

Part-II (Class-X)	Marks: 60	Time: 2:00 Hours
Unit-10 :	SIMPLE HARMONIC MOTION AND WAVES	
10.1	Simple Harmonic Motion	
	10.1.1 Motion of Mass Attached to a Spring	
	10.1.2 Ball and Bowl System	
	10.1.3 Motion of a Simple Pendulum	
10.2	Damped Oscillations	
10.3	Wave Motion	
10.4	Types of Mechanical Waves	
10.5	Waves As Carriers of Energy	
10.6	Ripple Tank	
Unit-11 :	SOUND	
11.1	Sound Waves	
11.2	Characteristics of Sound	
11.3	Reflection of Sound	
11.4	Speed of Sound	
11.5	Noise Pollution	
11.6	Audible Frequency Range	
11.7	Ultrasound	
Unit-12 :	GEOMETRICAL OPTICS	
12.1	Reflection of Light	
	12.1.1 Laws of Reflection	
	12.1.2 Types of Reflection	
12.2	Spherical Mirrors	
12.3	Image Location by Spherical Mirror Formula	
12.4	Refraction of Light	
12.5	Total Internal Reflection	
12.6	Refraction Through Prism	
12.7	Lenses	
12.8	Refraction Through Lenses	
12.9	Formation of Image by Lens Equation	
12.10	Applications of Lenses	
12.11	Simple Microscope	
12.12	Compound Microscope	
12.13	Telescope	
12.14	The Human Eye	
12.15	Defects of Vision	
Unit-13 :	ELECTROSTATICS	
13.1	Production of Electric Charges	
13.2	Electrostatic Induction	
13.3	Electroscope	
13.4	Coulomb's Law	
13.5	Electric Field and Electric Field Intensity	
13.6	Electrostatic Potential	
13.7	Capacitors and Capacitance	
13.8	Different Types of Capacitors	
13.9	Applications of Electrostatics	
13.10	Some Hazards of Static Electricity	
Unit-14 :	CURRENT ELECTRICITY	
14.1	Electric Current	
14.2	Potential Difference	
14.3	Electromotive Force (e.m.f)	
14.4	Ohm's Law	
14.5	V-I Characteristics of Ohmic and Non Ohmic Conductors	
14.6	Specific Resistance (Resistivity)	

- 14.7 Conductors
- 14.8 Insulators
- 14.9 Combination of Resistors
- 14.10 Electrical Energy and Joule's Law
- 14.11 Electric Power
- 14.12 Direct Current and Alternating Current
- 14.13 Hazards of Electricity
- 14.14 Safe Use of Electricity in Homes

Unit-15 : ELECTROMAGNETISM

- 15.1 Magnetic Effects of a Steady Current
- 15.2 Force on a Current – Carrying Conductor Placed in a Magnetic field
- 15.3 Turning Effect on a Current-Carrying Coil in a Magnetic Field
- 15.4 D.C. Motor
- 15.5 Electromagnetic Induction
- 15.6 Direction of Induced e.m.f. – Lenz's Law
- 15.7 A.C. Generator
- 15.8 Mutual Induction
- 15.9 Transformer
- 15.10 High Voltage Transmission

Unit-16 : BASIC ELECTRONICS

- 16.1 Thermionic Emission
- 16.2 Investigating the Properties of Electrons
- 16.3 Cathode-Ray Oscilloscope (C.R.O)
- 16.4 Analogue and Digital Electronics
- 16.5 Basic Operations of Digital Electronics-Logic Gates
- 16.6 AND Operation
- 16.7 OR Operation
- 16.8 NOT Operation
- 16.9 NAND Gate
- 16.10 NOR Gate
- 16.11 Uses of Logic Gates

Unit-17 : INFORMATION AND COMMUNICATION TECHNOLOGY

- 17.1 Information and Communication Technology
- 17.2 Components of Computer Based Information System (CBIS)
- 17.3 Flow of Information
- 17.4 Transmission of Electrical Signal Through Wires
- 17.5 Transmissions of Radio waves Through Space
- 17.6 Transmission of Light Signals Through Optical Fibers
- 17.7 Information Storage Devices
 - Primary Memory
 - Audio and Video Cassettes
 - Hard Disk
 - Flash Drive
 - Data Management
 - Browsers
 - Electronic Mail
 - Secondary Storage Devices
 - Magnetic Disks
 - Compact Disc (CDs)
 - Application of Computer
 - Internet Services
 - How to Search the Web

Unit-18 : ATOMIC AND NUCLEAR PHYSICS

- 18.1 Atom and Atomic Nucleus
- 18.2 Natural Radioactivity
- 18.3 Background Radiations
- 18.4 Nuclear Transmutations
- 18.5 Half-Life and Its Measurement
- 18.6 Radioisotopes and their Uses

- 18.7 Fission Reaction
- 18.8 Nuclear Fusion
- 18.9 Hazards of Radiation and Safety Measures

LIST OF PRACTICALS FOR CLASS-IX (PART-I)

1. Measure the area of cross-section of a solid cylinder by measuring its diameter with Vernier calipers.
2. Determine the volume of a solid cylinder by measuring its length and diameter.
3. Measure the thickness of a metal strip or a wire by using a screw gauge.
4. Find the acceleration of a ball rolling down an inclined angle iron by drawing a graph between $2S$ and t^2 .
5. Find the value of 'g' by free fall method.
6. Investigate the relation between force of limiting friction and normal reaction to find the co-efficient of sliding friction between a wooden block and horizontal surface.
7. Find the force of limiting friction by rolling a roller on a horizontal surface.
8. Determine the value of 'g' by Atwood's machine.
9. Determine the resultant of two forces graphically by using a Horizontal force table.
10. Find the unknown weight of an object by using vector addition of forces.
11. Verify the principle of moments by using a metre rod balanced on a wedge.
12. Find the unknown weight of an object by using principle of moments.
13. Find the tension in the strings by balancing a metre rod on the stands.
14. Study the effect of length of simple pendulum on its time period and hence, find the value of 'g' by calculation.
15. Prove that time period of a simple pendulum is independent of mass of the pendulum.
16. Prove that time period of a simple pendulum is independent of amplitude of vibration.
17. Determine the relationship between load and extension (Helical spring) by drawing a graph.
18. Find the density of a body heavier than water by Archimedes principle.
19. Find the density of a liquid using a disposable syringe.
20. Find the specific heat of a given solid by the method of mixture using polystyrene cup.
21. Draw a graph between temperature and time when ice is converted into water and then to steam by slow heating.
22. Find the latent heat of fusion of ice.

LIST OF PRACTICALS FOR CLASS-X (PART-II)

1. Verify the laws of refraction by using a glass slab.
2. Find the refractive index of water by using concave mirror.
3. Determine the critical angle of glass using a semi-circular glass slab and a light ray box or by prism.
4. Trace the path of a ray of light through a glass prism and measure the angle of deviation.
5. Find the focal length of a convex lens by parallax method.
6. Set up a microscope.
7. Set up a telescope.
8. Verify Ohm's law (using wire as conductor).
9. Study resistors in series circuit.
10. Study resistors in parallel circuit.
11. Find the resistance of galvanometer by half deflection method.
12. Trace the magnetic field using a bar magnet.
13. Trace the magnetic field due to a current carrying circular coil.
14. Verify the truth table of OR, AND, NOT, NOR and NAND gates.
15. Set up a NAND gate burglar Alarm.
16. Set up a NOT gate Fire Alarm.

Prescribed Book: Physics for Part – II (Class –X)

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