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## FIRST YEAR

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## ENGLISH GRAMMAR AND COMPOSITION

## LETTERS

1. Letter to your younger brother advising him to pay attention to his studies and avoid bad company.
2. Letter to your father requesting him to increase your monthly allowance.
3. Letter to your friend describing him/ her your first impression of college life.
4. Letter to your friend inviting him to attend the marriage of your brother/ sister.
5. Letter to your mother/ father describing your progress in studies.
6. Letter to your younger brother/ sister suggesting some methods for improving English.
7. Letter to your brother/ uncle/ friend thanking him for sending you a beautiful gift on your birthday.
8. Letter to your friend requesting him/ her to lend you some books.
9. Letter to your friend congratulating him/her on his/ her success in his examination.
10. Letter to your friend telling him/her about the profession you want to adopt.
11. Letter to your friend, condoling on the death of his/her mother.
12. Letter to your father about your health and studies.

## APPLICATIONS

1. Application to the Principal of your college, requesting him/her for full fee concession.
2. Application to the Principal of your college, requesting him/her to grant you sick leave on medical grounds.
3. Application to the Principal of your college, requesting him/her for the issuance/ grant of character certificate.
4. Application to the Principal of your college, requesting him/her for remission of fine.
5. Application to the Principal of your college, requesting him/her for re-admission in the college.
6. Application to the Principal of your college, requesting him/her for grant of scholarship/financial help from a special fund.
7. Application to the Principal of your college, requesting him/her for change of subject.
8. Application to the Principal of your college, requesting him/her for refund of library security.

## STORIES

1. Honesty is the Best Policy
2. No Pains, No Gains
3. A Foolish Stag
4. The Hen That Laid Golden Eggs
5. The Slave and the Lion
6. A Friend in Need is a Friend Indeed
7. The King and the Spider
8. The Wolf and the Lamb
9. A Stitch in Time Saves Nine
10. Tit for Tat
11. A Rolling Stone Gathers No Moss
12. Grapes are Sour

## GENERAL STATEMENT

Teachers will teach the following grammar items in the classroom and will assign the same as homework for the reinforcement:

- Correct use of tenses and verbs
- Punctuation
- Pair of words


## NOTE:

o In objective type paper, the question, 'choose the right option of the underlined words" should be given from the retained lessons only.
o Explanation of the stanza with reference to the context will be given from the retained poems only.
o Punctuation will be given from the retained lessons of English Book-I.
o The passage to translate into Urdu will be selected from the retained lessons of English Book-I.
o The students whose medium of instruction is English will write an essay on an unseen topic.

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Homework: Q.6, Q.7, Q.8, Q.17.
CHAPTER NO: 9 SOLUTION
TOPIC: (9.3, 9.5, 9.6, 9.7)
Ideal and Non- Ideal Solutions (Pg. 260-262). Solubility and Solubility Curves,
Colligative Properties of Solutions, Energetics of Solution (265-277).
Classwork: Q.1(ii, v, vi, vii, viii, ix, x), Q. 2 (ii, iii, iv, v, vi, vii, viii, ix, x), Q.3(iii, iv, v,
vi, vii, viii), Q.4, Q.5, Q.12, Q.12, Q.21, Q.22, Q.23.
Homework: Q.7, Q.8, Q.9, Q.10, Q.11, Q.13, Q.14, Q.15, Q.16.

## CHAPTER NO: 10 ELECTROCHEMISTRY

TOPIC: (10.1(10.1.1, 10.1.2), 10.2, 10.3, 10.4)
Definition of Electrochemistry, Oxidation State and Balancing of Redox Equations (Oxidation Number or State, Finding Oxidation Number of an Element in a compound or a Radical) (Pg. 284-285), Electrolytic Conduction, Electrode Potential, Electrochemical Series (Pg. 289-300).
Classwork: Q.1, Q.2(i, ii, iii, iv, vi), Q.3 (i, ii, iii, iv, v, vi, vii, viii), Q.4, Q.15, Q. 16 (b, d, e, g, h).
Homework: Q.7, Q.8, Q.9, Q.10, Q.11, Q.12, Q.13, Q. 14 (a, b).

CHAPTER NO: 11 REACTION KINETICS
TOPIC: 11.1, 11.3, 11.4, 11.5(11.5.6).
Rate of Reaction (308-313), Energy of Activation, Finding of Order of Reaction. (Pg. 316-319). Arrhenius Equation (Pg. 322-324).
Classwork: Q.1, 2, Q.3(i, ii, iv, v), Q.8, Q.19, Q.20, Q.21, Q.22.
Homework: Q.4, Q.5, Q.6, Q. 7 (i, iii, iv), Q.9, Q. 15.

