

Physics Topic List

Chapter-wise topics for Class XI and Class XII, with book page references.

Class XI 15 chapters · book pages A1 – A278

No.	Chapter	Pages	Topics
1	Units and Measurements	A1 – A18	<ol style="list-style-type: none"> 1. Unit of Physical Quantities 2. Dimensions of Physical Quantities 3. Errors in Measurements 4. Miscellaneous (Mixed Concepts) Problems
2	Motion in a Straight Line	A19 – A30	<ol style="list-style-type: none"> 1. Distance, Displacement & Uniform Motion 2. Non-uniform Motion 3. Relative Velocity 4. Motion Under Gravity
3	Motion in a Plane	A31 – A42	<ol style="list-style-type: none"> 1. Vectors 2. Motion in a Plane with Constant Acceleration 3. Projectile Motion 4. Relative Velocity in Two Dimensions & Uniform Circular Motion
4	Laws of Motion	A43 – A64	<ol style="list-style-type: none"> 1. Ist, IInd & Illrd Laws of Motion 2. Motion of Connected Bodies, Pulley & Equilibrium of Forces 3. Friction 4. Circular Motion, Banking of Road
5	Work, Energy and Power	A65 – A88	<ol style="list-style-type: none"> 1. Work 2. Energy 3. Power 4. Collisions 5. Miscellaneous (Mixed Concepts) Problems
6	System of Particles and Rotational Motion	A89 – A130	<ol style="list-style-type: none"> 1. Centre of Mass, Centre of Gravity & Principle of Moments 2. Angular Displacement, Velocity and Acceleration 3. Torque, Couple and Angular Momentum 4. Moment of Inertia and Rotational K.E. 5. Rolling Motion 6. Miscellaneous (Mixed Concepts) Problems
7	Gravitation	A131 – A146	<ol style="list-style-type: none"> 1. Kepler's Laws of Planetary Motion 2. Newton's Universal Law of Gravitation 3. Acceleration due to Gravity 4. Gravitational Field and Potential Energy 5. Motion of Satellites, Escape Speed and Orbital Velocity 6. Miscellaneous (Mixed Concepts) Problems
8	Mechanical Properties of Solids	A147 – A154	<ol style="list-style-type: none"> 1. Hooke's Law & Young's Modulus 2. Bulk and Rigidity Modulus and Work Done in Stretching a Wire

No.	Chapter	Pages	Topics
9	Mechanical Properties of Fluids	A155 – A174	<ol style="list-style-type: none"> 1. Pressure, Density, Pascal's Law and Archimedes' Principle 2. Fluid Flow and Bernoulli's Principle 3. Viscosity and Terminal Velocity 4. Surface Tension, Surface Energy and Capillarity 5. Miscellaneous (Mixed Concepts) Problems
10	Thermal Properties of Matter	A175 – A188	<ol style="list-style-type: none"> 1. Thermometer & Thermal Expansion 2. Calorimetry and Heat Transfer 3. Miscellaneous (Mixed Concepts) Problems
11	Thermodynamics	A189 – A211	<ol style="list-style-type: none"> 1. First Law of Thermodynamics 2. Specific Heat Capacity and Thermodynamical Processes 3. Second Law of Thermodynamics
12	Kinetic Theory	A212 – A228	<ol style="list-style-type: none"> 1. Kinetic Theory of an Ideal Gas and Gas Laws 2. Speed of Gas, Pressure and Kinetic Energy 3. Degree of Freedom, Specific Heat Capacity, and Mean Free Path 4. Miscellaneous (Mixed Concepts) Problems
13	Oscillations	A229 – A248	<ol style="list-style-type: none"> 1. Displacement, Phase, Velocity and Acceleration in S.H.M. 2. Energy in Simple Harmonic Motion 3. Time Period, Frequency, Simple Pendulum and Spring Pendulum
14	Waves	A249 – A268	<ol style="list-style-type: none"> 1. Basic of Mechanical Waves, Progressive and Stationary Waves 2. Vibration of String and Organ Pipe 3. Beats, Interference and Superposition of Waves 4. Miscellaneous (Mixed Concepts) Problems
15	Experimental Skills - XI	A269 – A278	<ol style="list-style-type: none"> 1. Vernier calipers – its use to measure the internal & external diameter and depth of a vessel; To determine thickness/diameter of thin sheet/wire with the help of screw gauge 2. Measure the mass of a given object by the principle of moments using metre scale; Determination of Young's modulus of elasticity of the material of a metallic wire; Calculation of surface tension of water by capillary rise and effect of detergents; Calculation of co-efficient of viscosity of a given viscous liquid; Measurement of specific heat using method of mixtures; Calculation of dissipation of energy by plotting a graph between the square of amplitude and time; Determination of speed of sound using resonance tube

