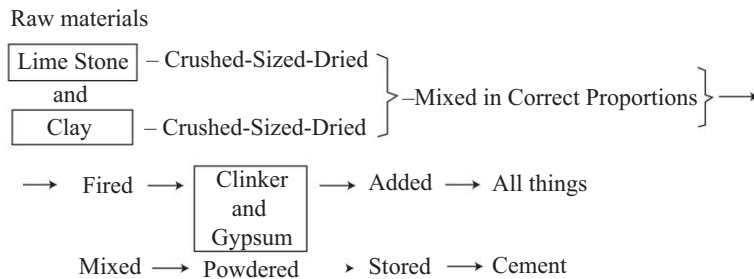
2. Convert the following passage into a flow chart. (Jan. 2005)

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.

3. Convert the following flow chart into a running passage of 200 words : (Jan. 2005)

### *Stages in Making Cement*



4. 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.

5. 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 then silos. From the silos, it becomes cement ready to be weighed and packed.

## CHAPTER 9 PARAGRAPH WRITING

A Paragraph is a number of sentences grouped together and relating to one topic, or a group of related sentences that develop a single idea. 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 the 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 organize 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.

### LENGTH OF A PARAGRAPH

There is no rule as to the length of a paragraph. It may be long or short; sometimes as long as a page or more, and sometimes as short as a sentence or two for the development of the particular point it deals with. But it may be a good idea for the beginners to avoid both these extremes and restrict the length of the paragraph to about three to eight sentences.

### The Format of the Paragraph

The basic requirements of a Paragraph are

- 1. Unity:** The most striking feature of a paragraph is its unity, that is, 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.
- 2. 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 of the paragraph relate to the topic sentence in one of the following ways:
  - a. lead into / upto it.
  - b. explain it, by either expanding or limiting its meaning
  - c. Support it
  - d. Support or explain one of the supporting sentences.
- 3. 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:

- i. Addition: and, against, besides, also, finally, in addition to, furthermore, moreover, next one, another, last
  - ii. Comparison and Contrast: however, but, yet, still, though, although, even though, nevertheless, nonetheless, in contrast, in spite of / despite, on the other hand
  - iii. Time: before, after, first, second, soon, till, by the time, then, later, next, afterwards, immediately
  - iv. Choice: or, either... or, neither... nor
  - v. Concession: although, granted, it is true that, naturally
  - vi. Purpose: so that, to this end, for this purpose
  - vii. Example: for example, for instance, to illustrate, such as, particularly, the following example
  - viii. Place: here, there, beyond, opposite to
  - ix. Result/ Effect: so, therefore, thus, consequently
  - x. Cause: for, because (of), since
  - xi. Clarification: in other words
  - xii. Conclusion, Summary and Results: in summary, in conclusion, in other words, in short, in brief, to conclude, to sum up
- 4. Variety:** To avoid monotony, the paragraph of a composition should be of different lengths, and not always of the same sentence structure. 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.
- 5. Logical Sequence of thought or Adequate Development:** To contribute to the unity of the paragraph, the entire paragraph should emerge from, or lead to the topic sentence. The topic sentence should be developed in an orderly manner. There are various techniques used to develop a paragraph.
- a. Listing: In writing, certain words or phrases are used, to help the paragraph flow smoothly. For example, the first type is, the second is, the third is, finally it is.
  - b. Examples: A paragraph developed by an example has the following parts: topic sentence and example sentences that restate the idea.
  - c. Comparison: A paragraph developed by comparison compares similar aspects or qualities of two objects.
  - d. Contrast: The comparative paragraph compares dissimilar aspects of two objects.

**72**   ➤   Technical English

- e. Definition: A definition paragraph describes, explains or defines an unfamiliar term by relating that which is unknown to that which is already known. It makes use of the techniques of comparison, contrast and synthesis often in a combination.
- f. Classification: Such a paragraph classifies a subject matter by the paragraph writing techniques.
- g. Process description: This paragraph describes definite steps in a necessary order. It is similar to the procedure followed in conducting a scientific experiment.
- h. Cause and Effect: The stating of facts and the giving of reasons to explain why or how facts came about, is the basic procedure in paragraph development by cause and effect.
- i. Generalization: It is similar to paragraph development by example. The main purpose of paragraph developed by generalization is to convince the reader that one's conclusion is the only logical one.

**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 deers. 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.**

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.

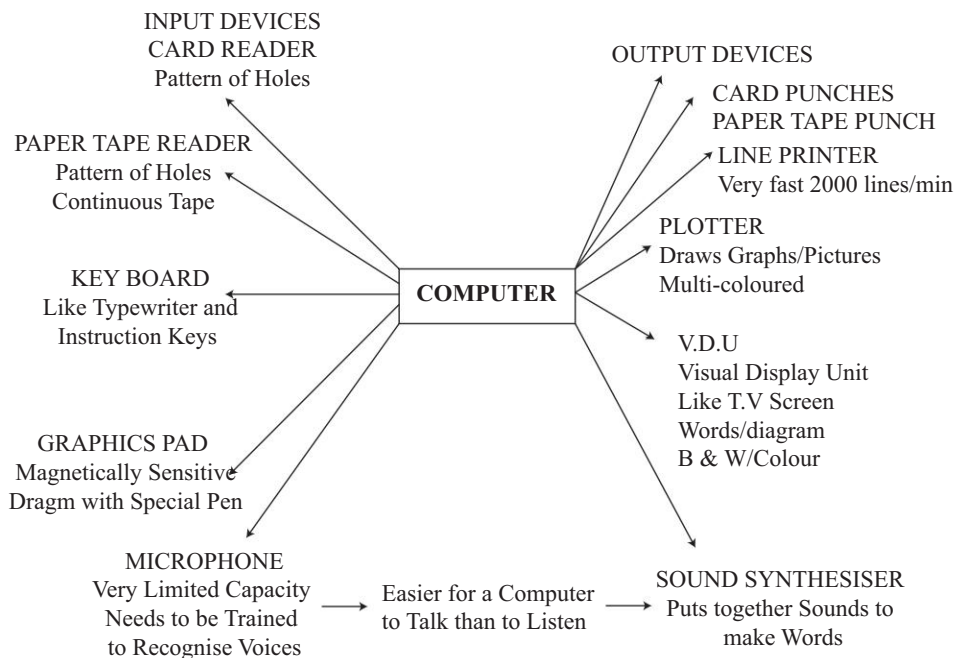
Nuclear and defence establishments use super computers to manage vast amount of data. Software packages are created for a particular kind of industry, tailored to meet their special needs.

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.

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. $10^{11}$	Not very sensitive to change
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 gohar 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.

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.

**76**      Technical English

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 help 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.

**78**      Technical English

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.

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**

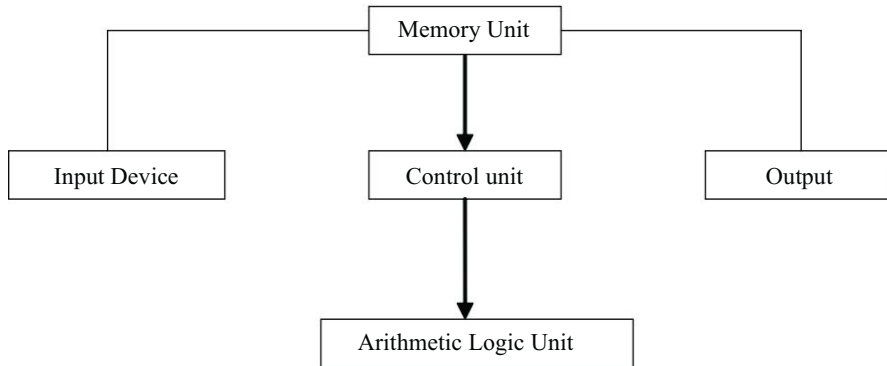
### ***Definition of a Computer***

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 program into the system for execution.

*Example:* Keyboard, Mouse, Magnetic Ink Character Reader (MICR), Barcode Reader.

### Output Device

It is used to display the results from the memory to the user.

*Example:* 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.

## 80    ➤    Technical English

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  $\leftarrow$ ,  $\rightarrow$ ,  $\uparrow$  and  $\downarrow$  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 program, 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 interpretations, etc.

### ***Random Access Memory (RAM)***

This is the temporary storage of information. Required program 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 program 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, Cheque 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 textile 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.

**82**      Technical English

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 computer-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.

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.

**84**   ➤   Technical English

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 as to who is the person. 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.

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 show 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.

## 88    Technical English

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.

## EXERCISE

1. Write a paragraph of about 200 words comparing life in a village with life in a city.
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 characteristic 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)
12. Write a paragraph of about 200 words explaining the wisdom of investing money in articles of gold. (Jan. 2005)



13. 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)
  14. “Computer, its Parts and Uses”—Write two paragraphs on this topic of 200 words each.
  15. Write a paragraph of 200 words stating the ways in which our environment can be preserved. (Apr./May 2003)
  16. 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)
  17. 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).
  18. 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).
  19. 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)
  20. (a). 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)
- (b). Discuss whether technology is a ‘boon’ or a ‘bane’, substantiating your contention in a paragraph of about 200 words. (Nov./Dec. 2004)
21. Write a paragraph of 200 words explaining the role of English as an international language. (Nov./Dec. 2004)

## CHAPTER 10 PROCESS DESCRIPTION

The Process description talks of the overall function of the process and the materials or skills required. It takes the form of a narrative in the third person gives the reader an overall view of the object, idea, or process.

A typical process description will have the following elements:

1. Introduction or definition that tells when and why the process is performed.
2. The general operation, which gives an idea as to the skills and time required.
3. Description of the steps involved.

It makes use of appropriate visual aids like a flow chart and explains the sequences involved.

### 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.

*Examples:* 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.

## **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.

### **EXERCISE**

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 11 DISCUSSING AS A GROUP AND MAKING AN ORAL REPORT ON THE POINTS DISCUSSED

An organized information presented in an oral form is said to be an Oral Report. An oral report can be informative, instructional or persuasive.

### **Basic outline of an oral report**

#### ***1. Context***

Explain who you are; who the audience is; what the situation is; before your actual oral report.

#### ***2. Introduction***

Indicate the topic and purpose of your oral report; Provide an overview of its main contents; get the audience interested.

#### ***3. Body of the oral report***

Use verbal headings

Explain complex technical detail clearly

Use visuals, explain them

Speak audibly, clearly, deliberately

Watch out for distracting gestures, posture and nervous verbal mannerisms

Stay organized

Be aware of the time (7 minutes)

#### ***4. Conclusion***

Have a planned way to end your talk.

Summarise and conclude logically

Give a final general comment

## CHAPTER 12 CONVERSATIONAL TECHNIQUES— CONVINCING OTHERS

Conversation, in general means communication. It is the spoken exchange of ideas, observations, opinions, or feelings. Being a good conversationalist is one of the most essential skills to have in life. It opens up endless opportunities for you in your business, personal and social life. For the conversation to be more effective, one must possess good conversation skills like being a good listener, making people feel comfortable and being an interesting person yourself.

In spite of all these skills, persuasion or convincing others is a very powerful tool of conversation. The ability of such negotiation is embedded in the act of persuasion, convincing and in careful choice of words. It requires a balanced mind and an emotional equipoise.

### **The First step to great conversational skills**

- Homework
- Prioritize your list
- Be prepared
- Be careful about the choice of words
- Be open-minded
- Listen to reason
- Cultivate angler's patience
- Read the body language
- Equipoise
- Be courteous
- Be persuasive by using convincing language
- Be positive
- Don't close your options.



## UNIT II





## CHAPTER 13 VOCABULARY–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.

*Example* 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.

*Example* 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

**98** 🖱️ **Technical English**

- 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
- 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
- 26. Il, In, Im, Ir** ‘not’ as in illiterate, illegal, illegible, illogical, incorrect, ineligible, indecent, invisible, incurable, incomprehensible, improper, impossible, impolite, impure, 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, sub-plot, 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, underground, underlie

100  Technical English

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, judgement, 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
22. **-ate,-ee,-ey,-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, globule, damsel, chronicle, corpuscle
32. **-erel** cockerel
33. **-en** chicken, kitten, wooden, golden, blacken, darken

**102**        Technical English

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**                        ‘concerned with, of ’ as in aviary, dispensary, monastery, salary, pantry
- 41 **-ory, -ry**                            dormitory, fiery, dowry

**ADDITIONAL EXAMPLES****I.**

**(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

104    ➤    Technical English

(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
- (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

**108**    Technical English

- |             |             |
|-------------|-------------|
| 11. Vehicle | vehicular   |
| 12. Relate  | relative    |
| 13. Differ  | different   |
| 14. Comfort | comfortable |

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

- |              |             |
|--------------|-------------|
| 1. Verify    |             |
| 2. Derive    |             |
| 3. Weaken    | (Apr.'94)   |
| 4. Dispose   | (Apr.'97)   |
| 5. Observe   | (Nov.'97)   |
| 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 Adjective 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   |           |
| 12. Verify     |           |
| 13. Necessity  |           |
| 14. Prefer     |           |
| 15. Defect     |           |

### III. Give the Verb form of

- |                  |             |
|------------------|-------------|
| 1. Beauty        | (Apr.'94)   |
| 2. Stabilisation | (Apr.'94)   |
| 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. (Apr. '98)

- National : having contact with many nations.
- Developed : not developed.
- Deforest : clearing of forests.
- Submerge : being placed under water.

110    Technical English

**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

**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.**

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

112    Technical English

**XVII. Add suffixes/prefixes to the following words in accordance with the meanings given against them. (Apr. '94)**

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

**XVIII. Add suffixes/prefixes to the following words in accordance with the meanings given against them. (Apr. '95)**

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

**XIX. Add suffixes/prefixes to the following words in accordance with the meanings given against them. (Oct. '95)**

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

**XX. Add suffixes/prefixes to the following words in accordance with the meanings given against them. (Apr. '97)**

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

**XXI. Add suffixes/prefixes to the following words in accordance with the meanings given against them. (Nov.'96, Oct.'97)**

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



**XXII. Add suffixes/prefixes to the following words in accordance with the meanings given against them. (Apr. '98)**

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

**XXIII. Add suffixes/prefixes to the following words in accordance with the meanings given against them. (Oct. '98)**

1. national : many
2. stop : self
3. weight : without
4. like : resembling

**XXIV. Make negatives from the following words by adding appropriate affixes. (Apr. '97)**

1. fair
2. smoker
3. understand
4. care

**XXV. Add the correct prefixes to the following words to produce their opposites. (Apr. '96)**

1. justice
2. material
3. possible
4. comfort

**XXVI. Add the correct prefixes to the following words to produce their opposites. (Nov. '96)**

1. destructible
2. common
3. exceptional
4. skilled

**XXVII. Add the correct prefixes to the following words to produce their opposites. (Apr. '97)**

1. comfortable
2. reliable
3. pure
4. sensitive

**XXVIII. Add prefixes/suffixes to the following words in accordance with the meanings given against them. (Apr. '96)**

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.

**XXIX. Add prefixes/suffixes to the following words in accordance with the meanings given against them. (Nov. '96)**

1. marine             : under the sea
2. pollution          : against pollution
3. geo                 : study of the earth
4. speed              : instrument for measuring speed

**XXX. Add prefixes / suffixes to the following words in accordance with the meanings given against them. (Apr. '97)**

1. national           : having contact with many nations
2. developed         : not developed
3. simple             : make simple
4. Weight            : without weight

## CHAPTER 14 SPELLING AND PUNCTUATION

### PUNCTUATION

**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.

**116**      Technical English

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

(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.

**118**    **Technical English**

- (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.

#### 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'."

**120**      Technical English

- (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

## 12. Capital Letters

- (a) A sentence begins with a capital letter.  
He is a student.  
Today is a working day.

## 122    Technical English

- (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, Shakespearean

- (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 | : | Anna University, Govt. Higher Secondary 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

- (g) Capitalise specific geographic and place names.

The Sahara Desert

- (h) Capitalise the first word of a direct quotation.

He said, "It is wrong on your part to say so."

- (i) Capitalise the titles of literary, musical and art works.

Paradise Lost

The Billy Boy (painting)

- (j) Capitalise the names of subjects.

In the first year of University he took three subjects: Biology, Chemistry and Physics.

- (k) Capitalise titles of persons, including degrees, and their abbreviations when used as part of a proper name.

John D. Rockefeller, Jr. founded Rockefeller Centre.

- (l) Capitalise the official names of government departments, the titles of high ranking officials, and names of legislative bills and Acts.

The Ambassador, the Secretary of State, the Prime Minister, President Tito, the Department of Inland Revenue, the Treaty of Versailles.

- (m) Capitalise the names of objects, animals, seasons, and ideas, when treated as if they were human.

'Sport, that Wrinkled care derides,  
 And Laughter holding both his sides.' - Milton.

- (n) Capitalise north, south, east and west and their derivatives. (e.g. northern, south-west) when they refer to sections of a country or the world. Do not capitalise these words to indicate direction only.

President Snow is going on a tour of the Far East.

Turn east at the next corner.

- (o) Capitalise the first word and all nouns in the salutation of a letter, as well as the first word of the complimentary close.