## LIST OF EXPERIMENTS (CHEMISTRY) PART- I

1 Crystallization of benzoic acid from water.
2 To separate a mixture of various inks by paper chromatography. 28.6 grams of washing soda $\left(\mathrm{Na}_{2} \mathrm{CO}_{3} . \mathrm{xH}_{2} \mathrm{O}\right)$ have been dissolved $/ \mathrm{dm}^{3}$. Calculate the number of water molecules of crystallization. You are provide with 0.1 M HCl solution.
16 Determination of $\mathrm{NaHCO}_{3}$ in the given sample of baking soda. 0.1 M HCl soln. is provided.
178.4 gram $\mathrm{M} \mathrm{HCO}_{3}$ are dissolved per $\mathrm{dm}^{3}$ of solution. Find out At. Wt. of M. 0.05 $\mathrm{M} \mathrm{H}_{2} \mathrm{SO}_{4}$ is given.
18 You are given the solution of $\mathrm{KMnO}_{4}$. Calculate its volume required to prepare $1.0 \mathrm{dm}^{3}$ of $0.002 \mathrm{M} \mathrm{KMnO}_{4}$ solution.
19 The given soln. 'A' contains 10 grams of a mixture of $\mathrm{H}_{2} \mathrm{SO}_{4}$ and oxalic acid dissolved $/ \mathrm{dm}^{3}$. Determine the percentage of $\mathrm{H}_{2} \mathrm{SO}_{4}$ in the mixture. 0.02 M $\mathrm{KMnO}_{4}$ is given.

20 Determine the no of molecules of water of crystallization in a given sample of oxalic acid by permanganate titration. The amount of oxalic acid dissolved per $\mathrm{dm}^{3}$ is 6.3 g .
21 Determination of solubility of oxalic acid at room temperature.
To determine the strength of ferrous sulphate solution by titrating it against 0.02 M $\mathrm{KMnO}_{4}$.
The given solution contains 30 gram of partially oxidized $\mathrm{FeSO}_{4} \cdot 7 \mathrm{H}_{2} \mathrm{O}$ dissolved per $\mathrm{dm}^{3}$. Determine the \%age of oxidation of the given sample.
24 To determine the strength of given ferrous ammonium sulphate (Mohr's salt) by titrating it against standard potassium permanganate solution.
The given solution contains 40 g . of $\mathrm{FeSO}_{4}\left(\mathrm{NH}_{4}\right)_{2} \mathrm{SO}_{4} \cdot \mathrm{xH}_{2} \mathrm{O}$ dissolved per dm ${ }^{3}$. Determine the value of x .
26 Determine the solubility of given sample of Mohr's salt at room temperature. You are provided with $0.02 \mathrm{M} \mathrm{KMnO}_{4}$.
27 Prepare a standard $(\mathrm{M} / 10) 250 \mathrm{~cm}^{3}$. Solution of iodine. $0.1 \mathrm{M} \mathrm{Na}_{2} \mathrm{~S}_{2} \mathrm{O}_{3}$ is provided.
$28 \quad 24.8$ grams of a sample of alkali thiosulphate $\left(\mathrm{M}_{2} \mathrm{~S}_{2} \mathrm{O}_{3}\right)$ are dissolved in $1 \mathrm{dm}^{3}$ of the given solution. Calculate the atomic weight of the metal by a volumetric method. Given $\mathrm{M} / 10$ iodine solution.
2920 gram of $\mathrm{Na}_{2} \mathrm{~S}_{2} \mathrm{O}_{3}$ are dissolved in one $\mathrm{dm}^{3}$ solution. Find out the \%age of sulphur. You are provided with 0.05 M iodine solution.

## CHAPTER 1: NUMBER SYSTEMS

Classwork: Example 6: (pg.10), Exercise 1.1: Q.1(iii), Q.2(i,vi,x), Q.4(i),
Example 1:(pg.15), Exercise 1.2: Q.4(iv), Q.5(i), Q.9,12, Q.14(ii), Q.15(ii), Q.16(i),
Example 1: (i)(pg.20), Theorems(iii,iv,vi) (pg.21), Example 2: (pg.24),
Example 3: (pg. 24 \& 25), Exercise 1.3: Q.2(iii), Q.4, Q.5(iii), Q.6(ii), Q.7(i)
Homework: Exercise 1.1: Q.1(iv), Q.2(vii,ix,xi,xii), Q.4(ii), Q.5, Exercise 1.2: Q.4(i,iii), Q.5(iii), Q.8,11, Q.14(i), Q.15(i,iii), Q.16(ii), Example 5: (i)(pg.27),

Exercise 1.3: Q.2(ii,iv), Q. 5 (ii,iv), Q.6(i)

## CHAPTER 2: SETS, FUNCTIONS AND GROUPS

Classwork: Example 4: (pg.33), Exercise 2.1: Q.1(iii), Q.2(i,v), Q.4(viii), Q.8(vi),
Q.9(ii), Q.10(i), Exercise 2.2: Q.1(iii), Q.2(i), Q.4(iii,vi), Q.5(ii), Q.6(i),