Class XII 15 chapters · book pages B1 – B310

No.	Chapter	Pages	Topics
1	Electric Charges and Fields	B1 – B24	<ol style="list-style-type: none"> 1. Electric Charges and Coulomb's Law 2. Electric Field and Electric Field Lines 3. Electric Dipole, Electric Flux and Gauss's Law 4. Miscellaneous (Mixed Concepts) Problems

No.	Chapter	Pages	Topics
2	Electrostatic Potential and Capacitance	B25 – B54	<ol style="list-style-type: none"> 1. Electrostatic Potential and Equipotential Surfaces 2. Electric Potential Energy and Work Done in Carrying a Charge 3. Capacitors, Grouping of Capacitors and Energy Stored in a Capacitor 4. Miscellaneous (Mixed Concepts) Problems
3	Current Electricity	B55 – B88	<ol style="list-style-type: none"> 1. Electric Current, Drift of Electrons, Ohm's Law, Resistance and Resistivity 2. Combination of Resistances 3. Kirchhoff's Laws and Cells 4. Heating Effect of Current 5. Wheatstone Bridge and Different Measuring Instruments 6. Miscellaneous (Mixed Concepts) Problems
4	Moving Charges and Magnetism	B89 – B120	<ol style="list-style-type: none"> 1. Motion of Charged Particle in Magnetic Field 2. Magnetic Field Lines, Biot-Savart's Law and Ampere's Circuital Law 3. Force and Torque on Current Carrying Conductor 4. Galvanometer and its Conversion into Ammeter and Voltmeter 5. Miscellaneous (Mixed Concepts) Problems
5	Magnetism and Matter	B121 – B127	<ol style="list-style-type: none"> 1. Magnetism, Magnetic Moment, Properties of Magnet 2. Magnetic Materials and their Properties 3. Magnetic Equipment
6	Electromagnetic Induction	B128 – B147	<ol style="list-style-type: none"> 1. Magnetic Flux, Faraday's and Lenz's Law 2. Motional and Static EMI and Application of EMI 3. Miscellaneous (Mixed Concepts) Problems
7	Alternating Current	B148 – B165	<ol style="list-style-type: none"> 1. Alternating Current, Voltage and Power 2. AC Circuit, LCR Circuit and Power Factor 3. Transformers and LC Oscillations 4. Miscellaneous (Mixed Concepts) Problems
8	Electromagnetic Waves	B166 – B178	<ol style="list-style-type: none"> 1. Electromagnetic Waves, Conduction and Displacement Current 2. Electromagnetic Spectrum
9	Ray Optics and Optical Instruments	B179 – B214	<ol style="list-style-type: none"> 1. Plane Mirror, Spherical Mirror and Reflection of Light 2. Refraction of Light at Plane Surface and Total Internal Reflection 3. Refraction at Curved Surface, Lenses and Power of Lens 4. Refraction of Light through a Prism 5. Optical Instruments 6. Miscellaneous (Mixed Concepts) Problems
10	Wave Optics	B215 – B234	<ol style="list-style-type: none"> 1. Wavefront, Interference of Light, Coherent and Incoherent Sources 2. Young's Double Slit Experiment 3. Diffraction, Polarisation of Light 4. Miscellaneous (Mixed Concepts) Problems

No.	Chapter	Pages	Topics
11	Dual Nature of Radiation and Matter	B235 – B253	<ol style="list-style-type: none"> 1. Matter Waves, Cathode and Positive Rays 2. Photon, Photoelectric Effect 3. Miscellaneous (Mixed Concepts) Problems
12	Atoms	B254 – B266	<ol style="list-style-type: none"> 1. Atomic Structure and Rutherford's Nuclear Model 2. Bohr's Model and the Spectra of the Hydrogen Atom 3. Miscellaneous (Mixed Concepts) Problems
13	Nuclei	B267 – B284	<ol style="list-style-type: none"> 1. Composition and Size of the Nuclei 2. Mass-Energy Equivalence and Nuclear Reactions 3. Miscellaneous (Mixed Concepts) Problems
14	Semiconductor Electronics: Materials, Devices and Simple Circuits	B285 – B306	<ol style="list-style-type: none"> 1. Semiconductors and P-N Junction Diode 2. Digital Electronics and Logic Gates
15	Experimental Skills - XII	B307 – B310	<ol style="list-style-type: none"> 1. Determination of resistivity of the material of a given wire using a Meter bridge; To determine the resistance of a given wire using Ohm's law; To determine the resistance and figure of merit of a galvanometer by half deflection method 2. Determination of focal length of a (i) convex mirror (ii) concave mirror and (iii) convex lens using the parallax method; To plot angle of deviation versus angle of incidence for a triangular prism using parallax method; To determine the refractive index of a glass slab using a travelling microscope 3. To draw the characteristic curves of a p-n junction diode in forward and reverse bias; To draw the characteristic curves of a Zener diode and finding reverse break down voltage; Identification of diode, LED, resistor, capacitor from mixed collection of such items