Dear Uncle Tony

My dear

Yours sincerely

**EXERCISE I****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
2. are there any advantages in the computerisation of work in large establishments if so what are they

**II. Punctuate the following.**

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)
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  
(Apr. '97, Apr. '96)
3. consequently the department of physics and astrophysics has issued its own dos and dnts.  
(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)
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 reality 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 lanier 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 johannutenberg (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 fateh 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)

## SPELLING

### Correct the spelling mistakes.

#### EXAMPLES

- |    |                      |                 |
|----|----------------------|-----------------|
| I. | 1. tiffen            | 21. alright     |
|    | 2. skillful          | 22. oppurtunity |
|    | 3. grammer           | 23. catagory    |
|    | 4. truely            | 24. dicpline    |
|    | 5. duely             | 25. deisel      |
|    | 6. Your's faithfully | 26. wiegth      |
|    | 7. fulfill           | 27. vaccum      |
|    | 8. Ist               | 28. independant |
|    | 9. liquified         | 29. parallel    |
|    | 10. commitee         | 30. hight       |
|    | 11. accomodation     | 31. governer    |
|    | 12. prevelage        | 32. government  |
|    | 13. enterance        | 33. cooly       |
|    | 14. pronounication   | 34. speedometre |
|    | 15. twelveth         | 35. accelerater |
|    | 16. momento          | 36. angryly     |
|    | 17. tempervary       | 37. landry      |
|    | 18. calender         | 38. protien     |
|    | 19. inspite of       | 39. benefitted  |
|    | 20. begining         | 40. proffessor  |

#### ANSWERS

- |            |                 |
|------------|-----------------|
| 1. Tiffin  | 21. all right   |
| 2. skilful | 22. opportunity |
| 3. Grammar | 23. category    |
| 4. truly   | 24. discipline  |
| 5. duly    | 25. diesel      |

**128**    **Technical English**

- |                     |                 |
|---------------------|-----------------|
| 6. Yours faithfully | 26. weigh       |
| 7. fulfil           | 27. vacuum      |
| 8. I                | 28. independent |
| 9. liquefied        | 29. parallel    |
| 10. committee       | 30. height      |
| 11. accommodation   | 31. governor    |
| 12. privilege       | 32. government  |
| 13. entrance        | 33. coolly      |
| 14. pronunciation   | 34. speedometer |
| 15. twelfth         | 35. accelerator |
| 16. memento         | 36. angrily     |
| 17. temporary       | 37. laundry     |
| 18. calendar        | 38. protein     |
| 19. in spite of     | 39. benefited   |
| 20. beginning       | 40. professor.  |

**II.**

- |                 |                 |
|-----------------|-----------------|
| 1. prohibited   | 21. lable       |
| 2. septick      | 22. continous   |
| 3. maintainance | 23. millenium   |
| 4. seperate     | 24. recieve     |
| 5. definatly    | 25. mattress    |
| 6. comparitive  | 26. awefully    |
| 7. reducable    | 27. digestable  |
| 8. servicable   | 28. gaurdian    |
| 9. stupify      | 29. transfered  |
| 10. resistable  | 30. celebration |
| 11. remmitance  | 31. repeatition |
| 12. dependable  | 32. sieze       |
| 13. tommorow    | 33. innoculate  |
| 14. irrelevant  | 34. procede     |
| 15. blueish     | 35. occurrence  |



- |                |                 |
|----------------|-----------------|
| 16. curriculum | 36. occasion    |
| 17. tarrif     | 37. advantagous |
| 18. supercede  | 38. tution      |
| 19. hygiene    | 39. grateful    |
| 20. bachelor   | 40. valueable   |

## ANSWERS

- |                |                  |
|----------------|------------------|
| 1. prohibited  | 21. label        |
| 2. septic      | 22. continuous   |
| 3. maintenance | 23. millennium   |
| 4. separate    | 24. receive      |
| 5. definitely  | 25. mattress     |
| 6. comparative | 26. awfully      |
| 7. reducible   | 27. digestible   |
| 8. serviceable | 28. guardian     |
| 9. stupefy     | 29. transferred  |
| 10. resistible | 30. celebration  |
| 11. remittance | 31. repetition   |
| 12. dependable | 32. seize        |
| 13. tomorrow   | 33. inoculate    |
| 14. irrelevant | 34. proceed      |
| 15. bluish     | 35. occurrence   |
| 16. curriculum | 36. occasion     |
| 17. tarrif     | 37. advantageous |
| 18. supersede  | 38. tuition      |
| 19. hygiene    | 39. grateful     |
| 20. bachelor   | 40. valuable     |
- III.**
- |                |               |
|----------------|---------------|
| 1. tobacco     | 11. liquor    |
| 2. superficial | 12. que       |
| 3. ignorance   | 13. obedience |
| 4. hinderance  | 14. mosquito  |

**130**    🖱    Technical English

- |                |                |
|----------------|----------------|
| 5. serpant     | 15. benifit    |
| 6. existance   | 16. guarantee  |
| 7. lemanade    | 17. psychology |
| 8. regreted    | 18. particuler |
| 9. archestra   | 19. influence  |
| 10. ambassadar | 20. dysentary  |

**ANSWERS**

- |                |                |
|----------------|----------------|
| 1. tobacco     | 11. liquor     |
| 2. superficial | 12. queue      |
| 3. ignorance   | 13. obedience  |
| 4. hindrance   | 14. mosquito   |
| 5. serpent     | 15. benefit    |
| 6. existence   | 16. guarantee  |
| 7. lemonade    | 17. psychology |
| 8. regretted   | 18. particular |
| 9. orchestra   | 19. influence  |
| 10. ambassador | 20. dysentery  |

**IV.**

- |                 |                 |
|-----------------|-----------------|
| 1. parachute    | 11. milage      |
| 2. dillema      | 12. quarel      |
| 3. chocklate    | 13. faminine    |
| 4. arithmatic   | 14. laberatory  |
| 5. mamorandum   | 15. burgler     |
| 6. oraly        | 16. indelable   |
| 7. convertable  | 17. combustable |
| 8. permissiable | 18. brakable    |
| 9. changable    | 19. eligeble    |
| 10. hypocrysy   | 20. admissable. |

**ANSWERS**

- |                |                 |
|----------------|-----------------|
| 1. parachute   | 11. mileage     |
| 2. dilemma     | 12. quarrel     |
| 3. chocolate   | 13. feminine    |
| 4. arithmetic  | 14. laboratory  |
| 5. memorandum  | 15. burglar     |
| 6. orally      | 16. indelible   |
| 7. convertible | 17. combustible |
| 8. permissible | 18. breakable   |
| 9. changeable  | 19. eligible    |
| 10. hypocrisy  | 20. admissible  |

**EXERCISE II****Correct the spelling mistakes.**

- |             |                   |                 |
|-------------|-------------------|-----------------|
| <b>I.</b>   | 1. tekhnology     | 6. tradishional |
|             | 2. devulped       | 7. particulerly |
|             | 3. catre          | 8. skiled       |
|             | 4. premetive      | 9. feecture     |
|             | 5. aproprate      | 10. veriety     |
| <b>II.</b>  | 1. afordable      | 6. operasion    |
|             | 2. resorces       | 7. meterial     |
|             | 3. culteraly      | 8. unpoluting   |
|             | 4. acceptable     | 9. fisycal      |
|             | 5. environemetaly | 10. pedel       |
| <b>III.</b> | 1. musle          | 6. combuschen   |
|             | 2. necessities    | 7. elektrik     |
|             | 3. igzample       | 8. fuals        |
|             | 4. bycycle        | 9. inovative    |
|             | 5. internel       | 10. seriously   |

**132**      Technical English

- IV.**
- |              |                 |
|--------------|-----------------|
| 1. abundant  | 6. duel-purpose |
| 2. potantial | 7. pumbs        |
| 3. reelized  | 8. impliments   |
| 4. roteting  | 9. permanant    |
| 5. modyfied  | 10. atachment   |

According to the 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.**

The aim of the authors are to describe about the benefits 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 traffic 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 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.

**5. Correct the mistakes in English in the given passage: (Apr. / May 2004)**

A famlier sigh in the Indian countriside 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 III****Correct the mistakes in the given passages.**

1. The first computer to be developed were all large mainframe computers, and these type of computer is still very much today used.
2. A modern mainframe is can carry out many different job at same time and can be use simultaneous with many users.
3. Each user accesses the mainframe through a terminal who acts as input device and output device both.
4. 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.

**134**        Technical English

5. 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.
6. 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.
7. They often known as PCs (personal computers) since there are enough cheap for some individuals to buy.
8. 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.
9. 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 quantities. (Dec. 2001)
10. 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)
11. 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 explenation 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)
12. 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 IV****Edit the following by correcting the mistakes in spelling, grammar and punctuation.**

1. From the ekonomic point of view, solar cookers are idle cooking devises far ruel 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 vegetibles.
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 'community taip hybrid soler cuker' 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 ransom.

## CHAPTER 15 'WH' QUESTION FORMS

### 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.

1. He came here last week.
2. The Principal gave away the prizes.
3. My father goes to the office at 8.30 a.m.
4. The Correspondent will preside over the function.
5. I am going to my native place next week.
6. He sells good cakes.
7. She passed the examination last year.
8. The book costs Rs.50/-.
9. I have done ten exercises this week.
10. He met me this morning.

### ANSWERS

1. When did he come here?
2. Who gave away the prizes?
3. When does your father go to the office?
4. Who will preside over the function?
5. When are you going to your native place?
6. What does he sell?
7. When did she pass the examination?
8. How much does this book cost?
9. How many exercises have you done this week?
10. When did he meet you?



## EXERCISE

### Frame suitable questions for the following statements.

1. John Milton wrote *Paradise Lost*.
2. There are 15,000 books in our college library.
3. The function is on Wednesday
4. Gopal knows the answer to this question.
5. I reached home at 9 o'clock.
6. Sugar makes tea sweet.
7. I was late because the bus was late.
8. I keep it in my pocket.
9. He bought the book yesterday.
10. Mr John teaches us English.

## CHAPTER 16 SCANNING AND INFERENCE

### READ THE FOLLOWING PASSAGE CAREFULLY AND ANSWER THE QUESTIONS.

Professor Amartya Sen is a noted economist – philosopher. He was the first Asian economist to get the Nobel prize. *Amartya Sen was awarded the Nobel prize in 1998 and the Bharat Ratna in 1999.* The Nobel prize in 1998 for Economic science was instituted by the Bank of Sweden in the memory of Alfred Nobel. The prize was in recognition of Sen’s contribution to the study of famines.

Sen was born in Shantiniketan in 1933. He was named ‘Amartya’ – ‘the one who deserves immortality’, by Rabindranath Tagore. The poet had told Amartya’s parents, “I can see the boy will grow into an outstanding person.” As a school boy Amartya had dreamt of different professions : first a Sanskrit scholar like his grand-father, then a physicist, later a mathematician. However, when he joined Calcutta’s Presidency College he studied Economics. As a boy of ten, he had witnessed the horrors of the Bengal famine of 1943. More than five million people had died. He had seen people dying in front of his house. It made him think about the causes of famine. “When I took on the famine work in a formal way thirty years later, I was still haunted by the memories of that period”, he said.

Sen has taught in different universities around the globe: Jadavpur University, Delhi School of Economics, London School of Economics, Oxford, Harvard and Cambridge. Sen was Master of Trinity college at Cambridge. No Indian had occupied this coveted position before. His books and teaching has won him admirer all over the world. He has written 21 books and over 200 articles. In all his works, his primary concern has been the well-being of the people, especially the poor. He has analysed the causes of famine and starvation. He disagrees with the popular view that shortage of food is the main cause of famine. In his famous book titled *Poverty and Famines – An Essay on Entitlement and Deprivation*, he showed what other factors contribute to it. His studies were guided by a desire to discover the roots of poverty. “I was always concerned with the economically disadvantaged, the poor, the hungry, the unemployed, the starving.”

Prof. Sen’s work on poverty led to the drawing of the ‘poverty line’, a measure widely used in the UN and other agencies to determine the level of poverty in a particular country. Prof. Sen believes in Welfare Economics and Social Choice Theory. He emphasizes the need for education for an all-round development of the learner’s personality. Without education, he says that people cannot make use of the available facilities.

Prof. Sen has shared the prize money with a charity trust. He named it Pratiti Trust after his house in Shantiniketan. This trust will spend money primarily on education and health care. These have been Sen’s major concerns over the years. In spite of his long years of living abroad

he retains his Indian nationality. He is deeply attached to India, its people, culture and tradition yet he has an outlook which is global. He is not limited by national boundaries. He is a citizen of the world.

## QUESTIONS

1. What does the word 'amartya' mean?
2. Where did Prof. Amartya Sen study Economics?
3. What was the primary concern in his writings?
4. Why was Prof. Sen awarded the Nobel prize?
5. What did Prof. Sen do with his prize money?

## ANSWERS

1. The one who deserves immortality.
2. Prof. Amartya Sen studied Economics at Calcutta's Presidency College.
3. The Primary concern in his writings was the well being of people especially the poor.
4. Prof. Sen was awarded the Nobel Prize for his contribution to the study of Famine.
5. He shared the prize money with a charity trust called Pratiti to spend money primarily on education and health.

## CHAPTER 17 LISTENING AND NOTE-TAKING

### LISTENING

**“We are given two ears but only one mouth, because listening is twice as hard as talking”.**

Good communication, requires good listening skills. Effective communication exists between two people when the receiver interprets and understands the sender’s message in the same way the sender intended it.

Good listening leads to easy communication. In order to be a good listener, it is necessary to appreciate the listening process and master listening skills.

### The Process of Listening

Listening is a process. Listening is a lot more than hearing. Listening starts with hearing but goes beyond. In other words, hearing is necessary but not sufficient condition for listening. Listening involves hearing with attention. Listening is a process that calls for concentration. Hearing refers to the perception of sound with the ear. Hearing is a physical act. Listening is done not only with the ear, but also with the other sense organs. In other words, listening has much to do with the ears, the eyes and the mind. Hearing is physical, while listening involves both the body and the mind.

It is an oft-quoted research finding that the human mind can process words at the rate of about 500 per minute, whereas a speaker speaks at the rate of about 150 words a minute. It is this gap that makes for ineffective listening as the mind of the listener races faster than that of the speaker.

Listening is a total process that involves hearing with attention, being observant and making interpretations. Good communication is essentially an interactive process. It is quite often a dialogue rather than a monologue. It is necessary for the listener to be interested and also show or make it abundantly clear that one is interested in knowing what the other person has to say. Good listeners put the speaker at ease. The listener can and should help the speaker in establishing a wave length through which communication traverses smoothly.

The process of listening involves: Hearing, Decoding, Comprehending, Remembering and Responding.

#### (a) Hearing

It is a physical act. It relates to receiving the words sent out by the speaker for further processing by the listener.

### **(b) Decoding**

Decoding involves sensing and filtering of verbal messages. Decoding takes place as a conscious exercise. It involves filtering, the message received to be classified as wanted or unwanted, useful or otherwise. The process of decoding discards useless or unwanted information. This filtering process is subjective in nature and a person chooses to retain only that which makes sense to him. Sense of appeal and sense of judgement come into play during sensing and filtering the message. The message is thereafter sent to the next process.

### **(c) Comprehending**

The next level consists of comprehending or understanding. The filtered message assumes a meaning. This activity can also be described as absorption or assimilation. The listener understands what the speaker has tried to convey. The message received has been heard, sensed, filtered and interpreted. In doing so, the listener has brought into play the listener's own knowledge, experience, perception and cognitive power. The listener has used not only the body, but also the intellect in grasping the meaning of the message. The verbal message apart, the non - verbal communication has also been studied and noted.

### **(d) Remembering**

Messages received are, quite often, not just for immediate consideration and action, but also for future use. Although the absorption takes place in the present, its use may take place some time in the future. Memorizing the message, therefore, assumes significance. Remembering relates to a process, whereby the assimilated message is stored in memory to facilitate future recall.

### **(e) Responding**

Response of the listener may take place at the end of the verbal communication or even earlier. When it is intended to provide feedback to the communicator, response occurs towards the end. If however, there is a need to seek clarification or a need to empathize with the speaker, it may take place earlier. This may take the form of prodding, prompting or reassuring that the message is being well received.

Together, these ensure that the listening part of the communication process becomes meaningful and effective.

## **NOTE – TAKING**

### *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.

**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

<i>Example: Short word</i>	<i>Long word</i>
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

<i>Example:</i> killed	instead of	were killed
stabbed	”	was/were stabbed
arrested	”	was/were arrested

## (b) By using the ‘to-infinitive’ to indicate future time

*Example:* ‘Haryana to free aged life convicts’ to mean that the Haryana Government will free aged life convicts.

## 4. By using Abbreviations and Acronyms

<i>Example:</i> AIDS	Acquired Immune Deficiency Syndrome
LTTE	Liberation Tigers of Tamil Elam
IA	Indian Airlines
PM	Prime Minister, etc.

## 5. By using Abbreviations of words

*Example:* Medicos    medical students

## 4. By using only the first few letters of the word

<i>Example:</i> Technical	Tech.
Abbreviation	abbr.
Figure	fig.
Examination	exam.
Representative	rep.

**144**      Technical English

5. 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.

<i>Example:</i>	Government	govt.
	Department	dept.
	Engineer	enr.

6. By dropping all or most of the vowels in the word.

<i>Example:</i>	Management	mngmnt.
	Develop	dvlp.
	Possible	possbl.
	External	extnl.
	Technique	technq.

7. By using symbols.

*Example:*

- |     |      |   |
|-----|------|---|
| (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   |

8. By using short Noun phrases instead of long phrases.

**EXAMPLE**

- Car bomb blast instead of ‘a blast caused by a bomb that was planted in a car’.
- Subsidised food grain instead of ‘a scheme to provide food grain at subsidised rates’.
- Aged life convicts instead of ‘convicts who have been sentenced to life imprisonment and are aged’.
- Mine blast instead of ‘blast caused by explosion of a mine’.

**EXERCISE I**

Read the following passage and make notes on it.

**Anaesthetics : Pain Killing Drugs**

Anaesthetics are drugs that cause 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 the 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.

Two drugs often used as general anaesthetics in operations of short duration are the liquids vinylene, 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 the patient to be unconscious. For minor operations, only restricted, or local area of the body need to be made insensible to pain; thus a local anaesthetic is administered. The local anaesthetic prevents sensation 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

**146**    Technical English

## 4. Local anesthetic

- 4.1 Used for minor operations
- 4.2 Prevents 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**

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 most 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**

- 1. Aim of advertising – 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

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.

**148**      Technical English

## 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**

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, 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**

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 18 PARAGRAPH WRITING – COMPARISON AND CONTRAST

### INTRODUCTION

Comparison/contrast essays focus on the ways in which certain things or ideas—usually two of them—are similar to (this is the comparison) and/or different from (this is the contrast) one another.

### Structure of a Compare and Contrast Essay

1. Introduction
2. Main body
3. Conclusion

#### 1. Introduction

An introduction should include two or three sentences of background information and a Thesis statement.

A Thesis statement can be:

- Which you think is better
- How similar they are to each other
- How different they are.

#### 2. Main Body

There are two ways of organizing the main body of the essay:

- **Subject by subject organisation** - Begin by saying everything you have to say about the first subject you are discussing, then move on and make all the points you want to make about the second subject (and after that, the third, and so on).
- **Point by point organisation** - Rather than addressing things one subject at a time, you may wish to talk about one point of comparison at a time.

#### 3. Conclusion

Once you have analyzed the key points either conclude by choosing the better alternative, highlight the differences or state that they are very similar.



### **Cue words**

Another technique in writing the compare and contrast essay is to use cue words. Cue words are clues to whether you are comparing your subjects or contrasting them. The following cue words may be helpful in signalling your intentions:

like, similar to, also, unlike, similarly, in the same way, likewise, again, compared to, in contrast, in like manner, contrasted with, on the contrary, however, although, yet, even though, still, but, nevertheless, conversely, at the same time, regardless, despite, while, on the one hand ... on the other hand.

### **Steps to write a Compare and Contrast Paragraph**

1. Generate a list of similarities and differences.
2. Decide which similarities and differences to focus on.
3. Organize your paper clearly and effectively.

### **EXAMPLE**

#### **1. Write a paragraph comparing Television with Books.**

Books were the first medium to give people information on a printed page, then a Scottish man John Logie Baird transmitted the first pictures on 25th October 1925 and television was born.

For most people watching television is better than reading books. Television is a very popular medium. Part of the reason for its popularity is the number of television channels, which people can easily choose via their remote control. Another reason that people watch television is to relax. In fact television is so popular that it has become a part of our everyday routine.