Exercise 2.3: Q.1(i), Q.3, Q.6(ii) Q.7(i), Example 4: (pg.53), Exercise 2.4: Q.1(i),
Q.2(iii), Q.3(i,ii), Q.7(i) Q.9(i), Exercise 2.5: Q.1, Exercise 2.6: Q.1(iii) Q.4(ii), Example 5: (pg.65),Example 6: (pg.66), Exercise 2.7: Q.3, Example 2: (pg.71), Solution of Linear Equations(pg.76), Reversal Law of Inverses(pg.77), Exercise 2.8: Q. 5
Homework: Exercise 2.1: Q.1(xi), Q.2(vi,ix,xii,xvi), Q.4(i,ii), Q.8(ii), Q.9(iv),
Q.10(vi,vii), Exercise 2.2: Q.1(iv,v), Q.2(ii), Q.4(ii,vii), Q.5(iii.iv), Q.6(ii),

Exercise 2.3: Q.6(iii), Q.8, Q.7(ii), Exercise 2.4: Q.1(iii), Q.2(ii), Q.3(iv), Q.4(ii,iii),
Exercise 2.5: Q.4, Exercise 2.6: Q.1(ii,iv), Q.4(iv,v), Exercise 2.7: Q.4,
Example 7: (pg.72), Exercise 2.8: Q. 6

## CHAPTER 3: MATRICES AND DETERMINANTS

Classwork: Adjoint of a $2 \times 2$ Matrix(pg.90), Example 4: (pg.92), Example 5: (pg.94), Exercise 3.1: Q.2, Q.3(i), Q.5,8, Q.12(ii), Exercise 3.2: Q.3(ii), Q.5(i), Q.6(iii), Q.8(ii), Example 2: (pg.104), Example 7: (pg.110), Exercise 3.3: Q.2(iii), Q.3(iii, xi), Q.5(v), Q.8,11, Example 3: (pg.125), Exercise 3.4: Q.6(i), Q.8, Q.10(iii), Example 3: (pg.137), Exercise 3.5: Q.1(i), Q.3(ii)
Homework: Exercise 3.1: Q.3(ii), Q.9, Q.12(i), Exercise 3.2: Q.2(ii), Q.4(iv), Q.7(i), Q.9(ii), Exercise 3.3: Q.1(i), Q.2(i,ii), Q.3(ii,iv), Q.4(ii), Q.5(i,iii), Q.6(i,iii), Q.14(i),
Q.16, Exercise 3.4: Q.2(ii), Q.5, Q.10(ii), Q.8,11, Exercise 3.5: Q.1(iii), Q.2(ii), Q.4(ii), Q.5(ii), Q. 6

## CHAPTER 4: QUADRATIC EQUATIONS

Classwork: Exercise 4.1: Q.3,8,9,19, Example 1: (pg.143), Exercise 4.2: Q.1,5,10,19, Exercise 4.3: Q.2,5,11, Three Cube Roots of Unity(pg.151), Properties of Cube Roots of Unity(ii)(pg.152), Four Fourth Roots of Unity (pg.154), Exercise 4.4: Q.2(iii), Q.3(i), Q.5, Example 2: (pg.157), Example 4: (pg.158), Exercise 4.5: Q.1,7,11, Exercise 4.6: Q.1(vi), Q.3(iv), Q.6, Q.7(v), Example 1: (ii)(pg.165),

Exercise 4.7: Q.1(iv), Q.2(i), Exercise 4.8: Q.1,6,9, Exercise 4.9: Q.2,8, Exercise 4.10: Q.2,5 Homework: Exercise 4.1: Q.2,5,6,10,12,15,17,18, Exercise 4.2: Q.4,11,14,17,18,22,24, Exercise 4.3: Q.4,6,10, Exercise 4.4: Q.2(i,v), Q.4,6,7, Q.8(i,iii),
Exercise 4.5: Q.10,12,14,15,16, Exercise 4.6: Q.1(i,ii), Q.2, Q.3(i), Q.7(i,vi), Q.8, Exercise 4.7: Q.1(ii,iii), Q.3(i), Q.5,7, Exercise 4.8: Q.4,7,10, Exercise 4.9: Q.3,5,10, Exercise 4.10: Q.4,6

## CHAPTER 5: PARTIAL FRACTIONS

Classwork: Example 1: (pg.180), Exercise 5.1: Q.5, Example 1: (pg.184),
Example 2: (pg.184), Exercise 5.2: Q.4,9, Example 1: (pg.186), Exercise 5.3: Q.1,10, Example 1: (pg.188)
Homework: Exercise 5.1: Q. 4,7,10, Exercise 5.2: Q.6,11, Exercise 5.3: Q.3,6,8 CHAPTER 6: SEQUENCES AND SERIES
Classworlk: Example 2: (pg.190), Exercise 6.1: Q.1(iii,viii), Q.2(v), Example 3: (pg.193), Example 4: (pg.194), Exercise 6.2: Q.2,6,13, Example 1: (pg.195), Exercise 6.3: Q.1(ii), Q.6, Exercise 6.4: Q.2(ii), Q.6, Exercise 6.6: Q.2, Q.7(ii), Q.8,12, Exercise 6.7: Q.1(ii), Q.2(i), Example 3-6: (pg. 213 \& 214), Exercise 6.8: Q.1, Q.5(iii), Q.6(ii), Q.13, Example 1: (pg.219), Relations Between Arithmetic, Geometric and Harmonic Means(pg.222), Exercise 6.10: Q.1(ii), Q.6,9,16
Homework: Exercise 6.1: Q.1(ii,v,vi,vii), Q.2(i), Q.3(ii,iv), Exercise 6.2: Q.4,7,8,9,12, Exercise 6.3: Q.3,4,7, Exercise 6.4: Q.2(iii,v), Q.3(i), Q.4(ii), Q.11,14,15,16, Exercise 6.6: Q.1,3,9,14, Exercise 6.7: Q.1(i), Q.2(ii), Q.3(i), Q.4,6, Exercise 6.8: Q.4, Q.5(ii), Q.6(i,iv,) Q.8,9 Q.12(i), Q.14, Exercise 6.10: Q.1(i), Q.2(ii), Q.7,8,12,13, Q.14(i), Q. $15(\mathrm{i}), \mathrm{Q} .17$

