

PHYSICS

Part – I	60 Marks
Part – II	60 Marks
Practical	30 Marks
Total	150 Marks

Part-I (Class-IX)	Marks: 60	Time: 2:00 Hours
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UNIT-1 : PHYSICAL QUANTITIES AND MEASUREMENT

- 1.1 Physical and Non-Physical Quantities
- 1.2 Base and Derived Physical Quantities
- 1.3 International System of Units
- 1.4 Scientific Notation
- 1.5 Length Measuring Instruments
- 1.6 Mass Measuring Instruments
- 1.7 Time Measuring Instruments
- 1.8 Volume Measuring Instruments
- 1.9 Errors in Measurements
- 1.10 Uncertainty in a Measurement
- 1.11 Significant Figures
- 1.12 Precision and Accuracy
- 1.13 Rounding off the Digits

UNIT-2 : KINEMATICS

- 2.1 Scalars and Vectors
- 2.2 Rest and Motion
- 2.3 Types of Motion
- 2.4 Distance and Displacement
- 2.5 Speed of Velocity
- 2.6 Acceleration
- 2.7 Graphical Analysis of Motion
- 2.8 Gradient of a Distance-Time Graph
- 2.9 Speed-Time Graph
- 2.10 Gradient of a Speed-Time Graph
- 2.11 Area Under Speed-Time Graph
- 2.12 Solving Problems for Motion Under Gravity
- 2.13 Free Fall Acceleration

Unit-3 : DYNAMICS

- 3.1 Concept of Force
- 3.2 Fundamental Forces
- 3.3 Forces in a Free-Body Diagram
- 3.4 Newton's Laws of Motion
- 3.5 Limitations of Newton's Laws of Motion
- 3.6 Mass and Weight
- 3.7 Mechanical and Electronic Balances
- 3.8 Friction
- 3.9 Momentum and Impulse
- 3.10 Principle of Conservation of Momentum

Unit-4 : TURNING EFFECT OF FORCE

- 4.1 Like and Unlike Parallel Forces
- 4.2 Addition of Forces
- 4.3 Turning Effect of a Force
- 4.4 Resolution of Vectors
- 4.5 Determination of a Force from its Perpendicular Components
- 4.6 Principle of Moments
- 4.7 Centre of Gravity and Centre of Mass
- 4.8 Equilibrium
- 4.9 Conditions of Equilibrium

- 4.10 States of Equilibrium
- 4.11 Improvement of Stability
- 4.12 Application of Stability in Real Life
- 4.13 Centripetal Force

Unit-5 : WORK, ENERGY AND POWER

- 5.1 Work
- 5.2 Energy
- 5.3 Conservation of Energy
- 5.4 Sources of Energy
- 5.5 Renewable and Non-Renewable Sources
- 5.6 The Advantages and Disadvantages of Methods of Energy Production
- 5.7 Power
- 5.8 Efficiency

Unit-6 : MECHANICAL PROPERTIES OF MATTER

- 6.1 Deformation of Solids
- 6.2 Hooke's Law
- 6.3 Density
- 6.4 Pressure
- 6.5 Pressure in Liquids
- 6.6 Atmospheric Pressure
- 6.7 Measurement of Atmospheric Pressure
- 6.8 Measurement of Pressure by Manometer
- 6.9 Pascal's Law

Unit-7 : THERMAL PROPERTIES OF MATTER

- 7.1 Kinetic Molecular Theory of Matter
- 7.2 Temperature and Heat
- 7.3 Thermometers
- 7.4 Sensitivity, Range and Linearity of Thermometers
- 7.5 Structure of a Liquid-in-Glass Thermometer

Unit-8 : MAGNETISM

- 8.1 Magnetic Materials
- 8.2 Properties of Magnets
- 8.3 Induced Magnetism
- 8.4 Temporary and Permanent Magnets
- 8.5 Magnetic Fields
- 8.6 Uses of Permanent Magnets
- 8.7 Electromagnets
- 8.8 Domain Theory of Magnetism
- 8.9 Magnetisation and Demagnetisation
- 8.10 Applications of Magnets in Recording Technology
- 8.11 Soft Iron as Magnetic Shield

Unit-9 : NATURE OF SCIENCE

- 9.1 Scope of Physics
- 9.2 Branches of Physics
- 9.3 Interdisciplinary Nature of Physics
- 9.4 Interdisciplinary Research
- 9.5 Scientific Methods
- 9.6 Scientific Base of Technologies and Engineering

Prescribed Book: Physics for Part – I (Class –IX)

Authors: Professor (Rtd.) Muhammad Nisar

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