

Section A

- Mechanics
 - Distance and Displacement
 - Velocity
 - Uniform and Non-uniform Motion along a Straight Line
 - Acceleration
 - Distance-time and Velocity-time Graphs
 - Uniform Circular Motion
 - Newton's Laws of Motion
 - Momentum
 - Elementary Idea of Conservation of Momentum.
 - Kinetic and Potential Energy
 - Work and Power
 - Conservation of Energy
 - Pressure in Fluids, Pascal's Law
 - Wave Motion
 - Gravitation
 - Archimedes' Principle
 - Buoyancy
 - Elementary idea of Relative Density
- Thermal Physics
 - Thermal Expansion of Solids, Liquids, and Gases
 - Latent Heat
 - Conduction, Elementary Concepts of Convection and Radiation
 - Ideal Gas Laws
 - Specific Heats
- Optics
 - Rectilinear Propagation of Light
 - Ray Diagrams

- Reflection and Refraction
 - Mirror Formula and Magnification
 - Lens Formula and Magnification
 - Photoelectric Effect
 - Electrodynamics
 - Electric Circuits and Ohm's Law
 - Resistance of System of Resistors (Series and Parallel)
 - Heating Effects of Current
 - Electric Power
 - Magnetic Fields and Field Lines
 - Magnetic Field - Right-hand Thumb Rule
 - Field Lines
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Section B

- Mechanics
 - Kinematics in 1 and 2 Dimensions
 - Newton's Laws of Motion
 - Friction (Static and Dynamic)
 - Kinetic and Potential Energy
 - Work and Power
 - Conservation of Energy
 - Conservation of Momentum
 - Elastic and Inelastic Collisions
 - Gravitation
 - Dynamics of Rigid Bodies
 - Linear and Angular Harmonic Motions
 - Pressure in Fluids, Pascal's Law
 - Surface Energy and Surface Tension

- Streamline Flow
- Equations of Continuity
- Bernoulli's Theorems and its Applications
- Wave Motion
- Vibration of Strings and Air Columns
- Doppler Effect (Sound)
- Electrodynamics
 - Coulomb's Law
 - Electric Fields and Electric Potential
 - Gauss's Law and its Application in Simple Cases
 - Capacitance
 - Electric Current, Ohm's Law, Series and Parallel Arrangements of Resistors and Cells, Kirchoff's Laws (and Simple Applications)
 - Heating Effect of Current
 - Biot-Savart's Law and Ampere's Law
 - Lorentz Force
 - Magnetic Moment of a Current Loop
 - Electromagnetic Induction: Faraday's Law, Lenz's Law, RC, LC, and RL Circuits
- Thermal Physics
 - Thermal Expansion of Solids, Liquids, and Gases
 - Latent Heat
 - Conduction in 1 Dimension, Elementary concepts of Convection and Radiation
 - Newton's Law of Cooling
 - Ideal Gas Laws
 - Specific Heats
 - Isothermal and Adiabatic Processes
 - First Law of Thermodynamics

- Black Body Radiation (Absorptive and Emissive Powers): Kirchoff's Law, Wein's Displacement Law, Stefan Law
 - Optics
 - Rectilinear Propagation of Light
 - Reflection and Refraction
 - Thin Lenses
 - Wave Nature of Light: Huygens Principle, Interference
 - Modern Physics
 - Law of Radioactive Decay, Decay Constant, Half-life and Mean Life, Binding Energy and its Calculation, Fission and Fusion Processes
 - Photoelectric Effect
 - Bohr's Theory of Hydrogen-like Atoms
 - de Broglie Wavelength of Matter Waves
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Section C

- Mechanics
 - Newtonian Mechanics, Lagrangian Mechanics, Hamiltonian Mechanics
 - Rigid Body Dynamics
 - Simple Harmonic Oscillator
 - Central Forces
 - Special Relativity (Time Dilation, Length Contraction, Lorentz Transformation)
 - Noether's Theorem
 - Elementary Topics in Fluid Dynamics
- Electrodynamics
 - Gauss's Law, Coulomb's Law, Application of Gauss's Law in the Presence of Symmetries
 - Currents and AC and DC Circuits

- Solution of Laplace's Equations in Cartesian, Spherical, and Cylindrical Coordinates
- Multipole Expansion
- Ampere's Law
- Faraday's Law
- Continuity Equation
- Electromagnetic Waves and Poynting's Theorem
- Quantum Mechanics
 - Heisenberg's Formulation, Schrodinger's Formulation
 - Linear Algebra
 - Spin $\frac{1}{2}$ Systems
 - Angular Momentum Quantization and Addition
 - Perturbation Theory (Basics)
 - Fourier Transforms
 - Quantum Harmonic Oscillator
- Optics
 - Wave Properties
 - Superposition, Diffraction
 - Geometric Optics
 - Polarization
 - Doppler Effect
- Thermal Physics
 - Thermodynamic Processes, Equations of State
 - Ideal Gases, Kinetic Theory
 - Ensembles
 - Statistical Concepts and Calculation of Thermodynamic Quantities
 - Heat Transfer
 - Thermal Expansion

- Modern Physics
 - Bohr's Model
 - Energy Quantization
 - Black Body Radiation
 - X-Rays
 - Atoms in Electric and Magnetic Fields