## CHAPTER 7: PERMUTATION, COMBINATION AND PROBABILITY

Classwork: Example 2 \& 3: (pg.230), Exercise 7.1: Q.1(vii,x), Q.2(vi,ix),
Exercise 7.2: Q.1(v), Q.2(ii), Q.7, Example 3: (pg.238), Exercise 7.3: Q.1(ii), Q.4,12, Complemmentary Combination (pg.240), Example 1-3: (pg.241), Exercise 7.4: Q.1(ii), Q.2(i), Q.9(i), Example 1 \& 2: (pg. 244 \& 245), Exercise 7.5: Q.3(ii), Q.5(i), Q.10(i), Exercise 7.7: Q.3,6, Exercise 7.8: Q.3,8
Homework: Exercise 7.1: Q.1(vi,ix), Q.2(v,viii,x), Exercise 7.2: Q.1(i,iii), Q.2(i,iii), Q.3,4,6,10,11, Exercise 7.3: Q.1(iii), Q.3,11, Exercise 7.4: Q.1(i,iii), Q.2(ii,iii), Q.3(i), Q.4,10, Exercise 7.5: Q.3(i), Q.5(ii), Q.10(ii), Exercise 7.7: Q.2,5, Exercise 7.8: Q.4,9 CHAPTER 8: MATHEMATICAL INDUCTION AND BINOMIAL THEOREM Classwork: Example 6: (pg.262), Exercise 8.1: Q.2,4,13,20, Example 2: (pg.269), Example 5: (pg.272), Exercise 8.2: Q.1(i), Q.2(ii), Q.7(i), Example 2: (pg.276), Example 4: (pg.278), Exercise 8.3: Q.1(ii,vi,viii), Q.2(vi.ix), Q.4(iv,vi), Q. 9 Homework: Exercise 8.1: Q.1,3,5,7,14,24, Exercise 8.2: Q.1(ii,vi), Q.2(i,iii), Q.6(i), Q.9(i), Q.10(i,ii), Exercise 8.3: Q.1(i,iii,iv,v), Q.2(i,iii), Q.3(i,ii), Q.4(i,ii), Q.5,7,11,12,13 CHAPTER 9: FUNDAMENTALS OF TRIGONOMETRY
Classwork: Example 4 \& 5: (pg.290), Exercise 9.1: Q.1(vi,xvi), Q.2(viii), Q.5(i), Q.13,

Fundamentals Identities (pg.297), Exercise 9.2: Q.3(iv,v), Q.4(ii), Q.8, Exercise 9.3: Q.1(ii,iii), Q.2(ii), Q.3(iii), Example 1-4: (pg.3,10\&11),
Exercise 9.4: Q.2,4,8,11,14,21
Homework: Exercise 9.1: Q.1(ix,xii,xiii), Q.2(ii,vi,x,xii,xv), Q.3, Q.4(i), Q.5(ii), Q.6(i), Q.7,11,15, Exercise 9.2: Q.3(i,vi), Q.4(i,v), Q.5,6, Exercise 9.3: Q.1(i,iv), Q.2(i), Q.3(i,ii), Q.4, Q.5(iv,vii), Q.6(v,ix), Exercise 9.4: Q.5,6,7,9,10,12, 13,15,20

## CHAPTER 10: TRIGONOMETRIC IDENTITIES

Classwork: Example 2: (pg.320), Exercise 10.1: Q.1(ii), Q.2(v), Q.3(iii), Q.4(i),
Exercise 10.2: Q.1(iii,vi), Q.3(ii), Q.7(ii), Q.11, Example 1: (pg.330),
Exercise 10.3: Q.1(ii), Q.3,13, Example 2: (pg.334), Example 3 \& 5: (pg.335),
Exercise 10.4: Q.1(ii,viii), Q.2(ii), Q.3(iii)
Homework: Exercise 10.1: Q.1(v,vi), Q.2(iii,ix), Q.3(i,ii,iv), Q.5(i,iii,iv),
Exercise 10.2: Q.1(i,vii), Q.2(iv,v), Q.4(i,iii,v), Q.5, Q.7(i), Q.10(i),
Exercise 10.3: Q.1(i), Q.2,6,8,9,11, Exercise 10.4: Q.1(i,iii,iv,v), Q.2(v,vi), Q.3(ii), Q. 4
CHAPTER 11: FUNDAMENTALS OF TRIGONOMETRY
Classwork: Exercise 11.1: Q.2,7,9
Homework: Exercise 11.1: Q.3,5,7,10,15