Books are a very valuable source of information. There are many more books available than television channels. Secondly the reader can choose the book and the part of the book that they want to read. And thirdly speed readers can read faster than they get the information from a television programme. Books and television can be found nearly everywhere on the planet. Books are cheap to produce and for popular subjects are cheap to buy. Books are also highly portable and can be read nearly anywhere.

However televisions are installed in nearly every household and only need to be switched on to provide new entertainment and information.

Both books and television are great sources of information and entertainment, but television is very relaxing with sound and moving images and is therefore the better medium.

### **EXERCISE**

1. Write a paragraph comparing human beings with robots.
2. Write a paragraph comparing life in a village with life in a city.

## CHAPTER 19 CREATIVE THINKING AND SPEAKING

Creative thinking and speaking is used to promote creativity, speaking and researching skills of students. For a creative speech to be successful, it must be interesting and entertaining to the audience.

### **Basic steps in Creative thinking:**

The creative thinking process involves four steps.

#### ***Step 1: Analysis***

Analysis involves finding out the who, what, where, when and how of the situation. Once analysis is complete, you should be able to completely explain the situation including any obvious problems or issues.

#### ***Step 2: Brainstorming***

This is the true area of creative thinking. Once you know about the situation, you can begin to start thinking. Brainstorming can take on many forms. You can write things down, talk things out or even conduct experiments. Brainstorming should be free flowing and recorded, so that no good ideas are lost.

#### ***Step 3: Break It Down***

Now that you have a nice collection of ideas, you can start going through them and weeding out ones that will not work. You may find that if you change an idea just a little, that it will work much better. This step is all about tweaking your ideas. You should end up with the ideas that seem to be the best solutions.

#### ***Step 4: Review***

The final step involves getting your final idea. This will help you to come up with one or two ideas that seem to stand out and be the best ideas.

### **EXERCISE**

#### **Speak on the following topics:**

1. A day as a bird.
2. Life in the moon.

# UNIT III



## CHAPTER 20 SINGLE LINE DEFINITIONS AND EXTENDED DEFINITIONS

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. e.g., Brass is an alloy of copper and zinc.

**158** 🖱️ Technical English

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.
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 program facilitating execution of a series of user programs 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 program 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 program to translate a high level language program to machine language.
58. **Computer** an electronic device for storing and analysing information fed into it, for calculating, or for controlling machinery automatically.

**160** 🖱️ Technical English

59. **Computer graphics** concerned with picture generation, manipulation and display by a computer.
60. **Computer program** a computer program 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 current in electronic equipments.
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.
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. **Gobar 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.

**162** 🖱️ Technical English

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 instrument used by people climbing mountains for cutting steps, etc., in ice.
97. **Icon** a small symbol on a computer screen representing a program 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, e.g. 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.

**164** 🖱️ Technical English

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.
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 on to 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 ( $0^{\circ}$  to  $180^{\circ}$ ) 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, program, 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 programs 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.

**166** 🖱️ Technical English

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.
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.

## 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. Bluetooth technology

(May/June 2005)

Bluetooth 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.

**168**      Technical English**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.

**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 a 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.

**170**      Technical English30.   **Safety valve** (May 2002)

- (i)   A device that releases steam or pressure in a machine when it becomes too high.
- (ii)   A harmless way or 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 current 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, program, 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.

**EXERCISE****Give the definitions for the following.**

1.   Airconditioner (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 (Apr. '95, Apr. '96, Oct. '96, Apr. '97, Nov. '98, Oct. 2000)
16. Computer program (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)
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)

**172** • Technical English

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 (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
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 (Apr. '96)
57. Water heater (Apr. '96)
58. Windmill (Apr. '97)
59. Workshop (Nov. '96, Apr. '97)

## CHAPTER 21 SEQUENCING OF SENTENCES

### REWRITE THE FOLLOWING JUMBLED SENTENCES IN THE CORRECT ORDER.

- 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 crafts people.
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 crafts people.
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 on.
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.

**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.

**176**      Technical English

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 22 INSTRUCTIONS

To write 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. 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.
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. The following instructions to 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. Give a few 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. 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.

**EXERCISE**

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.
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 23 PERSUASIVE SPEAKING

Persuasion is the art of speaking in a convincing manner. A persuasive speech is a speech aimed at influencing values, ideas, beliefs and attitudes of the audience. Certain things have to be meticulously observed in the preparation and presentation of persuasive speeches. A persuasive speech is at once an art and a science. As an art it involves gauging the minds of the audience, knowing the situation and the time of presentation. As a science, one has to use the right word at the right time and in the right place, to a right kind of audience. This precision makes it a science.

### **MAIN ELEMENTS OF A PERSUASIVE SPEECH:**

The main elements of a successful and effective persuasive speech are to convey your credibility as a speaker and your passion for the subject :

1. **Credibility** - Establish credibility by demonstrating expertise, evidence and knowledge of the subject - presenting facts, statistics or quotes together with any personal experiences to make the audience believe in what you are saying.
2. **Passion** - Conveying the subject with enthusiasm, passion and conviction to appeal to the emotions of the audience.

### **Persuasive Strategies:**

If you want to be convincing and influence people, follow these basic principles:

Research your audience

List their needs

Write down what you want to achieve

Plan your strategy

An Eight Point plan to persuade the audience:

1. Establish a rapport with your audience. Look for common ground and common concerns.
2. Give a quick factual overview of the situation.
3. Explain the need or the problem. Why is it important? How does it affect them, their families, their staff or customers? Try to dramatise your presentation.
4. Give your solution for meeting the need or overcoming the problem. Explain why it is the best solution.
5. Show how your idea will work. Prove it with a demonstration or use convincing visual aids.

**182** • Technical English

6. Tell them against how they will benefit.
7. Explain what action they need to take. Make it easy for them.
8. Conclude with a simple memorable summary.

***Do's and Don't's******Do...***

- Analyse your audience – their wants, desires and needs.
- Set yourself a clear achievable objective.
- Focus on a simple, clear message.
- Familiarise yourself with the environment you will be using.
- Plan your publicity early.
- Keep visual aids simple. Use good visuals that make an impact that sticks.
- Rehearse your presentation well – preferably with a critical audience.
- Dress for the occasion – try to mirror the dress of your audience.
- Arrive early at the venue to inspect it.
- Catch your audience at a time when they are alert and you are fresh.
- Establish a rapport with your audience.
- Make sure all can hear and see you and your visual aids.
- Tell them what you are going to tell them and what's in it for them.  
Then tell them with examples or anecdotes. Finally tell them again what you have told them.
- Make sure your talk has a climax and a memorable conclusion.
- Evaluate your presentation.
- Follow up with media publicity. Distribute a press hand – out with background information.

***Don't...***

- Prepare your presentation in isolation.
- Read a prepared script.
- Hide behind a lectern.
- Have too many words on your visual aids.

- Arrive late.
- Antagonise your audience.
- Use words your listeners do not understand.
- Talk down to your audience.
- Make too many points.
- Give out your hand – outs until you finished your presentation.

## CHAPTER 24 DISCUSSING IDEAS

Group discussion is a task which resembles an informal conversation among a group of people. Formally, it is a scheduled discussion between discussants, discussing their views on a particular subject.

Group discussion facilitates the assessment of the candidate's personality and behavioural patterns in general and psychological terms.

It tests the following traits of an individual:

- Ability to work in a team
- Communication skills
- Leadership skills
- Reasoning ability
- Initiativeness
- Assertiveness
- Creativity
- Flexibility
- Ability to think and act independently.

### **Effective group discussion skills**

1. Be active and interested in the discussion.
2. Always maintain eye – contact with the person who is talking.
3. Find the earliest opportunity to express your ideas.
4. Express your contrary point of view politely.
5. Speak confidently and clearly.
6. Avoid a monotonous tone.
7. Listen to others' ideas intently.
8. Think and organize your ideas before you speak.
9. Be always relevant and interesting.
10. Be logical and persuasive.
11. Accept criticism gracefully.
12. Be genial and encouraging.



13. Always be factually accurate in your statements.
14. Avoid repetition and irrelevant ideas.
15. Adopt a positive body language.

## CHAPTER 25 ROLE-PLAYS

Role-playing can be thought of as an unstructured drama where people act out roles for a particular scenario. For instance, assume a two people sale-scenario. One acts as the sales person. The other acts as the customer.

Role-playing is a better learning tool which promotes thinking, creativity and other behavioural skills of an individual.

### TYPES OF ROLE-PLAYING

#### 1. Individual role-playing

Here an individual assumes a role or character in a fictional setting.

#### 2. Interactive or Team role-playing

In this type of role-playing, two or more teams actively participate and act out the relevant role in the scenario.

### COMPONENTS OF ROLE-PLAYING

- A clearly defined and simple “situation” applicable to the problem or issue at hand;
- Written descriptions of the “roles” (characters) for participants to play;
- Goals to be accomplished during the session;
- A trained small-group leader/facilitator;
- Sufficient time for each participant to speak;
- An overall time limit for the session; and
- An evaluation period.

### EXERCISE

#### *1. Organise Role-plays for the following situations*

1. You lend a friend one of your books. She returns it with pages missing.
2. Someone in the van you are riding in decides to sing and does so for 15 minutes. It begins to get on your nerves and you politely ask her to stop, but she doesn't.
3. You are being interviewed for a job in a new field and the director asks, “Why should I hire you when you have no experience?”

## II. Organise Role-plays for the following role-play cards

1.

**Group A (playing the role of a customer support person):**

“This customer is very influential. To lose them would be highly damaging to the company. You must do anything within reason to retain them.”

**Group B (playing the role of the customer):**

“You have seriously overspent your software budget and while you are not unhappy with the product, you must convince the customer support person to take back the product and refund your money. Since you cannot admit the actual situation (as it would clearly not be legitimate for a refund), you must find problems with the software sufficient to legitimise the return and refund.”

2.

**It's A Heat wave!**

**A:** You bought a train ticket two minutes ago, but you realise now that you gave the wrong date. You want to change your ticket.

**B:** A bought a non-refundable train ticket. They cannot make changes or get their money back.

**Expression: “I don't believe it. This is ridiculous!”**

3.

**Student A:**

You're now in your second country, but unfortunately you've just been mugged and have lost your bag with your passport, air tickets and money in it. You're at the police station to report the theft.

**Student B:**

You're now in your second country but unfortunately your friend's bag's been stolen. You're at the police station to help your friend.

**Student C:**

You're a police officer. Two westerners are in your police station to report a theft. You don't believe their story. Ask them a lot of questions to find out if they are telling the truth.



# UNIT IV



## CHAPTER 26 MODAL VERBS AND PROBABILITY

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

#### Example

*Can* I help you with those bags?

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

#### Example

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?

**192**      Technical English

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

**Example**

*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.

- 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

**Example**

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

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

**Example**

*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

### Example

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.

**194**      Technical English

4. **Necessary** If you tell someone else that they must do something pleasant, you are emphasizing 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?

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.

**196**      Technical English

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

**Example**

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.

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 headmaster 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 27 CONCORD 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 as,

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.



5. *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.

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.

## 202 • Technical English

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

*Example* None of the counterfeit money *has* been found.

None + of the + plural count noun + plural verb.

*Example* 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.
2. None of the tomatoes was salvaged from the overturned truck.
3. Each are confident that he or she knows all the facts.
4. The cost of the computers are dropping day-by-day.
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 equipment 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)

**204**      Technical English

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 advice.
50. Politics are a very interesting subject.
51. Neither side have scored any goal.

## CHAPTER 28 CORRECTION OF ERRORS

### Correct the following sentences.

1. Somebody in the company might break their promise to the committee.
2. If anybody asks for me, tell them I'll return at 2 O'clock.
3. Everyone likes to have their way.
4. Each must do their best.
5. Each of the boys got their prize.
6. Each boy took their turn.
7. Every General and every Admiral did their duty well.
8. Every man and every boy cast their vote for you.
9. Hari or Govind may offer their services.
10. Neither Ram nor Shyam took their food today.
11. Rama or Hari must lend their hand.
12. Either the manager or his assistants failed in his duty.
13. Such a man as they should be honoured.
14. John, which is my cousin, is a diligent boy.
15. Napoleon, who the French honour, died at St. Helena.
16. Coal, who is a very useful mineral, is found in Bengal.
17. The horse has hurt himself.
18. John is the man who we are going to recommend for the job.
19. Each of the students in the accounting class has to type their own research paper this semester.
20. Mr.Peter used to think of hisself as the only president of the company.
21. The president refused to accept either of the four new proposals made by the contractors.
22. I certainly appreciate him telling us about the delay in delivering the materials because we had planned to begin work tomorrow.
23. Writers and media personnel sell themselves best by the impression given in their verbal expression.
24. The test administrator ordered we not to open our book until he told us to do so.

25. Those of you who signed up for Dr. Daniel's anthropology class should get their books as soon as possible.
26. Anybody who has lost their ticket should report to the desk.
27. You should always look both ways before we cross the street.
28. Every Man have their own work to do.
29. Everybody thinks they have the right to strike.
30. Neither you nor Afzal have been selected.
31. Are you born in Chennai?
32. That will effect your health.
33. Please return back books to the library.
34. My uncle has left for Chennai yesterday.
35. I can be able to drive a car.
36. He entered into the room.
37. I and you are neighbors.
38. I, he and you are in the same class.
39. She is suffering with fever.
40. His hairs are brown.
41. If you will work hard, you will pass.
42. If I am a bird I would fly.
43. He bought new furniture.
44. According to my opinion, it is correct.
45. Her father gave her good advices.
46. His grandfather is died.
47. Fill up the application form.
48. The cost off all these things have risen.
49. They are using new machineries.
50. Before the doctor arrived, the patient died.
51. Be careful not to loose your money.
52. The dog jumped on the cat.
53. Will I help you?
54. Shall you help me?

**208**      Technical English

55. If you had worked hard, you would pass the examination.
56. He ordered to the servant to get out.
57. I went to a hotel and ordered for a cup of coffee.
58. She is interested to watch T.V.
59. You cant's avoid to make mistakes.
60. The porter carried all his luggages.
61. He asked me what I am doing.
62. The rain prevented me to go.
63. I am used to get up early.
64. The road is on repair and closed for traffic.
65. It is 10 O'clock in my watch.
66. All the players must come with uniform.
67. I want permission for half hour.
68. We must conform with the rules.
69. She was dressed with black.
70. He is afraid from the dog.

**ANSWERS**

1. Somebody in the company might break his promise to the committee
2. If anybody asks for me, tell him I'll return at 2 O'clock.
3. Everyone likes to have his way.
4. Each must do his best.
5. Each of the boys got his prize.
6. Each boy took his turn.
7. Every Generals and every Admiral did his duty well.
8. Every man and every boy cast his vote for you.
9. Hari or Govind may offer his services.
10. Neither Ram nor Shyam took his food today.
11. Rama or Hari must lend his hand.
12. Either the manager or his assistants failed in their duty.
13. Such a man as he should be honoured.



14. John, who is my cousin, is a diligent boy.
15. Napoleon, whom the French honour, died at St.Helena.
16. Coal, which is a very useful mineral, is found in Bengal.
17. The horse has hurt itself.
18. John is the man whom we are going to recommend for the job.
19. Each of the students in the accounting class has to type his own research paper this semester.
20. Mr.Peter used to think of himself as the only president of the company.
21. The president refused to accept any of the four new proposals made by the contractors.
22. I certainly appreciate his telling us about the delay in delivering the materials because we had planned to begin work tomorrow.
23. Writers and media personnel sell themselves best by the impression given in their verbal expression.
24. The test administrator ordered us not to open our books until he told us to do so.
25. Those of you who signed up for Dr. Daniels anthropology class should get your books as soon as possible.
26. Anybody who has lost his ticket should report to the desk.
27. You should always look both ways before you cross the street.
28. Every man has his own work to do.
29. Everyboby thinks he has the right to strike.
30. Neither you nor Afzal has been selected.
31. Were you born in Chennai?
32. That will affect your health.
33. Please return the books to the library.
34. My uncle left for Chennai yesterday.
35. I can drive a car.
36. He entered the room.
37. You and I are neighbours.
38. You, he and I are in the same class.
39. She is suffering from fever.
40. His hair is brown.
41. If you work hard, you will pass.

**210**        Technical English

42. If I were a bird I would fly.
43. He bought new furnitures.
44. In my opinion, it is correct.
45. Her father gave her good advice.
46. His grandfather is dead.
47. Fill in the application form.
48. The cost of all these things has risen.
49. They are using new machinery.
50. Before the doctor arrived, the patient had died.
51. Be careful not to lose your money.
52. The dog jumped upon the cat.
53. Shall I help you?
54. Will you help me?
55. If you had worked hard, you would have passed the examination.
56. He ordered the servant to get out.
57. I went to a hotel and ordered a cup of coffee.
58. She is interested in watching T.V.
59. You can avoid making mistakes.
60. The porter carried all his luggage.
61. He asked me what I was doing.
62. The rain prevented me from going.
63. I am used to getting up early.
64. The road is under repair and closed to traffic.
65. It is 10 O'clock by my watch.
66. All the players must come in uniform.
67. I want permission for half an hour,
68. We must conform to the rules.
69. She was dressed in black.
70. He is afraid of the dog.

## EXERCISE

### Correct the following sentences.

1. Each of the politicians explained their view.
2. Everybody have their own ideas.
3. Either Priya or Sita will bring their guitar.
4. The boy which was lazy was punished.
5. Every soldier and sailor was in their place.
6. I know the woman whom child was hurt.
7. The officials object to them wearing long dresses, for the inaugural dance at the country club.
8. Some of us have to study our lessons more carefully, if we expect to pass their examination.
9. One should always do your homework.
10. They were counting on me helping them.
11. I am going to a picnic.
12. I wish I have the job.
13. I have been here for the last one and a half month.
14. Sorry for the delay in replying you.
15. She is leaving for London today night.
16. Lakshmi is taller than any girl in the class.
17. I and he are friends.
18. I look forward to meet you.
19. Let you and I go together.
20. She bought three dozens oranges.
21. These news are good.
22. He was born in Delhi in India.
23. I work very hardly.
24. Fifty kilometers are a long distance to walk.
25. I bought some stationary yesterday.

**212** • Technical English

26. I enjoy to sing songs.
27. I complimented him for his success.
28. He wrote the answer with ink.
29. The gold is a precious metal.
30. I am accustomed with hot water.

## CHAPTER 29 CAUSE AND EFFECT EXPRESSIONS

**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 a 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.
  - (a) The growth of Chennai as an industrial city is the cause for the increase in vehicle population.
2. On account of bad road conditions accidents occur.
  - (a) Because of bad weather, the vehicle skidded.
3. Scarcity is the cause of the rise in the price of articles.
  - (a) The rise in the prices of articles is caused by scarcity.
4. 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.
5. 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.

