

Contents

● Previous Year's Solved Paper

PHYSICS

● General Information

UNIT-1 General Physics

I. Units and Dimensions	10
II. Motion in Two Dimensions	11
III. Motion in a Straight Line	13
IV. Uniform Circular Motion and Projectile Motion	14
V. Newton's Laws of Motion	16
VI. Work, Power and Energy	18
VII. Rotatory Motion of Rigid Bodies	18
VIII. Universal Gravitation	20
IX. General Properties of Matter	21

UNIT-2 Heat

I. Isothermal and Adiabatic Processes	25
II. Transmission of Heat	26

UNIT-3 Vibrations, Waves and Sound

I. Simple Harmonic Motion	27
II. Wave Motion	28
III. Principle of Superposition	29
IV. Doppler's Effect	30

UNIT-4 Light

I. Wave Nature of Light	32
II. Reflection and Refraction of Light on Spherical Surfaces	34
III. Optical Instruments and Defects of Vision	37

3-9 UNIT-5 Electricity and Magnetism

I. Electric Field and Potential	39
II. Capacitor	41
III. Electrical Conduction	42
IV. Simple Circuit	44
V. Electromagnetism	45
VI. Magnetism	46
VII. Electromagnetic Induction	49
VIII. Alternating Current	50

UNIT-6 Modern Physics

I. Cathode Rays and Photo-electric Effect	53
II. Atomic Model and Hydrogen Spectrum	54
III. Nuclear Structure	57
IV. Radioactivity	58
V. X-Rays	59
VI. Semi-conducting Devices	60

UNIT-7 Our Universe

● Objective Questions

UNIT-1 General Physics	67-138
UNIT-2 Heat	139-153
UNIT-3 Vibrations, Waves and Sound	154-178
UNIT-4 Light	179-212
UNIT-5 Electricity and Magnetism	213-254
UNIT-6 Modern Physics	255-281
UNIT-7 Our Universe	282-282

CHEMISTRY

● General Information	2–14	8. Thermodynamics and Thermochemistry	70–75
List of the Atomic Masses of the Elements	2	9. Chemical Kinetics	76–81
Electrochemical Series	3	10. Electro Chemistry	82–89
Prefix for SI Units	3	11. Surface Chemistry	90–94
Important Constant	4		
Conversion Factors	4	INORGANIC CHEMISTRY	
Important Compounds and their Formulae	4	12. Principles of Metallurgical Operations	97–100
Some Eminent Chemists and their Discoveries	7	13. Chemical Periodicity	101–104
Some Important Alloys, their Compositions and Uses	9	14. Comparative Study of Elements (Hydrogen and Alkali Metals)	105–119
Important Ores	10	15. Transition Elements (<i>d</i> -Block Elements)	120–124
Some Common Bond Lengths	11	16. Co-ordination Compounds	125–128
Hardness of Minerals	12	17. Chemical Analysis	129–134
Different Absorbent	12		
Name of Some Important Acids and their Salts	12	ORGANIC CHEMISTRY	
Nobel Prize Winners : Chemistry	13	18. General Organic Chemistry	136–148
		19. Alkanes, Alkenes, Alkynes, Petroleum and Benzene	149–157
PHYSICAL CHEMISTRY		20. Halogen Compounds, Alcohols and Phenols	158–165
1. Structure of Atom	16–24	21. Carbonyl Compounds, Carboxylic Acids and Amines	166–176
2. Chemical Bond	25–32	22. Polymers	177–180
3. Solutions	33–41	23. Bio-molecules	181–185
4. Solid State	42–46	● Some Miscellaneous Facts	186–188
5. Nuclear Chemistry	47–54		
6. Chemical Equilibrium	55–61		
7. Ionic Equilibrium	62–69		

BOTANY

● General Information	1–24	● Physiology	106–128
● The Cell	3–19	● Enzymes	129–142
● Mendelism	20–33	● Ecosystem	143–156
● Prokaryotes	34–44	● Economic Botany	157–169
● Classification of Plant Kingdom	45–75	● Food Preservation	170–174
● Microsporogenesis in Angiosperms	76–92	● Plant Breeding	175–184
● Tissues and Tissue System	93–105		

ZOOLOGY

● General Information	3–31	● Skeleton, Joints and Muscles	70–78
Major Sub-divisions of Biology	3	● Endocrine System	79–89
Some Important Sub-divisions of Zoology	3	● Vitamins and Minerals in Food	90–97
Important Scientific Discoveries	6	Function as Regulators	
Important Research Institutes	8	● Economic Zoology–Silk Industry, Apiculture, Lac Industry, Poultry, Fisheries and Pearl Industry	98–106
Important Abbreviations	8	● Reproductive System	107–118
Some Additional Abbreviations	9	● Growth, Repair and Aging, Amniocentesis	119–124
Biosphere Reserves in India	9	● Chromosomes, Types of Chromosomes, Human Karyotype and Chromosomal Abnormalities and Syndromes. Hormonal, Chromosomal and Genetic Balance of Sex Determination. Sex Linkage and Sex Linked Inheritance in Man	125–142
National Parks and Wild-life Sanctuaries in India	10	● Blood Groups and their Significance, Blood Bank	143–146
Endangered Animal Species in India	13	● Tissue Culture and Genetic Engineering	147–150
Important Animals–Their Zoological & Common Names	15	● Mutation	151–154
Disorders due to Vitamin Deficiencies	19	● Human Population	155–159
Important Minerals and their Physiological Roles in Man	19	● Classification	160–169
Important Hormonal Diseases	20	● Origin of Life, Evolution and Evolution of Man	170–182
Anomalies due to Chromosomal Aberration in Human	21	● Protozoan Diseases, Insect Carrying Diseases in Relation to Man, Cancer–Types and Cancer Cell	183–195
Communicable Diseases	22	● Wild-life Conservation	196–202
Important Vaccines	24	● Pesticides	203–207
Insect Vectors of Human Diseases	24		
Some Important Facts about Human Body	27		
Some Important Facts	29		
● Multicellularity–Structure and Function of Animal Tissues	32–45		
● Structure and Physiology of Different Organ System of Human Body	46–64		
● Receptors	65–69		