## CHAPTER 12: APPLICATION OF TRIGONOMETRY

Classwork: Exercise 12.1: Q.1(i,ix), Q.2(ii), Exercise 12.2: Q.2,5, Exercise 12.3: Q.1,5,
Exercise 12.4: Q.1, Exercise 12.5: Q.1,5,8, Exercise 12.6: Q.1,8, Exercise 12.7: Q.1(ii), Q.2(ii), Q.3(iii), Q.5, Proof (pg.379), Example 1: (pg.381), Example 3: (pg.383),

Exercise 12.8: Q.1(ii), Q.3(ii), Q.5(ii), Q.6(ii), Q.7(ii), Q. 11
Homework: Exercise 12.1: Q.1(iii,v), Q.2(i,vi), Exercise 12.2: Q.3,4,
Exercise 12.3: Q.3,6,9, Exercise 12.4: Q.3,5, Exercise 12.5: Q.3,4,7,10,
Exercise 12.6: Q.2,6,7,10, Exercise 12.7: Q.1(i), Q.2(i), Q.3(i), Q.4,
Exercise 12.8: Q.1(i), Q.3(iii), Q.5(iv), Q.6(i), Q.7(i), Q. 12

## CHAPTER 13: INVERSE TRIGONOMETRIC FUNCTIONS

Classwork: Example 2: (pg.390), Example 4: (pg.396), Exercise 13.1: Q.1(iii,ix), Q.2(ii), Q.3(i,v,ix), Exercise 13.2: Q.3,11,14,19

Homework: Exercise 13.1: Q.1(iv,v,vi), Q.2(i,iii), Q.3(iii,iv,vii),
Exercise 13.2: Q.1,2,6,12,17,18
CHAPTER 14: SOLUTIONS OF TRIGONOMETRIC EQUATIONS
Classwork: Example 1-3: (pg.401\&402), Example 1,2,4,5: (pg.403,405 \& 406), Q.14,
Q.1(i,iii), Q.2(ii,iv), Q.4,6

Homework: Exercise 14: Q.1(ii,iv), Q.2(i,iii), Q.3,5

## BIOLOGY-11

## Chapter No./ Name / Topics / Exercise Q(s)/ Textbook Pages (s)

## CHAPTER 1: INTRODUCTION

Biology and some major fields of specialization, Biological method, Biology and the service of mankind (excluding the subtopics "Disease Control", "Preventive measures",
"Vaccination and Immunization", and "Drug Treatment/ Gene therapy") (Pg. 1-13)
Practicals: No practical

## Questions:

Classwork: Fill in the blanks(i-iii, ix), True and false(No), Multiple choice questions (i,iv)
Homework: Short questions (i-iv), Extensive questions (i, iv, v)

## CHAPTER 2: BIOLOGICAL MOLECULES

Introduction to biochemistry, Importance of water, Carbohydrates (excluding the subtopics "monosaccharides", "oligosaccharides", "polysaccharides"), Lipids (excluding the subtopics "acylglycerols", "waxes", "phospholipids", "terpenoids"), Proteins, Structure of proteins, Nucleic acids (excluding the subtopics "DNA" and "RNA") (Pg. 17-31)

## Practicals

1. Identification of biochemical from biological materials.
2. Iodine test for starch
3. Benedict's test for reducing sugars
4. Millon's test for Proteins/Biuret test for proteins
5. Sudan III test for fats and oils and emulsion test

## Questions:

Classwork: Fill in the blanks (i, ii), True and false (i), Multiple choice questions (iv)
Homework: Short questions (ii, iv and v), Extensive questions (i, iii)
CHAPTER 3: ENZYMES
Introduction, Characteristics of enzymes, Mechanism of enzyme action (catalysis), Inhibitors
Irreversible inhibitors, Reversible inhibitors (competitive \& non-competitive inhibitors)
(Pg. 37-43)

## Practicals:

1. Study of starch break down in germinating gram seeds.

## Questions:

Classwork: Fill in the blanks (i-v), True and false (i-v), Multiple choice questions (No)
Homework: Short questions (i, iii-v), Extensive questions; (1, 3, 4)
CHAPTER 4: THE CELL
Structure of a generalized cell, Plasma membrane, Cell wall, Cytoplasm, Endoplasmic
reticulum, Ribosomes, Golgi apparatus, Lysosomes, Vacuoles, Cytoskeleton, Centriole, Mitochondria, Plastids (Chloroplasts, Chromoplasts, Leucoplasts), Nucleus (complete topic) Prokaryotic and eukaryotic cell (Pg. 48-64)