**214** • Technical English

- (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.
6. The population has increased so much that there is a food shortage in the country.
  7. The country has abundant natural resources so that it can support itself.
  8. 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.
2. The machine was tested. It was installed.
3. It was raining. I couldn't go out.
4. He did not write the exams well. He did not pass.
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.
29. Several new blocks of buildings have been built there. The huge canopy of trees has disappeared.

## CHAPTER 30 SPEAKING ABOUT THE FUTURE PLANS

### EXAMPLES

#### 1. Talk about the country you would like to visit.

I have heard much about the beauty of the East as well as the West, about the wonderful islands in the Pacific and also in the Atlantic. In short, the whole world seems to be full of beautiful places. The country that I would like to visit, however, is the United States of America. My knowledge of the United States of America is derived from the [geography](#) and history books that I have read, the films that I have seen and the stories that I have heard from people who have visited this country.

The United States of America is a vast country with a mixed population. People from many different lands have come and settled here. This mixture of different races of people with different customs, religions, cultures and abilities have created a nation unique in history. Although this country has a very short history compared with that of the other large countries in the world, it is an example to the world of how people of different races could live together in peace and harmony. The exchange of ideas among the people of so many racial origins here has contributed greatly to the progress and prosperity of the nation. There are world famous scientists, doctors, lawyers, engineers, teachers and politicians whose original homes were in many different lands. The work of such men has made this country a wonderful land indeed. The roads, buildings and [cinemas](#) here may be said to be the best in the world. There are many places and things of interest such as Hollywood, the United Nations building, Niagara Falls and the sky-scrapers. Even the natural vegetation and features are rich in variety. If one travels across the land, one will find different kinds of scenery in different places. Further, as the people here still follow their original customs and traditions, one will also have the feeling that one is passing through many different countries. The people of the United States are proud of their country, for it was their country that gave the modern world ideas of freedom. The name of Abraham Lincoln will always be remembered by those who believe in the freedom of men. It was the United States, again, who saved the world from destruction in two world wars. Such a country must be a wonderful land, and it is for this reason that I would like to visit this country some day.

#### 2. The kind of work which you hope to do when you leave the school.

It is very interesting to speculate as to what one could do after leaving the school. Normally it is too early for one leaving the school to decide upon a definite [career](#). One is not mature, enough at this stage to decide upon a future course. Everything is tempting and attractive and it is tough making a decision. A career depends on many factors. The occupation of one's parents, a successful neighbour or even an imaginary ideal, may influence the [kind of work](#) which one



hopes to do. If one's parent is a doctor or a lawyer one may decide to follow the same path. A book one has read or a popular movement may also influence one's future. I have made up my mind to become a doctor. With all the scientific achievements, man is not able to overcome diseases. He has found out medicines and ways to combat diseases but there is no way to eradicate them. As far as humanity is there, there will be diseases. Rich or poor, man suffers from diseases and the number of hospitals is a glaring witness to the presence of diseases. So there is more pleasure for me in serving the suffering humanity. I got the inspiration from Mother Theresa who got the Nobel Peace Prize. What a glorious service she has been doing for the sick and the dying in the streets of Calcutta. I may not rise to that rare height. A doctor is not merely a person who can prescribe a few tablets and give a shot here or there. In one sense, he plays the role of a helper of the Creator saving as many patients as possible. To be a good doctor requires a lot of insight into the patient's constitution and mind. A doctor must be careful in dealing with individual cases and he must be sympathetic. When a doctor replaces a heart or kidney he saves a patient. It is a challenge which is worthwhile. Since a medical man deals with humanity, he must be humane.

Another fact is that a medical man is always intimate with his patient, so it is also ethical to divulge a patient's sickness to anybody. Without fleecing a patient a doctor can earn a tidy sum of money if he has created a good name in his specialised field. So, for these reasons, I intend to take up Medicine.



# UNIT V



## CHAPTER 31 'IF' CONDITIONALS

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

1. If you do it, you will be happy.  
If he buys the book, he will read it.
2. 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

**222**      Technical English

can + V

shall + V

3. You will pass, if you work hard.
4. You will fall ill, if you drink dirty water.
5. I'll buy the cassette, if I go there.

**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.  
(**Note:** 'unless' is equivalent to 'if ..... not'.)
18. Unless you work hard, you will not pass.
19. If you do not work hard, you will not pass.

**EXERCISE I****Complete the following.**

1. If drivers do not obey traffic regulations,\_\_\_\_\_.
2. If the engine is serviced regularly,\_\_\_\_\_. (Apr./May 2004)
3. If the battery of the car is 'down',\_\_\_\_\_. (Nov./Dec. 2003)
4. If passengers stand on the footboards of buses,\_\_\_\_\_. (Apr./May 2004)
5. The aeroplane cannot take off,\_\_\_\_\_. (Nov./Dec. 2003)
6. If there are more pedestrians on the roads,\_\_\_\_\_.
7. If the weather is rough,\_\_\_\_\_.
8. The tyre will be damaged,\_\_\_\_\_.
9. If there is a power breakdown,\_\_\_\_\_. (Nov. '99)
10. Unless the water is pure,\_\_\_\_\_. (Oct. 2000)
11. If you don't apply lubricant to a machine periodically,\_\_\_\_\_.
12. If the coolant is not circulated in the core of the reactor,\_\_\_\_\_. (Apr. '97)
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,\_\_\_\_\_.

224 • Technical English

29. The mixture may ignite spontaneously,\_\_\_\_\_.

(Sentences 15-29 are taken from A.J. Herbert's The Structure of Technical English, page106).

## 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'+ verb.

### Conditional statements

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) + Other Words, S + would + Vb (Present tense) + Other Words

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'.

#### 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,\_\_\_\_\_.

**226** • Technical English

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,\_\_\_\_\_.

**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 as

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,\_\_\_\_\_.

## CHAPTER 32 GERUNDS

### GERUNDS

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.

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.

### EXAMPLES

#### Use the gerund form of the verb in the following sentences:

1. Always check the oil, before you *start* the car.
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.
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. (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. (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

### Use Gerund form of the verb in the following.

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.

## CHAPTER 33 INTENSIVE READING

‘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.

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 I

*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 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 on 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, 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.

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 (300,000 dead in 1737) and Assam (1897) saw the worst of them. A series of tremors ravaged Udaipur, 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 ocean 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 a 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 26<sup>th</sup> 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 the 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 re-laying 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 aging. 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 roads 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 words 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 re-lay 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.
  - (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.

**236**      Technical English

- (iii) Visibility will be better at night.
- (iv) CC roads will not disintegrate due to aging.

**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 re-lay 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) False  
(b) True  
(c) True  
(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, which we now know to be false. In the 100 years since Jules Verne published his book, the science of volcanology, as it is called, has made great strides. But even to the deepest, man has 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.

## 238 • Technical English

(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.

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.

**240**      Technical English

- (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) The car introduced by a German company 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) True

**242** • Technical English

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*****1. 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 proportion 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 proportion, 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 'commercial' 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.

**244**      Technical English

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 proportion
- (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?

**II. 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 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.

## 246 • Technical English

- (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

B

- |  |               |
|--|---------------|
| (a) Uncontrolled and moderate nuclear reaction | Paragraph I   |
| (b) The advantages of nuclear energy           | Paragraph II  |
| (c) Fission and fusion                         | Paragraph III |
| (d) The nuclear fission chain reaction         | Paragraph IV  |
| (e) Energy from the sun                        | 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
- 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.
- (b) Destructive weapons can be obtained from
- nuclear fusion.
  - nuclear fission.
  - both nuclear fission and nuclear fusion.
- (c) 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.
- (d) A violent nuclear explosion can destroy a whole town.
- within a few hours.
  - within a few minutes.
  - within a few seconds.
- (e) 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 atom.
  - when two or three neutrons go away from the adjoining atom.

## 250 • Technical English

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 (0.1rem); 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.

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

**252**      Technical English

- (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.

**EXERCISE*****1. 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 infra-red 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.

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?

**254** • Technical English

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 more hours of 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.

## 256 • Technical English

- (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) over tiredness.
  - (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 21<sup>st</sup> 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, 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
  - (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 time scale 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.

260    ←    Technical English

- (c) Countries all over the world need to shift to renewable sources of energy but the 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.
  - (iv) cleaning the oceans.

## CHAPTER 34 PRESENTATION OF PROBLEMS AND SOLUTIONS – DEBATING

A *Debate* is basically an argument. It is a formal discussion involving one or more people who develop arguments and logically defend their points to prove their position true.

In general, a debate is a kind of contest where you must support your argument and refute your opponent's argument with logical reasoning and rebuttals by giving facts and evidence. It is best to choose topics of interest to the participants. In order to support your argument, you may have to make statements which are against your own opinion. It is best never to agree with the opposite side until after the debate.

### Procedure for debating

Debating is a team event. All the participants will be divided into 2 teams, A and B and each team must decide which side of the argument to take: FOR or AGAINST the proposed topic of discussion. The team that agrees with the topic is called the AFFIRMATIVE and the team that disagrees with the topic is called the NEGATIVE.

FOR and AGAINST teams will be seated opposite one another (if the debate is going to take place in a room), or if it is going to take place online, virtual "rooms" will be created within the particular conference site. It may be a good idea to prepare your side of the argument first: delegate a person in each group to take note of ideas (in summarized form) put forward by the group. Carry out a 'brainstorming session' beforehand if necessary. By consolidating ideas, your side of the argument will flow more easily. All relevant ideas and opinions can then be mentioned one by one during the debate. The chairperson will start the debate by summarizing the situation at heart. This is followed by:

1. a 3-minute constructive speech from each side
2. two or three 2-minute rebuttals from each side turn by turn
3. a 3-minute concluding speech from each side
4. questions from the floor.

### General instructions

In a debating team each speaker has specified roles that they must fulfill to play their part in the team. They are laid out below in the order that the speakers will speak.

#### 1st Affirmative must

- define the topic.
- present the affirmative's team line—why the topic is true.
- outline briefly what each speaker in their team will talk about.
- present the first half of the affirmative case.

**1st negative must**

- accept or reject the definition. If you don't do this it is assumed that you accept the definition.
- present the negative team line—why the topic is false.
- outline briefly what each of the negative speakers will say.
- rebut a few of the main points of the first affirmative speaker.
- the 1st negative should spend about one quarter of their time rebutting.
- present the first half of the negative team's case.

**2nd affirmative must**

- reaffirm the affirmative's team line.
- rebut the main points presented by the 1st negative.
- the 2nd affirmative should spend about one third of their time rebutting.
- present the second half of the affirmative's case.

**2nd negative must**

- reaffirm the negative's team line.
- rebut some of the main points of the affirmative's case.
- the 2nd negative should spend about one third of their time rebutting.
- present the second half of the negative's case.

**3rd affirmative must**

- reaffirm the affirmative's team line.
- rebut all the remaining points of the negative's case.
- the 3rd affirmative should spend about two thirds to three quarters of their time rebutting.
- present a summary of the affirmative's case.
- round off the debate for the affirmative.

**3rd negative must**

- reaffirm the negative's team line.
- rebut all the remaining points of the affirmative's case.
- the 3rd negative should spend about two-thirds to three-quarters of their time rebutting.
- present a summary of the negative's case.
- round off the debate for the negative.

## Vocabulary for debating

Below you will find phrases and language helpful in expressing opinions, offering explanations and disagreeing.

### Opinions, Preferences

I think..., In my opinion..., I'd like to..., I'd rather..., I'd prefer..., The way I see it..., As far as I'm concerned..., If it were up to me..., I suppose..., I suspect that..., I'm pretty sure that..., It is fairly certain that..., I'm convinced that..., I honestly feel that..., I strongly believe that..., Without a doubt...

### Disagreeing

I don't think that..., Don't you think it would be better..., I don't agree..., I'd prefer..., Shouldn't we consider..., But what about..., I'm afraid I don't agree..., Frankly, I doubt if..., Let's face it..., The truth of the matter is..., The problem with your point of view is that...

### Giving Reasons and offering explanations

To start with..., The reason why..., That's why..., For this reason..., That's the reason why..., Many people think..., Considering..., Allowing for the fact that..., When you consider that...

## EXERCISE

### Organise a debate on the following topics

1. Global warming – Fact or Fiction?
2. Cell phones – A boon or bane?

## CHAPTER 35 ITINERARY – PLANNING FOR 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.

### 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:
  - (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

### I. 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.

266 • Technical English

## 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

### ***Trading Activities***

ABC Company is engaged in the 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, Type 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.

## CHAPTER 36 FORMAL LETTER WRITING – LETTERS TO THE EDITOR

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 Leave-taking
6. The Signature
7. The Superscription on the envelope

**The Heading** This informs the reader from *where* you write 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

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.

**270**      Technical English

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

## LETTERS TO THE EDITOR

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 disturbs 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, to allow 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.

## 272 • Technical English

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 overcrowding, 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.

## EXERCISE

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)

## CHAPTER 37 INVITATION LETTERS – ACCEPTING AND DECLINING LETTERS

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.

**EXAMPLE**

1. **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,

P. Krishnan.

276 ✎ Technical English

## ACCEPTING AN INVITATION LETTER

1. Assuming yourself to be the Senior Manager of a local bank, write a formal letter accepting the above invitation.

Erode – 1

23<sup>rd</sup> March, 2001.

From

Ashok Chopra. M,  
Senior Manager,  
Canara Bank,  
Cutchery Road,  
Erode – 638 001.

To

The Secretary,  
Mechanical Engineering Association,  
Erode Sengunthar Engineering College,  
Erode.

Sir,

I would like to thank you for your gracious invitation to be the guest speaker to address the final year students on “How to be self-employed” on 27<sup>th</sup> March, 2001 at your college.

I am very much elated and have much pleasure in accepting your invitation. I will indeed be most happy to attend the seminar and have a talk on the topic suggested by you.

I very much look ahead to being present at the seminar and render my speech.

Thank you once again for honouring me with your invitation.

Thanking you,

Yours sincerely,  
Ashok Chopra. M.  
(Senior Manager)

## DECLINING AN INVITATION LETTER

1. Assume that you are the Senior Manager of a local bank invited to address the final year students. Write a letter declining the same.

Erode – 1

23<sup>rd</sup> March, 2001.

From

Ashok Chopra. M,  
Senior Manager,  
Canara Bank,  
Cutchery Road,  
Erode – 638 001.

To

The Secretary,  
Mechanical Engineering Association,  
Erode Sengunthar Engineering College,  
Erode.

Sir,

I am pleased and honoured by the invitation to address the final year students of your college on “How to be self-employed”. I must commend you on your efforts in arranging such a wonderful seminar.

Although I would love to discuss this subject with your students, I very much regret to say that I will have to decline the offer. I will be attending the Annual General Meeting (AGM) in Chennai on the same day.

Thank you once again for honouring me with your invitation and I do apologize for the conflicting schedule.

Thanking you,

Yours sincerely,  
Ashok Chopra. M.  
(Senior Manager)

## EXERCISE

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)

**278** • Technical English

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. Assuming yourself to be the District Collector, write a letter declining the above invitation to inaugurate the activities of College Students' Association.
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)
7. Assume that you are the Registrar, Anna University. Write a letter accepting the above invitation.

## CHAPTER 38 PERMISSION LETTERS

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.

### EXAMPLE

**Write a letter to the Manager of a company seeking permission to undergo practical training in their esteemed company.**

Erode - 57

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

**280**      Technical English

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).

**EXERCISE**

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)



**SOLVED**  
**UNIVERSITY QUESTION PAPERS**



**B.E./B.TECH. DEGREE EXAMINATION , JANUARY 2008**  
**I - SEMESTER**  
**HS 2111 - TECHNICAL ENGLISH-I**  
**[COMMON TO ALL BRANCHES]**

**ANSWERS**

**PART - A**

1. Make antonyms of the following words by adding suitable prefixes:

(a) rational (b) intelligible (c) toxic (d) pious

**Answer**

(a) *irrational* (b) *unintelligible* (c) *nontoxic* (d) *impious*

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

<b>Column A</b>	<b>Column B</b>
(a) Feasibility	exhaust
(b) Option	productive
(c) Deplete	choice
(d) Constructive	possibility

**Answer**

(a) *possibility* (b) *choice* (c) *exhaust* (d) *productive*

3. Frame sentences using the give phrases:

(a) Switch over (b) gone down

**Answer**

(a) *Switch over - Students studying in the vernacular medium find it difficult to switch over to the English medium.*

(b) *Gone down - The prices of these electronic gadgets have gone down sharply since last August.*

4. Fill in the blanks with suitable prepositions:

Students \_\_\_\_\_ engineering are provided \_\_\_\_\_ opportunities \_\_\_\_\_ get practically trained \_\_\_\_\_ industries / workshops while doing their course.

**Answer**

*of, with, to, in*

284    Technical English

**5. Define the following terms:**

(a) Capacitor (b) Radar

**Answer**

(a) *Capacitor* - The Capacitor is a device used to store an electric charge, consisting of a non-conducting layer called the dielectric, sandwiched between two plates which have opposite charges.

(b) *Radar* - A radar is an electronic instrument that uses radio waves to detect both moving and fixed objects such as spacecrafts, ships, etc, and mountain ranges determine their location attitude and movement.

**6. Fill in the blanks by using correct form of the words that agrees with the subject:**

(a) Every one of the labourers \_\_\_\_ (is/are) given a reward.

(b) Neither of the combatants \_\_\_\_ (was/were) able to break the record.

**Answer**

(a) is      (b) was

**7. Fill in the blanks with appropriate form of the verbs:**

Once upon a time, a little orphan boy \_\_\_\_\_ (live) with his relatives who \_\_\_\_\_ (treat) him harshly. \_\_\_\_\_ (Fright) that he \_\_\_\_\_ (punish) severely he \_\_\_\_\_ (escape).

**Answer**

*lived, treated, Frightened, would be punished, escaped.*

**8. (a) Transfer the following simple sentence into a compound sentence:**

The teacher appreciated the student for her brilliance.

**(b) Change the following compound sentence into a complex sentence:**

The students have a test and so they are studying.

**Answer**

(a) *The teacher appreciated the student, on account of her brilliance.*

(b) *As the students have a test, they are studying for it.*

**9. Fill in the blanks with suitable articles:**

Just imagine \_\_\_\_\_ biology teacher explaining \_\_\_\_\_ respiratory system or just \_\_\_\_\_ body part like \_\_\_\_\_ larynx, to the class.

**Answer**

*a, the, a, the*

**10. Give the American English equivalents of the following British English words:**

- (a) lift      (b) aerial.

**Answer**

- (a) *elevator*      (b) *antenna*

**11. Give the American spelling for the following words:**

- (a) analyse      (b) calibre

**Answer**

- (a) *analyze*      (b) *caliber*

**12. Change the following into impersonal passive statements:**

- (a) They treat water chemically.  
(b) You cannot change the past.