## Practicals:

1. Study of animal cells (frog's epithelium cell, frog's buccal cavity cells) and plant cells (mesophyll cells, leaf epidermis cells, onion epidermis cells) by staining with safranin, acid fuchsin, methylene blue, eosine

## Questions:

Classwork: Fill in the blanks (i-v), True and false (i-v), Multiple choice questions (i-vi)
Homework: Short questions (i-xi), Extensive questions (i, v)

## CHAPTER 5: VARIETY OF LIFE

Introduction, Nomenclature, Two to five kingdom classification systems, Viruses (excluding the introductory paragraphs), Characteristics, Structure, Life cycle of bacteriophages, Some viral diseases: small pox, herpes, influenza, mumps and measles, polio, AIDS, Hepatitis (Pg. 67-80)
Practicals: No practical

## Questions:

Classwork: Fill in the blanks (i-x), Multiple choice questions (i-xiv)
Homework: No Short question, No extensive question

## CHAPTER 6: KINGDOM PROKARYOTAE (MONERA)

Structure of bacteria, Size, Shape of bacteria, Bacterial cell structure (complete topic page 86 to 89), Nutrition of bacteria, Respiration in bacteria, Growth and Reproduction, Control of bacteria (Physical methods, Chemical methods), Use and misuse of antibiotics, Characteristics of Cyanobacteria (Pg.84-94)

## Practicals:

1. Laboratory safety techniques and use of microscope and measurement of microscopic objects by micrometry.
2. Investigation of bacterial content of fresh and stale milk.
3. Study of Nostoc from fresh material and prepared slides.

## Questions:

Classwork: Fill in the blanks (i-vi, vii), Multiple choice questions (i-vi)
Homework: Short questions (i a, b, ii-ix), Extensive questions (i-iii, v)

## CHAPTER 7: THE KINGDOM PROTISTA (OR PROTOCTISTA)

Introduction, Major groups of Protista, Protozoa: Animal-like protists, Amoebae, Zooflagellates
Ciliates, Algae: Plant-like protists, Euglenoids, Brown algae, Red algae, Green algae, Importance of algae, Fungus-like protists, Slime molds, Water molds (Pg. 99-111)

## Practicals:

1. Identification of Chlorella, Paramecium, Amoeba, Entamoeba, Plasmodium (malarial parasite) Euglena, Volvox, Ulothrix and Ulva from fresh materials or prepared slides.

## Questions:

Classwork: Fill in the blanks (i, ii, v-viii)
Homework: Short questions (i, iv, v), Extensive questions (i-ix)
CHAPTER 8: FUNGI
Introduction. The body of fungus, Nutrition in fungi, Reproduction, Asexual reproduction, Sexual reproduction, Classification of fungi, Zygomycota, Ascomycota,
Basidiomycota, Deuteromycota, Importance of fungi, Ecological importance, Commercial importance, Economic gains due to fungi, Economic losses due to fungi (Pg. 113-128)

## Practicals:

1. Study of yeast, Ustilago tritici and Pencillium from fresh materials and slides.

## Questions:

Classwork: Multiple choice questions (i-viii)
Homework: Short Questions (i-x), Extensive questions (i-viii)

## CHAPTER 9: KINGDOM PLANTAE

Classification of Plantae, Division Bryophyta, Adaptation to land habitat, Division
Tracheophyta, Evolution of leaf, Evolution of seed habit, Class Gymnospermae (excluding the subtopic "Pinus - life cycle"), Class Angiospermae, Life cycle of an angiospermic plant, Seed formation, double fertilization, Classification of angiosperms (excluding the topic and subtopics of "Angiospermic families") (Pg. 131-153)

## Practicals:

1. Examination of Marchantia and Funaria (external morphology) from fresh material and of sex organs from prepared slides.
2. Study of Pinus: male and female cones from fresh or preserved materials.

## Questions:

Classwork: Fill in the blanks (i-ix), Multiple Choice Questions (i-iv)
Homework: Short Questions (ii b, iv, vii), Extensive questions (ii-vi)

## CHAPTER 10: KINGDOM ANIMALIA

Introduction, Grade Radiata, Grade Bilateria, Diploblastic and triploblastic organization, Acoelomates, pseudocoelomates, coelomates , Series proterostomia \& Series dueterostomia, Phylum Porifera, Phylum Coelenterata (excluding the subtopic "Polymorphism"), Phylum Platyhelminthes (excluding the subtopics "infestation" and "disinfestation"), Adaptation for parasitic mode of life, Aschelminthes (Phylum Nematoda), Phylum Annelida (excluding the subtopics of classes "Polychaeta", "Oligochaeta", and "Hirudinea"), Phylum Arthropoda (excluding the subtopics of classes "Crustacea", "Insecta", "Arachnida", and "Myriapoda"), Metamorphosis, Economic importance of arthropods, Phylum Mollusca (excluding the subtopics of classes "Gastropoda", "Bivalvia" and "Cephalopoda"), Economic importance of Mollusca, Phylum Echinodermata; Echinodermata / Affinities, Phylum Chordata, Sub-phylum Vertebrata , Class Chondrichthyes, Class Osteichthyes (excluding the subtopic
"adaptations for aquatic life, Class Amphibia, Class Reptilia, Class Aves; Characters of Birds, Class Mammalia, Sub-class Prototheria, Sub-class Metatheria, Sub-class Eutheria (Pg. 167-203)

## Practicals:

1. Exposure of respiratory system of frog.

## Questions:

Classwork: Fill in the blanks (i-x), Multiple choice questions (i, ii, iv, v, vi, vii)
Homework: Extensive questions (i, ii, vii, viii)

## CHAPTER 11: BIOENERGETICS

Introduction, Photosynthesis, Photosynthetic reactants and products, Water and photosynthesis, Photosynthetic pigments (Chlorophyll, Carotenoids), Reactions of photosynthesis, Light dependent reactions, Non-cyclic phosphorylation, Cyclic phosphorylation, Chemiosmosis, Light independent (or dark) reactions, Respiration, Anaerobic and aerobic respiration, Anaerobic Respiration (alcoholic fermentation, lactic acid fermentation), Cellular Respiration, Glycolysis, Pyruvic acid oxidation, Krebs cycle, Respiratory chain (Pg. 206-228)

## Practicals:

1. Extraction and chromatography of leaf chloroplast pigments.

## Questions:

Classwork: Fill in the blanks (i-v), Multiple choice questions (i-iii)
Homework: Extensive questions (i-iii, vii-x, xii-xiii)
CHAPTER 12: NUTRITION
Methods of plant nutrition (saprophytic nutrition, parasitic nutrition, symbiotic nutrition, nutrition in insectivorous plants), Digestion and absorption, Digestion in Man, Digestion in oral cavity, Digestion in stomach, Digestion in small intestine, Absorption of food, Large intestine, Some common diseases related to nutrition (Dyspepsia, Food poisoning, Obesity, Ulcer) (Pg. 235-256)

## Practicals:

1. Study of T.S of liver, stomach, small intestine and large intestine of man prepared slides.

## Questions:

Classwork: Fill in the blanks (i-viii), True and false (i-iii), Multiple choice questions (i-iii, vi-vii, ix)
Homework: Short questions (i, iii, iv), Extensive questions (i-iv, ix-xii, xvi-xv)
CHAPTER 13: GASEOUS EXCHANGE
Advantages and disadvantages of gas exchange in air and water, Gaseous exchange in plants, Properties of respiratory surfaces, Respiration in man, Air passage ways, Inspiration, Expiration, Transport of respiratory gases, Transport of oxygen, Transport of carbon dioxide, Carbon dioxide concentration in arterial and venous blood, Respiratory disorders (Cancer, Tuberculosis, Asthma), Role of respiratory pigments, Lung capacities (Pg. 259-275)

## Practicals: No practical

## Questions:

Classwork: Fill in the blanks (ii-v), True and false (i-ii, v), Multiple choice questions (i, iii-v)
Homework: Short questions (i-v), Extensive questions (i, v-vii)

## CHAPTER 14: TRANSPORT

Transport in plants - Uptake and transport of minerals and water, Mineral absorption by roots, Processes involved in absorption by roots, Uptake of water by roots, Apoplast pathway, Symplast pathway, Vacuolar pathway, Ascent of sap, Cohesion tension theory, Mechanism of transpiration pull in cohesion and tension theory, Root pressure, Imbibition, Bleeding, Opening and closing of stomata, Mechanism of phloem translocation/transport, Diffusion, Pressure flow theory, Circulatory system, Characteristics of circulatory system, Open and closed circulatory system, Comparison of open and closed circulatory system, Transport in man, The circulatory fluid - the blood, Functions of blood, Disorders (blood cancer, thalassaemia), Pumping organ - The heart, Structure and action, The cardiac cycle, Mechanism of heart Excitation and Contraction Electrocardiogram, Artificial pace-maker, Blue babies, Blood vessels, Arteries, Capillaries, Veins, Blood pressure and rate blood flow, Hypertension, Thrombus formation and hypertension, Heart attack, Stroke, Hemorrhage, Lymphatic system, Immunity, Types of immunity (Pg. 278-327)

## Practicals:

1. Demonstration of osmosis in living plant cells, (manifested by plasmolysis and deplasmolysis) of onion cells or spirogyra.
2. Study from prepared slides of internal structure of monocot. and dicot. root, stem and leaf.
3. Investigation of stomatal distribution (using clear nail varnish or epidermis peel)
4. Study of prepared, stained slide of human blood including identification of phagocytes and lymphocytes and preparation of slide of blood smear of frog.
5. Study of structure of artery, vein, capillary from their T.S. (Prepared Slides).
6. Study of effect of acetylcholine and adrenaline on the heartbeat of frog.
7. Exposure of blood circulatory system of frog (heart and main blood vessels).
8. Measurement of blood pressure during rest and alter exercise with B.P apparatus.