**Answer**

- (a) *Water is treated chemically by them.*  
(b) *The past cannot be changed by anyone.*

**13. Complete the following sentences suitably:**

- (a) If atmospheric pollution becomes worse, \_\_\_\_\_  
(b) If you had approached him, \_\_\_\_\_

**Answer**

- (a) *If atmospheric pollution becomes worse, people are bound to get diseases frequently.*  
(b) *If you had approached him, he would have helped you.*

**14. Fill in the blanks with comparative forms of the Adjectives given in brackets:**

- (a) The weather this year is \_\_\_\_\_ (bad) than last year.  
(b) This movie is \_\_\_\_\_ (dreadful) than the previous one.

**Answer**

- (a) *worse*      (b) *more dreadful*

**15. Rewrite as directed:**

- (a) Listening skill is as important as speaking. (into Comparative Degree)  
(b) No other acid is as powerful as aqua regia. (into Superlative Degree)

**Answer**

- (a) *Listening skill is more important than speaking.*  
(b) *Aqua regia is the most powerful acid.*

286    Technical English

**16. Expand the following compound nouns:**

- (a) concrete structure    (b) friction losses

**Answer**

- (a) *structure made of concrete*                      (b) *losses due to friction*

**17. Analyse the sentence pattern in the following sentences:**

- (a) I met him in Madras last week.  
 (b) They made him the Chief Secretary.

**Answer**

- (a) *S V O A*    (b) *S V O C*

**18. Frame sentences for the following patterns:**

- (a) S + V + C  
 (b) S + V + IO + DO

**Answer**

- (a) *The boy seems brilliant*                      (b) *Raju teaches them Mathematics*

**19. Edit the following passage:**

The English language came to England with the germanic tribes who overran England in the fifth century old english borrowed many words forms Scandinavian language.

**Answer**

*The English language came to England with the Germanic tribes, who overran England in the fifth century. Old English borrowed many words from the Scandinavian language.*

**20. Describe the process of preparing lime tea.**

**Answer**

*Boil water in a kettle. Add tea leaves to the boiling water. After a few minutes, filter it and serve with a piece of lime and sugar. Lime tea is thus prepared.*

**PART B****Answer any Five Questions****21. Read the passage given below and answer the questions that follow:**

Ozone, a molecule made up of three atoms of oxygen, comprises a layer of the atmosphere that absorbs harmful ultraviolet radiation from the sun. Chlorine atoms, mainly from man-made chlorofluorocarbons or CFCs, break apart ozone molecules.

Chlorine compounds used in human activities such as electronic manufacturing and refrigeration are a primary cause of the ozone hole. A large area of intense ozone depletion occurs annually over Antarctica during late August through early October. The hole typically breaks up as ozone levels increase in late November.

The atmospheric Ozone over Antarctica declined to record low levels this year due to the combination of an unusually cold winter and the continued presence of man-made chlorine chemicals reported by US scientists. The surface area covered by the so-called, 'ozone hole' in 1993 over 23 million square kilometers or about twice the size of the Antarctica land mass, was nearly as large as the record 1992 ozone hole.

INSTRUMENT, a Russian satellite orbiting the earth, measured the concentration of ozone over a region near the South Pole, at less than 100 dobson units. This measurement made at the centre of the ozone was confirmed by balloon and ground based instruments.

A Dobson unit is a measure for the physical thickness of the ozone layer. The balloon borne measurements also indicated that the Antarctica ozone layer was totally destroyed between the altitudes of 13.5 and 19 kilometers, creating an ozone void of 5.5 kilometre thickness.

Deep ozone holes will continue to form annually into the next century. Herman, an American scientist, said, "this situation will persist until the stratospheric chlorine levels decrease".

The ozone layer is expected to heal itself and become thicker as a result of CFC cutbacks, mandated by an international treaty called the Montreal Protocol.

**(a) State whether the following statements are True or False:**

- (i) Ozone is helpful in the process of absorbing certain radiation creating bad effect.
- (ii) Ozone depletion never takes place in the universe.
- (iii) The 1993 ozone hole is considered to be the largest as per the world record.
- (iv) Dobson units are used for measuring the effects of danger of ozone.

## 288 • Technical English

**(b) Read the passage carefully and then choose the responses which best reflect the meaning of the text:**

(i) Ozone layer is found

- (1) Near the north pole
- (2) Near the south pole
- (3) As a sheet of the atmosphere
- (4) At both south pole and north pole

(ii) The ozone molecules break apart due to

- (1) The ultra violet radiation
- (2) The heat of the sun
- (3) The planetary movements
- (4) The chemicals made by man

(iii) Ozone depletion occurs annually

- (1) in many places places in the world
- (2) in the coastal areas
- (3) only in certain places
- (4) near forest areas

(iv) As per the latest record pertaining to the ozone layer this year

- (1) the level are high
- (2) the level are low
- (3) the levels have functions
- (4) the levels are intermediary

**(c) Choose the meaning which best fits the following words that are used in the text.**

(i) radiation

- (1) gathering
- (2) spreading out
- (3) accumulation
- (4) penetrating

(ii) depletion

- (1) production
- (2) removal
- (3) motorization
- (4) reduction



(iii) decline

(1) becoming weaker      (3) becoming stronger

(2) becoming thicker      (4) becoming rough

(iv) altitude

(1) length      (3) height

(2) breadth      (4) circumference

**Answer**

(a) State whether the following statements are true or false.

(i) True      (ii) False      (iii) False      (iv) False

(b)

(i) (3) as a sheet of atmosphere      (ii) (4) the chemicals made by man

(iii) (3) only in certain places      (iv) (2) the level are low

(c)

(i) (4) penetrating      (ii) (4) reduction

(iii) (1) becoming weaker      (iv) (3) height

290 • Technical English

22. Write a letter to the Editor of a newspaper expressing your concern about the increase in the number of road accidents.

Answer

63, C.V. Road

Chennai - 87

23rd August, 2008

To

*The Editor,*

*The Hindu,*

*Chennai - 600 002*

Sir,

*In view of the increasing road traffic, and hence the frequent road accidents thereof, I wish to place some suggestions, which could be published in the "Letters to the Editor" column.*

*The increase in population in the city and its suburbs has multiplied the traffic on roads, worsening the situation even of the walking populace. The thriving two-wheelers, sometimes even seen on the pavements, make life tedious for pedestrians and account for innumerable accidents across the city. They ply through every nook and corner, making it difficult for bus drivers. The four-wheelers, on the other hand, overtake barring the median, in order to save time, creating panic all over.*

*A well-placed or well-constructed median, like the one seen on highways, could lessen the occurrence of accidents. Maybe it is difficult to accommodate them in such small roads, but it is still worth a try. Traffic constables could be posted at every busy road, to avoid commotion. Streamlining of traffic at busy hours could avoid several accidents.*

*Safety rules should be taught to all students and they should be made aware of the current scenario of traffic on roads. Those who do not follow safety rules, both the young and the old, should be penalised, which could awaken the traffic sense in public minds. Like in foreign countries, any faltering of traffic rules should be heavily fined. This could resort to the public following the traffic rules, to be on guard.*

*Safety on roads is safety of lives, and a public sense of traffic rules should be created.*

*Yours truly,*

*R.Velu*

**23. Rearrange the following jumbled sentences in the correct order:**

- (a) A quick reading will give a basic idea of the passage.
- (b) If the correct answer is not immediately apparent, check if the options fit in with the meaning and the structure of both the sentence and the passage.
- (c) Finally use discretion and judgement to choose the correct option from the remaining choices.
- (d) Answering cloze tests requires analytical skills.
- (e) The second reading should be accompanied with a reading of the options given after the passage.
- (f) And then eliminate choices that do not clearly fit in the sentences.

**Answer**

1 - d    2 - a    3 - e    4 - b    5 - f    6 - c

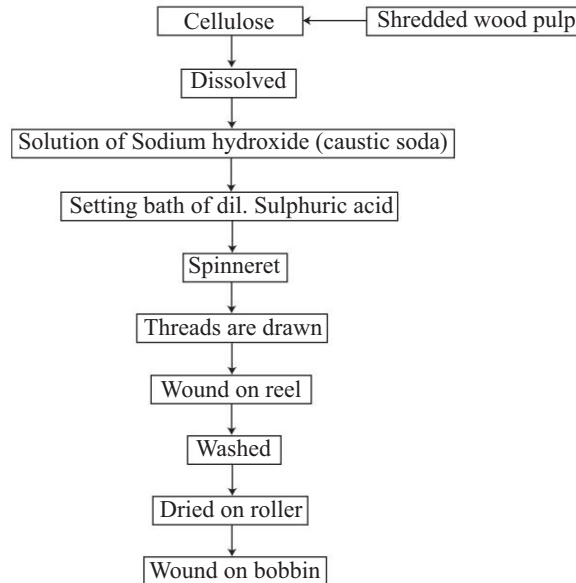
**24. Write a paragraph of 200 words describing the uses of the internet.****Answer*****Internet and its Uses***

*The Internet has become an essential tool in the hands of every modern man. It brings, on hand, any information, from across the world. The Internet has brought people closer despite the geographical distance that separates them. Information on any subject, irrespective of its relevance today, has made the Internet a great boon for mankind. People muster information on any topic from the Internet, which signifies its widespread appeal.*

*The Internet is an information system that is networked globally through computers. A network links several computers, so that information is shared across the world. The Internet has thus become an affordable and effective means of communication. We use it regularly for information, banking transactions, booking tickets, shopping, matrimony and to apply to colleges in India and abroad.*

*Governments of many countries use the Internet for military and defence purposes. Companies, too, use the Internet for transactions, to buy and sell products and advertising. The Internet has thus become the lifeline of a multitude of people across the world.*

## 25. Transcode the following flow chart into a passage of 150 words:

**Answer**

*Cellulose is obtained from shredded wood pulp. Cellulose is dissolved in a solution of sodium hydroxide or caustic soda, from which rayon is obtained. The dissolved cellulose is formed into threads by forcing it through a spinneret (a perforated device for extruding filaments of synthetic fibre), in a setting bath of sulphuric acid. The threads are drawn from the setting bath, wound on reel, washed and then dried on a heated roller, and finally wound onto a bobbin.*

## 26. Read the following passage and makes notes on it:

Most robots of today consist of little more than a mechanical arm and a computer memory. The memory allows the arm to repeat a simple motion like moving a part from one work-bench to another. Because its memory can store a collection of such motion, the robot can switch quickly from one simple task to another. It will not complain of boredom, balk at job demarcation lines, take a tea-break or go sick. This faithful servant is also a stupid one. It has no problem-solving 'intelligence' or 'senses' that would alert it, if the part that was meant to pick was upside down — or not there at all. A robot is less capable than a man groping in the dark. At least a man can tell by touch, if he merely bumped into something.

Although robots are gradually improving, today's growth in robotics is largely because industry has learnt how to accommodate these mindless, mechanical workers. The automobile industry, which employs some 60 percent of the world's 20,000 robots, has been leading the way to improving its applications.

This is no surprise, as assembly-line production is repeated with simple, repetitive jobs that robots can do so well. Robots are beings put to work in loading and unloading conveyors, welding car bodies together and spray-painting the finished product. Parts of a car have long been carried to human workers on conveyor belts. It takes only a bit of careful engineering to position each time. Having accommodated to their senselessness, robots can boost productivity, with their untiring speed, and boost quality with their mindless ability to do the same job, in exactly the same way every time.

Even smaller manufactures are finding places for robots in their factories. Some are simply using robots to perform tasks like loading and unloading moulds and presses, which are similar to the jobs, robots do in assembly lines.

### **Answer**

1. *Robot*
  - 1.1 *Mechanical arm*
  - 1.2 *Computer memory*
    - 1.2.1 *Repeat a simple motion*
    - 1.2.2 *Store a collection of motions*
2. *Robots donot*
  - 2.1 *Complain boredom*
  - 2.2 *Go sick*
3. *Faithful servant yet stupid*
4. *Use of Robots*
  - 4.1 *Industries*
    - 4.1.1 *Automobile*
  - 4.2 *Factories*
    - 4.2.1 *Loading and unloading moulds and presses*

**27. Write a letter to the Manager, ASEAN Solutions, Ahmedabad, seeking permission to undergo in-plant training for a week. Assume suitable names and addresses. State your reasons for choosing their company.**

**Answer**

Chennai  
5th May 2008

From

*R. Velu, (III B.E.),  
Sri Venkateshwara College of Engineering,  
Sriperumbudur,  
Chennai.*

To

*The Manager,  
ASEAN Solutions,  
Ahmedabad.*

Sir;

*Sub: Permission to undergo in-plant training.*

*As a student of engineering, I am expected to undergo training in a reputed organization for a minimum of three weeks. I pursue III Yr. engineering in S.V.C.E., and I request you to give me permission for in-plant training.*

*It would be grateful to you if you could grant me permission, as you are a leading company. As I am eager to learn about new technologies and latest trends in electronic gadgets, it would be helpful for me, in my career ahead. I deem it a great privilege to seek your permission in learning about Electronic related items.*

*I assure you, that I will follow the rules and regulations of your esteemed company.*

*Thanking you,*

*Yours faithfully,*

*R. Velu.*

**28. Describe in two paragraphs the advantages and disadvantages of nuclear power as an alternative source of energy. (200 words)**

**Answer**

*Advantages and disadvantages of nuclear power.*

*Nuclear power offers a range of advantages to meet the growing energy demand in a world where oil and natural gas are fast-depleting and increasingly unaffordable. Despite high construction costs, the expenditure in running nuclear power plants is relatively low. These plants release negligible amounts of greenhouse gases and occupy relatively small areas. Moreover, generating nuclear power through the fusion process is far more efficient when compared to coal-based electricity production.*

*A major drawback of nuclear power is the risk of accidents at the plant, and the possibility of radiation leakage or plant meltdown, resulting in severe consequences to people and environment. Despite modern technology and extensive backup systems, power stations are all run manually and human error could lead to possible accidents. Security concerns have also been raised—the threat of terrorist attacks and misuse of stolen fuel rods to make a ‘dirty bomb’ cannot be ignored. The matter of safe disposal of radioactive waste still requires a lot of investigation and research. In the wake of the recent disaster at Japan’s Fukushima nuclear plant (2011), there has been a lot of debate over the safety of nuclear power and its growing acceptance has been sharply eroded.*

**B.E./B.TECH. DEGREE EXAMINATION , JANUARY 2009**  
**I - SEMESTER**  
**HS 2111 - TECHNICAL ENGLISH-I**  
**[COMMON TO ALL BRANCHES]**

**ANSWERS**

**PART - A**

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

A	B
(a) Permeability	(i) not belonging to the earth
(b) Core	(ii) abnormal accumulation of people, traffic
(c) Extraterrestrial	(iii) passing through
(d) Congestion	(iv) the innermost part

**Answer**

- a) *passing through*                      b) *the innermost part*  
c) *not belonging to the earth*      d) *abnormal accumulation of people, traffic*

2. Change the following into active voice:

- (a) Alternative sources of energy have to be used by us to tide over the energy crisis.  
(b) The price of essential commodities must be brought down by the authorities.

**Answer**

- (a) *We have to use alternative sources of energy to tide over the energy crisis.*  
(or)  
*To tide over the energy crisis, we have to use alternative sources of energy.*  
(b) *The authorities must bring down the price of essential commodities.*

3. Using suitable prefixes like 'micro-' and 'under-' get the correct word:

- (a) A living creature which is too small to be seen is \_\_\_\_\_.  
(b) A building with too many floors is \_\_\_\_\_.  
(c) A person who does not have enough nourishment is \_\_\_\_\_.  
(d) A person who does not have enough work is \_\_\_\_\_.

**Answer**

- a) *microscopic*      c) *undernourished*      b) *multi-storied*      d) *underemployed*



**4. Define TWO of the following in a single sentence each:**

- (a) Solar cell                      (b) Mobile phone                      (c) lunar eclipse

**Answer**

- (a) *Solar cell:* A solar cell is an electrical device that converts light energy directly into electricity by the photovoltaic effect.
- (b) *Mobile phone:* A mobile phone is a wireless hand-held electronic device that is used to make phone calls, with service provided to it over a large geographical area.
- (c) *Lunar eclipse:* A lunar eclipse occurs when the earth comes between the sun and the moon, such that it obstructs the sun's rays from striking the moon.

**5. Fill in the blanks with suitable prepositions:**

A snowflake originates \_\_\_\_\_ countless water molecules that initially come together \_\_\_\_\_ small groups as a result \_\_\_\_\_ a weak force \_\_\_\_\_ oxygen and hydrogen atoms.

**Answer**

*from, in, of, between*

**6. Expand the following compound nouns:**

- (a) Software engineer                      (c) Computer education  
(b) Pocket calculator                      (d) Flight information

**Answer**

- (a) *An engineer who specializes in software.*
- (b) *A calculator which can be carried in the pocket.*
- (c) *Education in the field of computers.*
- (d) *Information about flight departure and arrival.*

**7. Fill in the blanks with the appropriate forms of words:**

	Verb	Noun	Adjective
(a)	Consider	Consideration	_____
(b)	_____	Protection	Protective
(c)	Describe	Description	_____
(d)	Imagine	Imagination	_____

**Answer**

- a) Considerable/Considerate    b) Protect    c) Descriptive    d) Imaginative*

298 • Technical English

8. Use Two of the following phrases in separate sentences of your own:

- (a) generated by      (b) derived from      (c) get rid of.

Answer

- (a) **generated by** – *The thermal power generated by Neyveli Lignite Corporation is distributed to the entire state of Tamil Nadu.*
- (b) **derived form** – *The English language has been derived from Indo-Germanic languages.*
- (c) **get rid of** – *Please get rid of those old smelly socks and buy a new pair!*

9. Complete the following:

- (a) If the economic downtrend continues, \_\_\_\_\_.
- (b) \_\_\_\_\_, global warming would have been reduced.

Answer

- (a) *If the economic downtrend continues, unemployment will increase.*
- (b) *Had appropriate measures been taken by the government, global warming would have been reduced.*

10. Fill in the blanks with suitable tense form of the verbs given in brackets.

Weather is created by the heat of the sun. When the sun \_\_\_\_\_ (shine) on the earth, the air close to the surface \_\_\_\_\_ (heat up). The higher it \_\_\_\_\_ (go), the cooler it \_\_\_\_\_ (become).

Answer

*shines, heats up, goes, becomes*

## PART - B

11 (a) Read the following passage carefully and answer the questions given at the end of it:

The study of control processes in electronic, mechanical, and biological systems is known as cybernetics. The word was coined in 1948 by the American mathematician Norbert Wiener from the Greek word meaning pilot or steersman. Cybernetics is concerned with the analysis of the flow of information in both living organisms and machines, but it is particularly concerned with systems that are capable of regulating their own operations without human control.

Automatic regulation is accomplished by using information about the state of the end product that is fed back to the regulating device, causing it to modify or correct production procedures if necessary. The concept of feedback is at the very heart of cybernetics and is

what makes a system automatic and self-regulating. A simple example of self-regulating machine is a thermostat, which reacts to continual feedback about the outside temperature and responds accordingly to achieve the temperature that has been programmed into it.