Questions:
Classwork: Fill in the blanks (i-vi), Multiple choice questions (i-ix), True and false (i-v)
Homework: Extensive questions (i-v, vii, ix)

## COMPUTER SCIENCE-11

## UNIT 1: BASICS OF INFORMATION TECHNOLOGY

Overview (Pg.1,2), Hardware and Software (Pg. 2-4), System Software VS Application Software (Pg. 15-16), Basic Units of Data Storage (Pg. 16-17), Word (Pg. 17-18), System Development (Pg. 18-22)
Classwork: Q. 1 (i, ii, iii, vii ) (Pg.22), Q.4, 13 (Pg.24)
Homework: Q.5, 15 (Pg. 24)

## UNIT 2: INFORMATION NETWORKS

Overview (Pg. 25), Workgroup Computing (Pg. 25-26), Internet (Pg.27-29), Components of network (Pg. 29-31), LAN vs WAN (Pg. 32-33), Network Standards (Pg. 35), Network Topologies (Pg. 35-38), Open System Interconnection (OSI) Model (Pg. 37-38)
Classwork: Q. 1 (i, iii- x), Q.2(i- viii) (Pg. 39), Q.3(ii-vi, viii-x) (Pg. 40), Q.4,5,8 (Pg.40)
Homework: Q.6, 11 (Pg. 40)

## UNIT 3: DATA COMMUNICATIONS

Overview (Pg. 41), Components of Data Communication (Pg.42), Signals (Pg.42-43),
Types of Data (Pg. 43), Types of Data Transmission (Pg. 46-53)
Classwork: Q. 1 (i- iv, vii, xi-x) (Pg. 56), Q.2(i, ii, v) (Pg. 55-56), Q.3(iii, v-vii) (Pg. 56), Q.4, 6, 9 (Pg. 56)

Homework: Q.7, 10 (Pg. 56)
UNIT 4: APPLICATIONS AND USES OF COMPUTER
Overview (Pg. 57), Uses of Computers in different Fields (Business, E-Commerce,
Computer Added Design, Simulations only) (Pg. 57-67)
Class Work: Q.5, 6 (Pg. 70)
Home Work: Q. 10 (Pg. 70)

## UNIT 5: COMPUTER ARCHITECTURE

Overview (Pg.71-76), Bus Interconnection (Pg.76-78), The I/O Unit (Pg.78-81),
Instruction Format (Pg. 82-84), Operating Systems (Pg. 85-86), The Translators and Their Functions (Pg. 87)
Classwork: Q.1, 2, 3(Pg. 88-89), Q.4, 5, 7, 10, 11 (Pg. 90)
Homework: Q.6, 8, 9, 14 (Pg. 90)

## UNIT 6: SECURITY, COPYRIGHT AND LAW

Overview (Pg.91), Virus and Antivirus issues (Pg. 91-94), Data Security (Pg. 94-97)
Classwork: Q. 1 (i- vi ) (Pg. 100 ), Q. 2 (Pg. 100-101), Q.3(i- iv, vi- viii) (Pg. 101-102), Q.4, 5, 6 (Pg.102)

Homework: Q.9, 10, 11 (Pg. 102)

## UNIT 7: WINDOWS OPERATING SYSTEM

Overview (Pg.103), Types of Operating System (Pg. 103-105), Starting to use Windows Operating System ( Objects of Windows Operating system, Features of Windows only)
(Pg. 105-107, 108-109), Disk Management (Pg.109-110)
Classwork: Q.1(i-vi, viii, x) (Pg.113), Q.2(Pg.113), Q.3(i, ii, v, viii -x) (Pg.114), Q.4,6,8(Pg.114)

Homework: Q.5, 9, 10 (Pg. 114)

## UNIT 8: WORD PROCESSING

Overview (Pg. 115), What is Word Processor? (Pg. 115-116), A Simple Word Processor (Pg. 116), Full Featured Word Processor (Pg.116-118)
Classwork: Q.2(i, ii,) (Pg. 131), Q. 5 (Pg. 132)
Homework: Q. 6 (Pg. 132)

## UNIT 9: SPREADSHEET SOFTWARE

Overview (Pg. 133), Features of Spreadsheet Software (Pg. 133), Basics of Worksheet (Pg.135-137), Working with Formulas (Pg. 137-138), Functions (Pg.138-139), Introducing Charts (Pg. 142-143)
Classwork: Q. 1 (i- vi, viii-x) (Pg. 144-145), Q.2(Pg. 145), Q.3(i- iv, vi-x) (Pg. 145), Q.4, 5 (Pg.146)
Homework: Q.8, 9 (Pg. 146)

## UNIT 10: FUNDAMENTAL OF THE INTERNET

Overview (Pg.147), Addressing Schemes (Pg.148-149), Web Browsing (URL (Uniform
Resource Locator) only) (Pg. 149,150), Email (Email Address only) (Pg. 152),
Newsgroups (Pg. 152)
Class Work: Q. 1 (iii, viii, ix) (Pg. 153),Q. 2 (Pg. 153), Q.3(i, iii, vi, vii, ix, x) (Pg. 154)
Home Work: Q. 6 (Pg. 154)
Note:
Objective and subjective type papers should be given from the retained topics and exercise questions.

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