The applications of cybernetics are wide reaching, appearing in science, engineering, technology, sociology, economics, education and medicine. Computers can keep a patient alive during a surgical operation making instantaneous modifications based on a constant flow of information. In education, teaching machines use cybernetic principles to instruct students on an individual basis. In the home, automation is present in such everyday products as refrigerators, coffee makers and dishwashers. In industry, automation is increasing its applications, although it is currently applied primarily to the large-scale production of single units. In industries in which a break in the flow of production can ruin the product, automatic controls are invaluable. Chemical and petroleum plants are now almost completely automatic, as are industries involved in the production of chemicals and atomic energy. Automation has become the answer when human safety is the number one priority.

**(a) Choose the correct answer:**

- (i) Cybernetics is the study of control processes in all of the systems except
  - (1) ecological      (2) biological      (3) mechanical      (4) electronic.
- (ii) The word cybernetics was coined from the Greek word meaning
  - (1) information      (2) automatic      (3) pilot      (4) regulator
- (iii) Automatic regulation is accomplished by
  - (1) modifying and correcting production procedures
  - (2) feeding information to the regulatory device
  - (3) analyzing the flow of information to the organism
  - (4) modifying cybernetic principles.
- (iv) Cybernetics is primarily concerned with system that
  - (1) are controlled by humans
  - (2) analyze flaws of information
  - (3) are self-regulating
  - (4) have wide reaching applications.
- (v) What makes a system automatic and self-regulating?
  - (1) Information      (2) Production procedure      (3) Human control      (4) Feedback
- (vi) Which of the following is NOT mentioned as an area in which cybernetics has applications?
  - (1) Technology      (2) Engineering      (3) Philosophy      (4) Education.

## 300 • Technical English

**(b) Mention whether the following statements are True or False:**

- (i) Cybernetics is the study of all systems.
- (ii) Free flow of information is the key to self-regulation.
- (iii) Teaching machines can replace teachers.
- (iv) Automation is useful to housewives also.
- (v) Human safety in industries cannot be ensured without automation.
- (vi) Automation in industries is primarily used in producing small amounts of many different products.

**(c) Choose the appropriate definition for the given words or phrases as they are used in the text:**

(i) continual

- (1) with pause      (2) without pause      (3) new again      (4) renewal

(ii) reaching

- (1) arriving      (2) striking out      (3) stretching out      (4) making

(iii) instantaneous

- (1) simultaneous      (2) delayed      (3) immediate      (4) mediate

(iv) ruin

- (1) destroy      (2) disable      (3) disadvantage      (4) decipher

**Answer**11 (a) (i) *ecological*(ii) *pilot*(iii) *modifying and correcting production procedures*(iv) *are self-regulating*(v) *Feedback*(vi) *Philosophy*11 (b) i) *False* ii) *False* iii) *False* iv) *True* v) *True* vi) *False*11 (c) i) *with pause* ii) *stretching out* iii) *immediate* iv) *destroy*

**12 (a) Write a set of eight instructions that could be followed by students in the college library.**

**Answer**

***Instructions to be followed by students in the library***

- i. Do not take any books inside the library other than the library books.
- ii. Maintain silence in the library.
- iii. Fill in the register while entering and leaving the library.
- iv. Do not tamper with the books in the library.
- v. Do not drag the chairs or tables in the library.
- vi. Look into the catalogue or database for the exact reference.
- vii. Do not carry food or drinks into the library.
- viii. Keep some plain paper, to take references, if necessary.
- ix. Borrow books only in your own card.

**12 (b) Write a set of eight instructions that could be followed by students in the examinations hall.**

**Answer**

***Instructions to be followed by students in the exam hall***

- i. Students should maintain silence in the exam hall.
- ii. Students should bring their own necessary stationery with them, and they should not borrow from others inside the exam hall.
- iii. Students must bring to each exam their hall tickets without fail.
- iv. The register number should be written at the proper place provided for it.
- v. Name of the candidate and any religious symbol should not be written.
- vi. Students should not have any piece of paper, which could create doubt in the minds of the invigilator.
- vii. Students should not carry calculators (unless specifically authorized for that exam), or mobile phones into the exam hall.
- viii. Students should tag their answer sheets properly.
- ix. Write clearly; illegible answers will not be marked.
- x. Answer in English and write with blue/black pen, unless the question paper gives other instructions.

302 • Technical English

**13 (a) Describe the uses of iron in two paragraphs, each in about 100 words.**

**Answer**

### *Uses of Iron*

*Iron is the most commonly used metal, accounting for 95 percent of the worldwide metal production. The most important use of iron is the manufacture of steel, an alloy of iron. There are various types of steel, depending on the alloying elements used. These alloys have unique properties of hardness, ductility and tensile strength, which play an important role in a host of construction and manufacturing industries. Alloyed steel is used for the framework of buildings and bridges, in the bodies of heavy carriers like ships and frames of heavy machinery. A variety of automobile and machine parts are also made of steel. Cutting and drilling tools are manufactured from tungsten steel, and nuclear reactors are constructed using an alloy of iron and niobium.*

*Even as pig iron is used to produce alloys like steel, wrought iron finds its place outdoors in decorative iron fencing and furniture, and cast iron in kitchens. Metallic iron is used for making permanent magnets and electromagnets. Iron salts are invaluable –Iron chloride is a coloring agent, used in making dyes, paints and pigments. Water purification systems use iron hydroxide. Iron sulphate is used to treat anemia. The human body also requires iron to execute various metabolic processes. It is a component of hemoglobin in red blood cells and is also needed for the production of ATP molecules.*

**13 (b) Describe a communication tower, preferably that of the cell phone, in two paragraphs, each in about 100 Words.**

**Answer**

### *Communication Tower*

*Communication towers are used for relaying signals received from cell phones. Communication towers have antennas on top of them and they cover a small area. They are made of steel and usually triangular or square in cross-section. Communication towers have become very common with increase in cell phone usage.*

*Communication towers are tall structures usually having a large base at the ground and tapering at the top. The reason for the communication towers being so tall is to receive signals from what are called cells that are hexagonal in shape. To be a little more descriptive, the entire area of cell phone coverage is divided into hexagonal cells and each cell will have this communication tower.*

*Communication towers are classified based on their structure and cross-section. Some categories of communication towers include self-supporting towers, guyed towers, and monopole.*

14 (a) Write a letter to the editor of a newspaper in your region about the ragging menace in educational institutions and suggest ways to prevent them.

Answer

Chennai

7th June, 2009

To,

The Editor,

The Times of India,

Chennai.

Sir,

*Sub: Ragging menace in educational institutions.*

*Ragging has become the keyword in several institutions, despite the government's and the authority's intervention to curb it. I wish to place a request on behalf of the student community, who are unable to thwart the pressures of ragging. I request you to place this short note of animosity in your esteemed daily.*

*The new entrants inside the college campus become vexed as a result of ragging by the seniors. The freshers are by far the most affected, unable either to complain or to resist it. Instead of the college being a bed of roses, it becomes a dreary land of drudgery, only because of ragging. The seniors in the college should be given a word of caution by the authorities, so that they may not indulge in ragging the juniors. The seniors, who indulge in ragging, should be punished severely, which would serve as a lesson to all others. The juniors are crippled with nostalgia at the very thought of ragging. They are caught between the authorities and their parents, that is, they are unable to represent their case to the authorities and also unable to explain to their parents. The juniors become muffed, and are unable to concentrate on their studies.*

*Considering the future generations, I wish to draw the attention of the college authorities to put an end to ragging, which could bring solace to the freshers and their parents.*

Thanking you,

Yours faithfully,

R.Suraj.

**14 (b) Write a letter to the District Collector in your area requesting him to inaugurate the NSS Camp in a village adopted by your College for the purpose of rural development.**

**Answer**

*Chennai  
5th May, 2009*

*From*

*R. Velu,  
NSS Unit Members Leader,  
Krishna Engineering College,  
Chennai.*

*To*

*The District Collector,  
Kancheepuram.*

*Sir;*

*Sub: Request for the inauguration of NSS camp in Enathur village.*

*The NSS unit of our college has decided to conduct a week's camp at Enathur near Kancheepuram. We would be very pleased, if you could kindly come and inaugurate the camp on 25th May 2009. It would be a boost to all our students, to enable us to do our activities with gusto. The activities would include health check-up, adult education, awareness on AIDS, child health-care, cleanliness and the upliftment of women in rural areas. Your presence would motivate us into doing a better service for the rural people.*

*Our NSS student community and our college authorities would be pleased if you would agree to inaugurate the activities of our camp.*

*Eagerly awaiting your consent and looking forward to meeting you.*

*Thanking you,*

*Yours faithfully,*

*R. Velu.*



**15 (a)** Given below are two passages in jumbled order. Rearrange ONE of them into a coherent paragraph.

- i. On the slopes great swaths of trees were blown away from the mountain and tossed in heaps.
- ii. However, beneath tranquil sylvan paradise, molten magma was slowly rising to the surface of the earth, eventually forming a mushroom-shaped lava dome that exploded with the force of 10 million tons of TNT at 8.30 a.m., throwing nature into upheaval.
- iii. Fires burned everywhere.
- iv. A century of volcanic inactivity has made Washingtonians complacent.
- v. In the aftermath, what had been pristine beauty only hours before lay in total devastation.
- vi. Billowing hot molten rock avalanches swept down the flanks of the mountain, mowing down everything in their paths.
- vii. A hot plume of ash and debris rose 65,000 feet into the sky, turning day into night.
- viii. Spirit Lake boiled, and rivers turned black.

**Answer**

*1 - iv    2 - ii    3 - vii    4 - vi    5 - i    6 - viii    7 - iii    8 - v*

**15 (b)**

- i. When completely satisfied with its new mobile home, the hermit crab will emerge one last time, turn the shell over and make a final entrance.
- ii. Once the shell's opening has been located, the crab uses its claws to remove a foreign material before preparing to enter.
- iii. The hermit crab may encounter empty shells in the course of their daily activity, but the vacant shell is usually spotted by sight.
- iv. It rises above the opening, flexes its abdomen, and enters the shell backward.
- v. Its visual response increases with the size of an object and its contrast against the background.
- vi. If the size is right, the crab investigates its shape and texture by rolling it over between its walking legs and running its claws over the surface.
- vii. The shell interior is monitored by the abdomen, and enters the shell backward.
- viii. It then sizes the shell with its walking legs and climbs on it, monitoring its size.

**Answer**

*1 - iii    2 - v    3 - ii    4 - iv    5 - vi    6 - viii    7 - vii    8 - i*

**B.E./B.TECH. DEGREE EXAMINATION , MAY / JUNE 2009  
I - SEMESTER  
HS 2111 - TECHNICAL ENGLISH-I  
[COMMON TO ALL BRANCHES]**

**ANSWERS**

**PART - A**

1. Match the words in column A with thier meanings in column B.

A	B
a) Repository	starting point
b) Jeopardy	confined within narrow limits
c) Fission	place where things are stored
d) Cramped	division of the atom
	danger

**Answer**

- (a) *place where things are stored*      (b) *danger*  
 (c) *division of the atom*                (d) *confined within narrow limits*

2. Punctuate the followings:

An essay is a piece of writing several paragraphs long written on one topic. The aim of the essay should be deduced strictly from the working of the title or question and needs to be defined.

**Answer**

*An essay is a piece of writing several paragraphs long, written on one topic. The aim of the essay should be deduced strictly from the wording of the title or question, and needs to be defined.*

3. Complete the following table with appropriate forms of the words given.

Noun	Verb	Adjective
_____	Prescribe	_____
Globalization	_____	_____
_____	Repeat	_____
_____	_____	Economical

**Answer**

<i>Noun</i>	<i>Verb</i>	<i>Adjective</i>
<u>Prescription</u>	<u>Prescribe</u>	<u>Prescribed / Prescriptive</u>
<u>Globalization</u>	<u>Globalize</u>	<u>Globalized / Global</u>
<u>Repetition</u>	<u>Repeat</u>	<u>Repetitive / Repeated</u>
<u>Economy</u>	<u>Economize</u>	<u>Economical</u>

**4. Complete the following ‘ IF ’ conditionals with suitable effects.**

- (a) If the roads of the city are widened, \_\_\_\_\_
- (b) If I had not worn a helmet that day, \_\_\_\_\_
- (c) If he were kinder, \_\_\_\_\_
- (d) If I has a million dollars, \_\_\_\_\_

**Answer**

- (a) *If the roads of the city are widened, the peak hour congestion of the traffic-clogged loads can be overcome.*
- (b) *If I had not worn a helmet that day, I would have received a severe head injury due to the accident.*
- (c) *If he were kinder, people would like him much more.*
- (d) *If I had a million dollars, I would probably be the most irresponsible person in the world.*

**5. Give the expansion of the following compound nouns.**

- (a) Mobile banking                      (c) Business administration
- (b) Data transfer                        (d) Communication system.

**Answer**

- (a) *Mobile banking: Banking transactions done through mobile phone.*
- (b) *Data transfer: The person of transferring data*
- (c) *Business administration: Administration of business.*
- (d) *Communication system: System that is used for communication.*

**6. Rewrite the following sentences in the passive voice.**

- (a) The library will acquire a new stock of books this month.
- (b) Someone broke into the house last night and stole jewels worth Rs. One lakh.

308 • Technical English

**Answer**

- (a) *A new stock of books will be acquired by the library this month.*
- (b) *Last night jewels worth Rs. One lakh were stolen by someone who broke into the house.*

**7. Edit the following passage.**

Making paper involve reducing a plant to its fibres, and then aligned them and coating a fibres with materials such of glues, pigments and mineral fillers the first steps on the process is obtaining the raw material.

**Answer**

*Making paper involves reducing a plant into its fibres, and then aligning them and coating the fibres with materials such as glues, pigments and universal fillers. The first step of the process is obtaining the raw material.*

**8. Fill in the blanks in the given sentences with the comparative forms of the adjectives given in brackets.**

- (a) Oil is \_\_\_\_\_ (light) than water. That is why oil floats on water.
- (b) The University campus was \_\_\_\_\_ (far) away from the station than I was given to believe.
- (c) The Afternoon session of the workshop was definitely \_\_\_\_\_ (interesting) than the morning session.
- (d) The weapons used in the Second World War were \_\_\_\_\_ (destructive) than those used ever before in history.

**Answer**

- (a) lighter      (c) more interesting      (b) farther      (d) more destructive

**9. Write one sentence definitions of the following:**

- (a) Bluetooth, (b) Abacus.

**Answer**

- (a) *Bluetooth - Bluetooth is a wireless technology that helps to exchange data over short distances, for instance, between mobile phones and computers.*
- (b) *Abacus - Abacus is an age old calculating tool, that helps in doing mathematical operations.*

**10. Fill in the blanks in the given sentences with the correct form of the verb, choosing the right option from the choices given in brackets.**

- (a) A Commission \_\_\_\_\_ (was /has been ) appointed to investigate the massacre of the innocent villagers two days after the incident.
- (b) This year the University \_\_\_\_\_ ( introduced / has introduced) the new online system of examination.
- (c) The machine \_\_\_\_\_ ( was / has been) purchased in 1973 and \_\_\_\_\_ ( is / has been) functioning for the past 35 years with the same efficiency.

**Answer**

(a) was                      (b) has introduced                      (c) was, has been

**PART - B**

**11. (a) Read the following passage and answer the questions that follow 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 schoolboy 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 bandages 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 Urals.

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 onto 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 hand found that, securely blindfolded with only her hands 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 her palm or on to a screen. In rigidly controlled tests, with a blindfold and a screen and a piece of card around her neck so wide that she could not see round it, Rosa read

**310** • Technical English

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) Complete the following statements choosing from one of the given alternatives.**

(i) The first white men to visit Samoa found men who

- (1) were not entirely blind
- (2) described things by touching them
- (3) could see with their hands
- (4) could see when they held hands

(ii) What is the main idea of the first paragraph?

- (1) Very few people have the sensitivity of the blind
- (2) Blind people can manage to see things, but only vaguely
- (3) The eyes are not the only way of seeing
- (4) If it is possible to localize photosensitive areas of the body

(iii) Why did Shaefer put the paper under glass?

- (1) To make things as difficult as possible
- (2) To stop the reflection of heat
- (3) To prevent Rosa from feeling the print
- (4) To stop her from cheating

(iv) What was the most difficult test of her ability?

- (1) To read through glass, blindfolded
- (2) To identify the colour and shape of light on a screen while securely blindfolded
- (3) To carry out tasks with someone pressing on her eyeballs
- (4) To work from behind a screen, blindfolded and with a card round her neck.

**Answer**

- i) - (3) could see with thin hands*
- ii) - (3) The eyes are not the only way of seeing*
- iii) - (3) To prevent Rosa from feeling the print*
- iv) - (3) To carry out tasks with someone pressing on her eyeballs*

**11 (b) State whether the following statements are true or false.**

- (i) The men in Samoa were not quite blind.
- (ii) Jules Romain found a lot of blind people who could see with their noses and ears.
- (iii) The Italian girl enjoyed it when the light was shone on her ear.
- (iv) A girl called Virginia could read newsprint even when she was blindfolded.
- (v) Rosa Kuleshova lives on a mountain peak.
- (vi) Her family taught her everything about seeing with her fingers.
- (vii) Shaefer found that temperature did not affect her ability to differentiate between colours.
- (viii) Her ability to read with her fingers did not depend on the feel of the print.

**Answer**

- (i) True                      (iii) False                      (v) False                      (vii) True  
(ii) False                      (iv) False                      (vi) False                      (viii) True

**11(c) Choose the option that best represents the meaning of the word as used in the passage.**

## (i) distinguish

- (1) differentiate                      (3) revere  
(2) discriminate                      (4) standout

## (ii) celebrity

- (1) rejoice                      (3) commemorate  
(2) famous person                      (4) criminal

## (iii) convincing

- (1) accepting                      (3) persuasive  
(2) disagreeing                      (4) aggressive

## (iv) phenomenon

- (1) occurrence                      (3) theory  
(2) surprise                      (4) practice

**Answer**

- i) - (1) differentiate                      iii) - (1) persuasive  
ii) - (2) famous person                      iv) - (1) occurrence

## 312 • Technical English

**12. Rewrite the jumbled sentences in sequential order so that they follow one another in a logical and coherent manner. Choose either set (a) or set (b).**

- (a) (i) Between 1482 and 1499, he was employed in the service of the Duke of Milan.  
 (ii) His artistic bent obviously appeared at an early age for when he was 15 he was apprenticed to the painter Verocchio.  
 (iii) Leonardo returned to Florence in 1499, where he painted that most famous painting “The Mona Lisa”.  
 (iv) In 1472 he was accepted in the Painters’ Guild in Florence where he remained until 1481.  
 (v) Leonardo da Vinci was born in 1452 in Vinci, a small village in Tuscany.  
 (vi) His artistic achievements in Milan reached their peak with the mural “The Last Supper” completed in 1497.  
 (vii) He was the illegitimate son of a Florentine lawyer and property owner.  
 (viii) After a few years again in Milan and then in Rome he settled in France in 1516, at Cloux and Amboise where he died three years later.

**Answer**

1 - v    2 - vii    3 - ii    4 - iv    5 - i    6 - vi    7 - iii    8 - viii

- (b) (i) Yet the difficulties of working in this extremely cold region will be great, and the costs may be so high that no company will undertake the work.  
 (ii) There are four main areas of the world where deposits of oil appear.  
 (iii) If progress in using atomic power to drive machines is fast enough, it is possible that oil-driven engines may give place to the new kind of engine.  
 (iv) Another is the area between North and South America, and the third, between Asia and Australia, includes the islands of Sumatra, Borneo and Java.  
 (v) In that case, the demand for oil will fall, The oil fields will gradually disappear and the deposits at the North Pole may rest where they are forever.  
 (vi) The first is that of the middle east, and includes the regions near the Caspian Sea, the Black Sea, the Red Sea and the Persian Gulf.  
 (vii) When all the present oil-fields are exhausted, it is possible that this cold region may become the scene of oil activity.  
 (viii) The fourth area is the part near the North Pole.

**Answer**

1 - ii    2 - vi    3 - iv    4 - viii    5 - vii    6 - i    7 - iii    8 - v



**13 (a) Write a set of eight recommendations for students to make optimal use of the library facilities in the college.**

**Answer**

*How to make the optimal use of library facilities*

1. Many libraries offer brief orientation sessions each year for new students. Make sure you attend the session and acquaint yourself with all the facilities that are available.
2. To keep yourself updated, take time every now and then to look at the information posted in the library's general notice board.
3. Use the library regularly. This will go a long way to help you get familiar with the resources that are at your disposal.
4. Go through the library catalogue. Once you have mastered it, you will find it less time consuming to find what you are searching for.
5. Be considerate. Do not write things into library books, nor handle them carelessly.
6. If the library does not contain books that are essential to your course, take the responsibility of informing the librarian.
7. Modify your study techniques in such a way that your library visits do not begin at the end of the semester. When the rest of your class is searching for the same book(s).
8. Adhere to all the instructions given by the library authorities.

**13 (b) Write a set of eight recommendations for the maintenance of the electrical equipment in your department.**

**Answer**

*Recommendations for Maintenance of Electrical Equipments*

1. Carry out suitable checks (inspection/testing) on the equipments on a periodic basis.
2. Follow the instructions given in the user manual (or printed on the equipment).
3. After using the equipment, clean it thoroughly and keep it back in its right place.
4. Handle all equipments with care. Do not drop them, or use them roughly. Do not contaminate them by spilling chemicals on them. Keep them dry, if instructed.
5. Keep a register of all equipments present in the laboratory, along with a detailed list of warranties and periodic maintenance provided by the manufacturer.
6. In case of sparks or short circuits, switch off the main supply and stop your work till the problem has been sorted out by qualified personnel.
7. Switch off the power supply when the equipment is not in use.
8. In case you observe anything unusual while handling the equipment, or if you get an electric shock, inform your supervisor immediately and alert the others.

314 • Technical English

14 (a) Write a letter to the editor of a newspaper about the miseries caused by the recent power cuts in your area.

Answer

5th May 2009.

From

*R. Velu  
25, Sakthi Street,  
B.V. Nagar,  
Chennai.*

To

*The Editor,  
The Times of India,  
Chennai.*

Sir;

*The duration and frequency of the recent power cuts have thrown life out of gear in our area. I request you to bring this to the notice of the authorities through your newspaper.*

*We have had no electricity all night for the whole of last week. During the daytime, we receive less than 4 or 5 hours of intermitent supply. A power surge has short-circuited our washing machine, and we have had to throw away a lot of food because the fridge doesn't work.*

*My uncle has been forced to close his shop since the acts have rendered the shop's barcode scanners useless. The neighbours have been complaining because their welding business has come to a complete standstill.*

*Last night, an elderly neighbour had to be taken to the hospital after he slipped down the stairs, trying to walk in pitch darkness. There has been absolute chaos on the main roads as traffic lights stop functioning.*

*As the temperatures soar to record heights this summer, the misery of this sultry weather has added to our suffering.*

*What we are experiencing now is ridiculous, especially when the rest of the city enjoys uninterrupted power supply.*

*Thanking you,*

*Yours truly,*

*(R. Velu)*

- 14 (b) As the President of the students' Union, write a letter to the principal of your college inviting him to the inauguration of the Enviro club. Give details of the activities of the club and of the timing and venue of the function organized.

**Answer**

3rd June 2009.

*From*

*R. Velu,  
Student Union President,  
Krishna Engineering College,  
Chennai.*

*To*

*The Principal  
Krishna Engineering College,  
Chennai.*

*Sub: Inauguration of the Enviro-club on 5.6.2009.*

*Sir;*

*With the upcoming 'World Environmental Day' on 5.6.2009, we would be pleased to have the inauguration of the Enviro-club of our college in your esteemed presence. We have proposed to organise it in the college auditorium at 3 p.m., considering your convenience. The programme aims to raise awareness on matters of child health care, pollution control, planting of trees and other current issues.*

*Your presence would encourage us into doing the activities with zeal. We hope that the time would suit your convenience, amidst your busy schedule.*

*Thanking you,*

*Yours faithfully,*

*(R. Velu)*

15. Write two paragraphs of 150 words each (total 300 words) on any one of the following topics.

- (a) The evolution of communication technology from ancient to modern times.

**Answer**

***Evolution of Communication Technology.***

*It is a well-known fact that man started communicating using hand signs but we have come a long way since then. Today we live in an era where technology has made communication easier and faster.*

**316** • Technical English

*As soon as mankind started using languages, communication took on the form of oral speech, and was soon followed by letters, which took days or months to reach their destination. Advances in transport like rail, road and air over the past century has made transport and communication easier. Graham Bell invented the telephone and Marconi invented the radio for wireless communication. Since then, technology has played a vital role in communication, more than advancements in transport.*

*The advent of computers in the 1960s and internet in the 1970s brought about a drastic change in communication. It started with e-mail which eventually replaced formal/official letters. Emails have become more effective, secure and fast.*

*Today, information is commonly shared through blogs and news sites. Social networking through facebook and orkut has brought people together, allowing friends to view an updated status instantly.*

*Wireless technology too has made great advancements, with almost everyone having mobile phones. The mobile phones have brought both ends of the world together and indeed the world has shrunk. SMS through phones are another means of faster communication. These developments are a clear indication of the evolution of communication technology over time and are paving the way for further advances in the years to come.*

**15 (b) The ways to conserve and optimize the use of available fossil fuels.****Answer*****Ways to conserve and optimize the use of available fossil fuels***

*In a time when fossil fuels are fast-depleting, it is essential to explore conserve and optimize their use for the benefit of us and those who follow us in the generations to come.*

*Efficiency has been the first and foremost issue – increasing the efficiency in the way we use fossil fuels will help us cut down on our fossil fuel consumption. There have been several proposals put forward in this regard. Experts are working on increased fuel economy for vehicles through the use of advanced computer systems and hybrid technology. We are recommended to use energy efficient electronics and appliances to cut down on energy consumption. Reserchers are attempting to create better inoulation for electrical lines to avavoid less of power, and develop better ways of shring energy.*

*Industries can play a vital role by cutting down on the use of fossil fuels for the production of industrial materials such as plastic. They can promote the use of alternatives such as payer bags for shopping and wooden spoons for cooking, and increase recycling of existing plastic materials.*

*In recent years, there have been discussions about better and safer methods of mining fossil fuels. Superior technology is required to extract deposits such as the oily sand deposits in canada. However, our concerns must also lead us to discover and improve on our alternative sources of fuel. We must also be prepared to give up luxuries. Which cause unnecessary use of fossil fuels and be sparing in our use of electricity. Moreover, it is our duty to raise awareness in our community and influence others to take the matter seriously.*

**B.E./B.TECH. DEGREE EXAMINATION , JANUARY 2010**  
**I - SEMESTER**  
**HS 2111 - TECHNICAL ENGLISH-I**  
**[COMMON TO ALL BRANCHES]**

**ANSWERS**

**PART - A**

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

A	B
(a) Dynamic	(i) Producer
(b) Enhance	(ii) Sympathy
(c) Breeder	(iii) Heighten
(d) Empathy	(iv) Getting rid of
	(v) Strength

**Answer**

(a) *Strength*    (b) *Heighten*    (c) *Producer*    (d) *Sympathy*

**2. Change the following into active voice:**

- (a) They are often taken to interesting places by their friends.
- (b) Precautions should be taken by everyone while entering the chemistry lab.

**Answer**

- (a) *Their friends often take them to interesting places.*
- (b) *Everyone should take precautions while entering the chemistry lab.*

**3. Fill in the blanks with suitable prefixes to get the meaning given against each word.**

- (a) \_\_\_\_\_ nuclear - nuclear reactions at very high temperatures.
- (b) \_\_\_\_\_ medical - relating to how biology affects medicine.
- (c) \_\_\_\_\_ reliant - able to decide things by oneself.
- (d) \_\_\_\_\_ technology - relating to very small structures.

**Answer**

a) *Thermonuclear*    b) *Biomedical*    c) *Selfreliant*    d) *Nanotechnology*

318  Technical English

## 4. Define TWO of the followings in a single sentence or two:

- a) Electrocardiogram      b) Liquid Crystal Display (LCD)      c) Battery

**Answer**

**(a) Electrocardiogram:** An electrocardiogram is a display of the pulsating movement of the heart, through the graphical lines, which are recorded on a graph. It provides information about the condition and working of the heart.

**(b) Liquid Crystal Display (LCD):** An LCD is a form of visual display used in electronic devices in which a layer of liquid crystal is sandwiched between two transparent electrodes. When an electric current is applied to a small area of this layer, the alignment of its molecules is altered, resulting in a change in its transmission of light, thus causing characters to be produced.

**(c) Battery:** A battery is a device that converts chemical energy into electrical energy by a chemical reaction between two substances. It may consist of one or more cells, arranged in parallel or series.

## 5. Fill in the blanks with suitable prepositions:

The waste heat \_\_\_\_\_ power plants is cooled \_\_\_\_\_ two reasons, to comply \_\_\_\_\_ thermal pollution regulations and to gain greater efficiency. This will be useful \_\_\_\_\_ environmental protection.

**Answer**

*from, for, with, for/in*

## 6. Expand the following compound nouns:

- (a) Steel chair      (b) Butt weld  
(c) Power cable      (d) Nickel alloy

**Answer**

- a) *A chair made of steel*      b) *A butt joint that is welded*  
c) *A cable conducting power*      d) *An alloy containing nickel.*

## 7. Fill in the blanks with the appropriate forms of words:

- | Verb         | Noun     | Adjective  |
|--------------|----------|------------|
| a) intensify | _____    | intensive  |
| b) _____     | breakage | breakable  |
| c) solve     | solution | _____      |
| d) express   | _____    | expressive |

**Answer**

- a) *intensification*      b) *break*      c) *solvable*      d) *expression*

**8. Use TWO of the following phrases in sentences of your own:**

- (a) make up (b) cut down (c) set in

**Answer**

(a) *make up* - We need two more people to make up a team.

(b) *cut down* - The doctor told him to cut down on smoking.

*We have been instructed not to cut down the remaining trees.*

(c) *set in* - The rain seems to have set in for the week.

*(‘set in’ means to begun and seem likely to continue)*

**9. Complete the following ‘IF’ clauses:**

(a) If the weather had been fine, \_\_\_\_\_.

(b) If you remove this fuse, \_\_\_\_\_.

**Answer**

(a) *If the weather had been fine, we would have come by bike.*

(b) *If you remove this fuse, there will be a power cut.*

**10. Fill in the blanks with suitable tense form of the verbs given in brackets:**

The Indian space research organization \_\_\_\_\_ (work) on the air - breathing rocket engines that will use hydrogen as fuel and air form the atmosphere as an oxidizer to burn that hydrogen. This is frontier technology, especially because it involves the use of hydrogen, a clean source of fuel.

The ISRO Chairman, G. Madhavan Nair, told The Hindu: “We \_\_\_\_\_ (initiate) work on air - breathing rocket propulsion systems. They will use hydrogen as fuel and air as oxidizer. One of the engines for this mission \_\_\_\_\_ (be) conceived. In another three months, we will be able to show some results.

If we have a good result, it will be a breakthrough. We are really considering to hold the flame at Mach 6,” he said. Mach 6 is six times the speed of sound that \_\_\_\_\_ (travel) at 1,100 km an hour.

**Answer**

*is working, have initiated, has been, travels*

**PART -B****11. Read the following passage carefully and answer the questions given at the end of 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 purpose. 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 to 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 systems have brought societies and nations very close. Within an instant the message could reach across thousands of miles. The electronics 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 has become a major developing science. Further, the most significant development of this field is that it has become interdisciplinary in nature. The application of chemistry to the medical and biological study is noteworthy.

Similarly, rapid development has been noticed in natural science 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 by products for consumption have come into existence. Genetic engineering is now at the threshold of bringing about another significant revolution in life-style. 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 the 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 developments in the physical sciences, natural sciences and engineering and technology have contributed to a comfortable life. Efficiency 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 response which best reflects the meaning of the text:**

(i) The word 'this' in the 1st paragraph refers to

- 1) Newton's theory
- 2) the theory that atom cannot be split
- 3) the fact that atom can be split
- 4) atomic research

(ii) The progress in the field of chemistry has helped in

- 1) the development of many types of industries
- 2) the progress of space research
- 3) the innovations in communications field
- 4) the increase of computers

(iii) The introduction of the supersonic aviation has made

- |                              |                            |
|------------------------------|----------------------------|
| 1) life easier for every one | 3) our world a smaller one |
| 2) our world a bigger one    | 4) our world a healthy one |

(iv) The word 'this' in the third paragraph refers to

- 1) the field of natural science
- 2) the field of electronics
- 3) the field of metallurgy
- 4) the field of genetic engineering

(v) The developments in genetic research have provided

- 1) new dimensions in the study of living organisms
- 2) new outlook to science
- 3) new names to living organisms
- 4) new life to living organisms

## 322 • Technical English

**b) State whether the following statements are 'true' or 'false':**

- (i) Industrial revolution took place in the 20th century.
- (ii) Rockets and spacecrafts have been used for travel.
- (iii) Societies have become closer because of wireless and Satellite communication system.
- (iv) Science has become interdisciplinary in nature.
- (v) Genetic engineering can never bring another revolution in life style.
- (vi) Medical diagnosis has become more reliable because of computer.

**c) Choose the most appropriate synonym which conveys the meaning of the word from the context:**

i) magnitude

- 1) importance    2) size    3) quality    4) development

ii) constructive

- 1) construction    2) useful    3) critical    4) simple

iii) proliferation

- 1) development                      3) increase in number  
2) production                        4) doubling of number

iv) Threshold

- 1) beaten track    2) doorway    3) building    4) starting point

v) promised

- 1) assured    2) given    3) spoken    4) taken

**Answer****a)**

- i) - 2) *the theory that atom cannot be split*
- ii) - 1) *the development of many types of industries.*
- iii) - 3) *our world a smaller one.*
- iv) - 3) *the field of metallurgy*
- v) - 1) *new dimensions in the study of living organisms.*

**b)**

- i) *False*    ii) *False*    iii) *True*    iv) *True*    v) *False*    vi) *True*

**c)**

- i) - (1) *importance*    ii) - (2) *useful*    iii) - (3) *increase in number*
- iv) - (4) *starting point*    v) - (1) *assured*

**12 (a) Write a set of eight instructions that are to be followed by students in college library.**

**Answer**

***Instructions to be followed in the college library.***

- i. *All students who wish to use the library must possess a valid library card and show it on request to library staff and security.*
- ii. *Students must not write in, mark, or otherwise deface or damage library material in any way.*
- iii. *Noise, disturbance and all other forms of inappropriate behaviour is prohibited in the library.*
- iv. *Students must not use mobile phones, radios, cassette recorder and other similar equipments in the library.*
- v. *Students should not attempt to reserve study place by leaving personal belongings at desks when they know that they will be absent for more than 45 minutes.*
- vi. *Students must not bring food and drinks into any part of the library.*
- vii. *Students are required to handle issued books with utmost care. In the event of damage of any kind, the last reader will be liable to compensate for the damage caused, except if they report it to the librarian before leaving the counter.*
- viii. *The library membership card is non-transferrable. Students must not lend their library cards to other students under any circumstances, whatsoever.*

**12 (b) Write a set of eight instructions to be followed to maintain laptops in good condition.**

**Answer**

***Instructions to maintain laptops in good condition.***

- i. *Keep the laptop free from dust.*
- ii. *Switch off the power supply when not in use.*
- iii. *Don't work with the laptop when it is overheated.*
- iv. *Do not overload the laptop.*
- v. *Avoid touching the screen.*
- vi. *Keep the laptop away from heat and moisture.*
- vii. *Do not handle the laptop roughly.*
- viii. *Let the laptop not be in the standby mode for a long time.*

324  Technical English

**13 (a) Write a paragraph on India as a developed nation with self sufficiency in resources, power and technology. Express your views in two paragraphs of 100 words each.**

**Answer**

***India as a developed nation with self sufficiency in resources, power and technology.***

*Among the developed nations of the world, India is propping up to be one such, with advancements in science and technology, in the field of agriculture, in conducting sports events and striving to excel in military power, communications and nuclear power. Despite India's aim to reach great heights in all these sectors, it has to cope up with poverty, population and communal issues. The government has to set right all these problems to make India flourish as a developed nation.*

*India is a land of agriculture, and even of minerals. As Mahatma Gandhi has said, most of the India live in villages. It is because agriculture plays a pivotal role, from the bygone years. However, people have resorted to city dwelling, whereas the villages have become vacant. The concept of the rich becoming richer, and the poor becoming poorer has not only reduced the populations in villages, but has also led to the overcrowding of cities. The government is making all its efforts to make both ends meet, by giving education for all, but it is still a long drawn effort.*

*With advancements in technology and improvisations in life-styles, India is striving to be a developed self-sufficient nation.*

**13 (b) Should students become entrepreneurs? Substantiate your views in a paragraph not exceeding 200 words.**

**Answer**

***Should students become entrepreneurs?***

*Entrepreneurship is a term that is generally associated with performance in business. For students to become entrepreneurs is one more leap forward. The transition from a school student to a college student is not much of an expedition, whereas entrepreneurship is a quality to be wrought from a passion for business. It is not taught, and mere bookish knowledge will not suffice. There has to be an inner motivation, a pleasing personality, and such traits which are the hallmarks of an entrepreneur.*

*There are several such employment sectors, wherein studies and intelligence alone will do. But entrepreneurship is a yardstick ahead. An acumen to approach people, converse with them with courage and conviction, allow them to think on your ideas, make them accept it, either willingly or unwillingly, are the traits of a good entrepreneur. A successful businessman would have had to be a good entrepreneur with a positive attitude, in the earlier stages of his career.*

*An entrepreneur is born and not made. Even a trained entrepreneur may have certain pit-falls, but an assertion to wilfully reach the top can make a successful entrepreneur.*

- 14 (a) Assume yourself to be the Chairman of a Social Welfare Association. You are appalled by the television programmes, where various channels show programmes replete with violence. Write a letter to the editor of a newspaper expressing your concern over the impact of these programmes on young, impressionable children.

**Answer**

*Lakshmi Nagar Welfare Association*

*Chennai - 600 087.*

*5th May 2011.*

*To*

*The Editor*

*The Times of India,*

*Chennai.*

*Sir;*

*Sub: Television programmes posing a threat to the future generation.*

*It has become a common sight these days to find young people watching television, without the elders by their side. The youngsters, these days, feel free to watch any programme, unable to discriminate between the good and bad. The youth of these days are knowledgeable, no doubt, but they are immature to decipher the repercussion of such programmes on their young minds. Indiscipline and violence are the foray of the programmes these days, which pervert the mind of the youth.*

*It is in the hands of the Government and high officials, to put an end to such programmes, which could affect the growth of the future generation. The mind of the youth becomes tainted with such obscene and violent scenes, that it restricts the growth of their true ability and talent.*

*Thanking you,*

*Yours faithfully,*

*R. Velammal.*

**14 (b) Assume yourself as the Vice-Chancellor of Tanca University, Chennai, expressing your consent to inaugurate the Technical symposium organized by the Department of Computer Science, Government College of Engineering Salem.**

**Answer**

*Tanca University  
B.V Nagar, Chromepet,  
Chennai - 41.*

*5th March 2010.*

*From*

*Dr. R. Vel Murugan  
Vice Chancellor*

*To*

*Mr. M.V. Prasad,  
Department of Computer Science,  
Government College of Engineering,  
Salem.*

*Dear Mr. M.V. Prasad,*

*Sub: Invitation for the inaugural of technical symposium of your department.*

*I accept your invitation for the inauguration of the symposium. You may proceed with the arrangements for the function.*

*Thanking you,*

*Yours sincerely,  
Dr. R. Vel Murugan.  
Vice-Chancellor.*

**15 (a) Arrange the following sentences into a coherent paragraph:**

- i. This is particularly true of some LSD addicts.
- ii. Finally it is true that the influx of immigrants in our urban areas and stress in our society have hastened the spread of the use of drugs.
- iii. At a still deeper level, young intelligent and often sensitive members of our society experiment in the hope of finding an alternative.
- iv. In recent years, drug taking by young people has become a habit which seems to be spreading fast and wide.
- v. The cult becomes a symbolic rejection of the establishment.
- vi. It is grim epidemic that requires the attention and help of every responsible citizen.
- vii. The causes of the disease are not easy to identify with certainty.
- viii. At a somewhat deeper level, the habit may have started as a protest against authority and as a result of dissatisfaction with the modern world.

**Answer**

1) iv      2) vi      3) vii      4) v      5) viii      6) iii      7) i      8) ii

**15 (b) Arrange the followings sentences into a coherent paragraph:**

- 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.

**Answer**

1) viii      2) ii      3) vi      4) iv      5) i      6) vii      7) iii      8) v

**B.E./B.TECH. DEGREE EXAMINATION , MAY / JUNE 2010****I - SEMESTER****HS 2111 - TECHNICAL ENGLISH-I  
[COMMON TO ALL BRANCHES]****ANSWERS****PART - A****1. Match the words in column A with their meanings in column B.**

A	B
(a) Consumption	confined within narrow limits
(b) Extraction	a person who moves from one place to another for a limited period
(c) Cramped	taking out
(d) Migrant	use

**Answer**

- (a) *use*  
 (b) *taking out*  
 (c) *confined within narrow limits*  
 (d) *a person who moves from one place to another for a limited period.*

**2. Change the following into active voice:**

- (a) The first prize was won by our team.  
 (b) The equipment for the practical examinations was being arranged by the technician.

**Answer**

- (a) *Our team has won the first prize.*  
 (b) *The technician was arranging the equipment for the practical examinations.*

**3. Add suitable prefixes to the following words to match the meanings given against them:**

- (a) \_\_\_\_\_ tension : abnormal blood pressure  
 (b) \_\_\_\_\_ privileged : disadvantaged  
 (c) \_\_\_\_\_ sensitive : abnormally or extremely sensitive  
 (d) \_\_\_\_\_ continent : large land mass, not large enough to be called a continent.



**Answer**

- a) hypertension                      c) hypersensitive  
 b) underprivileged                  d) subcontinent

**4. Define any TWO of the following:**

- (a) Radar                      (b) Screw driver      (c) Microprocessor

**Answer**

- (a) **Radar** - RADAR means Radio Detection And Ranging. It is an instrument used to find the presence of objects through short radio waves.
- (b) **Screw driver** - It is a mechanical device used to loosen or tighten the grip on a screw head.
- (c) **Microprocessor** - It is an electronic circuit, which functions as the Central Processing Unit (CPU) of a computer that provides computational control.

**5. Correct the spelling and grammatical errors in the followings passage and rewrite them.**

There is nothing in the experiense of the last twenty-five years to suggest that modern technology, as we know it, can really help us to readuce wotrld poverty, not to mention the problem of unemployment which has already reaches levels like thirty percent in may so-called developing countryies.

**Answer**

*There is nothing in the experience of the last twenty-five years to suggest that modern technology, as we know it, can really help us to reduce world poverty, not to mention the problem of unemployment which has already reached levels like thirty percent in many so-called developing countries.*

**6. Expand the following Noun + Noun phrases:**

- (a) water pipe                      (c) boiler design  
 (b) cylinder head                  (d) grease gun

**Answer**

- (a) *Water pipe* - pipe through which water is drawn.
- (b) *Cylinder head* - head of the cylinder.
- (c) *Boiler design* - The process of designing of boilers.
- (d) *Grease gun* - gun that is used for applying grease.

**330**      Technical English**7. Fill in the blanks with appropriate forms of words:**

Verb	Noun	Adjective
(a) _____	generation	generative
(b) move	_____	movable
(c) stabilize	stabilization	_____
(d) occupy	occupation	_____

**Answer**

a) generate      c) stable / stabilized      b) movement / motion      d) occupied

**8. Punctuate the following:**

how does one describe mother Teresa she is of small stature almost frail in build soft spoken yet clearly a very determined woman of great courage

**Answer**

*How does one describe Mother Teresa?*

*She is of small stature, almost frail in build, soft spoken, yet clearly a very determined woman of great courage.*

**9. Complete the following:**

- a) If drivers do not obey traffic regulations, \_\_\_\_\_
- b) \_\_\_\_\_, the temperature at the turbines will be too high.

**Answer**

*(a) If drivers do not obey traffic regulations, there is bound to be chaos and confusion.*

*(b) If circulation of cold water is not provided, the temperature at the turbines will be too high.*

**10. Fill in the blanks with suitable tense forms of the verbs given in brackets.**

Language \_\_\_\_\_ (interact) with every aspect of human life. It \_\_\_\_\_ (perform) various functions and \_\_\_\_\_ (serve) various purposes. A normal person \_\_\_\_\_ (acquire) in childhood the ability to use language.

**Answer**

*interacts, performs, serves, acquires.*

**PART - B****11. Read the following passage carefully and answer the questions given at the end of it:**

Humans have struggled against weeds since the beginnings of agriculture. Marring our gardens is one of the milder effects of weeds- any plants that thrive where they are unwanted. They clog waterways, destroy wildlife habitats, and impede farming. Their spread culminates grazing areas and accounts for one third of crop loss; they compete for sunlight, nutrients, and water with useful plants.

The global need for weed control has been answered mainly by the chemical industry. Its herbicides are effective and sometimes necessary, but some pose serious problems, particularly, if misused. Toxic compounds threaten animal and public health when they accumulate in food plants, ground water and drinking water. They also harm workers who apply them.

In recent years, the chemical industry has introduced several herbicides that are more ecologically sound. Yet new chemicals alone cannot solve world's weed problems. Hence scientists are exploring the innate weed killing powers of organisms, primarily insects and micro-organisms.

The biological agents now in use are environmentally benign and are harmless to humans. They can be chosen for their ability to attack selected targets and leave crops and other plants untouched. In contrast, some of the most effective chemicals kill virtually all the plants they come in contact with, sparing only those that are naturally resistant or have been genetically modified for resistance. Furthermore, a number of biological agents can be administered only once, after which no added applications are needed. Chemicals typically must be used several times per growing season.

**(a) Complete the following statements.**

i) The topic dealt with in the passage is

- 1) The importance of chemical industry
- 2) The dangers of toxic chemicals
- 3) Advantages of biological agents over chemicals
- 4) A proposal to ban the use of all herbicides

ii) The term the author defines in the first paragraph is

- |                  |                      |
|------------------|----------------------|
| 1) Grazing areas | 3) Wildlife habitats |
| 2) Weeds         | 4) Nutrients         |

iii) According to the passage, biological agents consist of \_\_\_\_\_

- |                               |               |
|-------------------------------|---------------|
| 1) Insects and microorganisms | 3) Weed       |
| 2) Useful plants              | 4) Herbicides |

**332** • Technical English

iv) A simple damaging effect of weeds is seen in

- |            |                       |
|------------|-----------------------|
| 1) farms   | 3) environment        |
| 2) gardens | 4) chemical factories |

**(b) Mention whether the following statements are True or False:**

- i) Chemical agents are occasionally required.
- ii) Farmers have been fighting with undesirable plants.
- iii) Weeds alone cause crop loss.
- iv) The chemical industry should not produce herbicides.
- v) Biological agents are more advantageous than chemicals.
- vi) Ground water has been badly affected by chemicals.

**(c) Choose the appropriate definition for the given words or phrases as they are used in the text.**

i) marring

- |             |              |
|-------------|--------------|
| 1) spoiling | 3) replacing |
| 2) dividing | 4) planting  |

ii) clog

- |             |               |
|-------------|---------------|
| 1) drain    | 3) obstruct   |
| 2) float on | 4) grow along |

iii) innate

- |            |           |
|------------|-----------|
| 1) natural | 3) new    |
| 2) organic | 4) active |

iv) benign

- |                 |             |
|-----------------|-------------|
| 1) unfavourable | 3) critical |
| 2) kind         | 4) lose     |

v) virtually

- |                  |                |
|------------------|----------------|
| 1) realistically | 3) nearly half |
| 2) quickly       | 4) almost all  |

vi) accounts for

- |               |              |
|---------------|--------------|
| 1) encounters | 3) expresses |
| 2) endangers  | 4) explains  |

**Answer****a)**i) 3) *advantages of biological agents over chemicals*ii) 2) *weeds*iii) 1) *insects and micro-organisms*iv) 2) *gardens***b)**i) *False*    ii) *True*    iii) *False*    iv) *False*    v) *True*    vi) *True***c)**1) - 1) *spoiling*                      2) - 3) *obstruct*                      3) - 1) *natural*4) - 2) *kind*                              5) - 1) *almost all*                      6) - 4) *explains***12 (a) Write a set of eight instructions that need to be implemented in marriage halls/auditoriums.****Answer*****A set of instruction to be implemented in a marriage halls / auditoriums***

- i. *Make your booking well in advance. Arrange security, drinking water, etc. as per the need.*
- ii. *Do not allow any activity that may cause damage to the auditorium/hall, its equipments and facilities.*
- iii. *Smoking, drinking alcoholic beverages and all other forms of nuisance is strictly prohibited.*
- iv. *No loud music / loudspeaker should be played at or outside the entrance of the hall.*
- v. *The organicers must ensure that the auditorium is neither overcrowded nor used for conducting unlawful or objectionable programmes.*
- vi. *Tables and chairs may be arranged as necessary. However, the room must be returned to its original state before vacating the building.*
- vii. *Exercise due care in the use of all facilities provided, and be responsible in leaving all areas and equipment clean and in good order.*
- viii. *Animals are not allowed to enter the premises.*
- ix. *Inflammable materials are not to be brought inside the premises, except in the case when a written permission has been provided by the authorities.*

334 • Technical English

**12 (b) Write a set of eight instructions that could be followed to reduce pollution.**

**Answer**

***Instructions to be followed to reduce pollution***

- i. *Conserve energy – turn off appliances and lights when you leave the room. Avoid leaving electronic devices on stand-by mode for long period of time.*
- ii. *Whenever possible, use public transport, walk or ride a bicycle.*
- iii. *Avoid spilling fuel. Do a regular maintenance of your vehicle to prevent oil leaking onto roads and parking lots, from where they are washed into water bodies.*
- iv. *Always throw your rubbish into the rubbish bin. At home, instruct your maid to do the same. Complain against shops which throw their daily garbage into rivers or open plots.*
- v. *Make refrestation a priority. Develop awareness of how planting trees can help to reduce pollution.*
- vi. *Insist on building toilets and better sewage systems so that poor people need not go to the toilet on the roadside.*
- vii. *Donot throw rubbish / garbage into drainage systems. This dogs them up and causes blockages in water flow, especially during monsoon.*
- viii. *Reduce use of plastic. When you go shopping, carry a shopping bag with you.*

**13 (a) Write a technical description of a gas stove, its working principle and its uses in two paragraphs, each in about 100 words.**

**Answer**

***Gas Stove***

*The gas stove is a necessary commodity in all Indian households. It is affordable, comfortable and does not pollute the atmosphere. Despite the invention of the induction stove and microwave ovens, the gas stove has found a permanent place in every Indian household.*

*A gas stove is usually kept on a platform, above the cylinder, from which gas is supplied to it. It consists of metal pipes, through which gas flows into the burner. The burner is surrounded by a metal stand, on top of which the cooking vessel is placed. All these are fixed on a metal plate, which can be easily dismantled while cleaning.*

*Gas stove is a boon to mankind, wherein cooking is done easily and without much hassie. It has been used to prepare rich, chapattis, idlis, dosas and every other kind of food you can possibly imagine. It is used to boil milk and water and even to cook papaddam! During festivals, many households would struggle to prepare sweet dishes without a gas stove. However, there is the danger of the gas cylinder bursting as a result of gas leakage or on contact with a burning matchstick. It is essential that the gas cylinder and gas stove are handled with care.*

**13 (b) Write two paragraphs of 100 words each comparing village life with city life.**

**Answer**

***Village life and city life***

*It is a well-known fact that cities are buzzing with activities round the clock. The humdrum of city life, the heavy traffic, the noise and pollution make a marked distinction between village life and city life. In the materialistic world, people find city life very attractive. Despite the various troubles of city life, people prefer it because of the vast array of commodities and facilities that city dwellers have access to. And so, despite the hardships of high living expenses and medical treatment, and problems of space, cleanliness and availability of clearwater, many people migrate to cities every year in search of something better.*

*Village life, as opposed to city life, is one of calmness and serenity. The rich greenery, the cool air, and the uncontaminated clear water, are all the pleasantries of village life. It provides a life closer to nature, which is even yearned by people meditating in an apartment in the city. People are less prone to accidents, unlike in the city. There is one major disadvantage in the village- that of medical facility. Very few villages have hospitals to serve their immediate needs. Poor sanitary conditions and lack of even basic amenities make daily life in villages a greater challenge.*

*Village life is yearned by many, but city life is preferred by most people.*

**14 (a) Write a letter to the Editor of a newspaper about the economic recession in the IT industry.**

**Answer**

*43, RV Nagar*

*Chennai - 87.*

*5th May 2010.*

*To*

*The Editor,*

*The Hindu,*

*Anna Salai,*

*Chennai - 600 002.*

*Sir,*

*Sub: Economic recession in the IT industry.*

*The IT industry had been scaling great heights, all over the world, until the bane of recession struck in. Much to the awe of several IT professionals, recession changed their world, without much of a prior notice. Till then, they were all earning a huge income, and all of a sudden, they found themselves without jobs.*

*The IT sector changed the economy of the world as such. It took two years to revive the economy, which had a lull obstructing the development of several nations.*

*Yours truly,*

*R. Velmurugan.*



**14 (b) Write a letter inviting the Managing Director of a leading computer company to deliver the key - note address and inaugurate the seminar on e - governance organized by your institution.**

**Answer**

5th May 2010.

Chennai.

*From*

*R.Suraj,  
Student Chairman,  
R. V. Institute of Techonology,  
Pennalur,  
Chennai.*

*To*

*The Managing Director,  
Jayant Technology Solutions,  
Guindy.*

*Sir;*

*Sub: Invitation to inaugurate a seminar on e-Governance.*

*A seminar on e-Governance is to be conducted at our college premises on 25th March 2010. We would be grateful to you if you would accept out invitation to inaugurate the seminar. It is a well-known fact that your company has proven to be a world class leader in technology solutions. We, the students, thought it appropriate to invite you to be the chief guest for the inauguration.*

*Thanking you,*

*Yours faithfully,*

*R. Suraj.*

**15 (a) Arrange the following sentences into a coherent paragraph:**

- i. But the answers are very hard to find, since several words appear equally appropriate.
- ii. The third type of cross word puzzle is a straightforward exercise in which words matching the definitions given in the clues have to be found.
- iii. There are several types of cross word puzzles.
- iv. There are no catches or tricks.

**338** 🖱️ Technical English

- v. The first is the prize competition in which the person who finds the correct answers gets a big prize.
- vi. The clue gives only hints about the word and it tests your comprehension and general knowledge.
- vii. This type is useful in the study of vocabulary.
- viii. The second type of crossword puzzle is one in which there is only one possible answer to every clue.

**Answer**

1) *iii*    2) *v*    3) *viii*    4) *vi*    5) *ii*    6) *iv*    7) *i*    8) *vii*

**15 (b) Rearrange the following sentences into a coherent paragraph:**

- i. Photography is the process, activity and art of creating still or moving pictures by recording radiation on a sensitive medium such as a photographic film or an electronic sensor.
- ii. The birth of commercial digital photography came as a real blessing to combat such odds and it has made picture editing relatively simple for even the novice photographer.
- iii. Though digital photography has a wide market impact, digital imaging has raised many ethical concerns because of the ease of manipulating digital photographs in post processing.
- iv. Colour photography was explored in the start of mid 1800's and advancements in technology made possible combining several technical features.
- v. The word "photograph" comes from the Greek (phos) "light" + "graphics".
- vi. Traditional photography burdened photographers working at remote locations without easy access to processing facilities and competition from television pressured photographers to deliver images to newspapers with greater speed.
- vii. All photography was originally monochrome and most of the photographs were black and white.
- viii. However, recent changes of in-camera processing allow digital fingerprinting of RAW photos to verify against tampering of digital photos for forensic use.

**Answer**

1) - *v*    2) - *i*    3) - *vii*    4) - *iv*    5) *vi*    6) - *ii*    7) - *iii*    8) - *viii*