SUBJECT- **PHYSICS**

SI.NO.	MONTH	NAME OF CHAPTER	LEARNING OUTCOME
1.	APRIL	**Unit–I Electrostatics** Chapter–1: Electric Charges and Fields	The student will be able to recognize the concept of electric charge, transfer of charge, properties of charge, coulombs law, calculation of electrostatic force, electric field, dipole and electric field intensity due to dipole, torque on dipole, Gauss law and its application.
2.	MAY	Chapter–2: Electrostatic Potential and Capacitance	The student will have understanding of electrostatic potential and its derivation for point charge, potential difference and work, working of dielectric and its polarization. Student will also be capable to understand capacitance and capacitor, combination of capacitor, Energy stored in a capacitor
3.	JUNE	**Unit-II Current Electricity** Chapter–3: Current Electricity	The student will have idea of Electric current, flow of electric charges in a metallic conductor, drift velocity, mobility and their relation with electric current; Ohm's law, V-I characteristics (linear and non-linear), electrical energy and power, electrical resistivity and conductivity, temperature dependence of resistance, Internal resistance of a cell, potential difference and emf of a cell, combination of cells in series and in parallel, Kirchhoff's rules, Wheatstone bridge.
4	JULY	**Unit-III Magnetic Effects of Current and Magnetism** Chapter–4: Moving Charges and Magnetism	The student will learn Concept of magnetic field, Oersted's experiment. Biot - Savart law and its application. Ampere's law and its applications. Straight solenoid (only qualitative treatment), force on a moving charge in uniform magnetic and electric fields. Force on a current-carrying conductor in a uniform magnetic field, force between two parallel current-carrying conductors, torque experienced by a current loop in uniform magnetic field; Current loop as a magnetic dipole and its magnetic dipole moment, moving coil galvanometer- its current sensitivity and conversion to ammeter and voltmeter.

5	AUG	Chapter–5: Magnetism and Matter	Student will be able to explain Bar magnet, bar magnet as an equivalent solenoid , magnetic field intensity due to a magnetic dipole (bar magnet) along its axis and perpendicular to its axis ,torque on a magnetic dipole (bar magnet) in a uniform magnetic field , magnetic field lines. Magnetic properties of materials- Para-, dia- and ferro - magnetic substances with examples, Magnetization of materials, effect of temperature on magnetic properties
6	SEP	**Unit-IV Electromagnetic Induction and Alternating Currents** Chapter–6: Electromagnetic Induction Chapter–7: Alternating Current **Unit–V Electromagnetic Waves** Chapter–8: Electromagnetic Waves	Student will able to understand the concept of Electromagnetic induction; Faraday's laws, induced EMF and current; Lenz's Law, Self and mutual induction Student will learn concept of Alternating currents, peak and RMS value of alternating current/voltage; reactance and impedance; LCR series circuit, resonance, power in AC circuits, power factor, wattless current. AC generator, Transformer. Numerical based on LCR circuit, transformer, derivation of RMS and Average value of AC current. Student will have Basic idea of displacement current, Electromagnetic waves, their characteristics, their transverse nature (qualitative idea only). Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays) including elementary facts about their uses.
7	OCT	**Unit–VI Optics** Chapter–9: Ray Optics andOptical Instruments Chapter–10: Wave Optics	Student will able to recognize the phenomenon related to light like Reflection of light, spherical mirrors, mirror formula, refraction of light, total internal reflection and optical fibers, refraction at spherical surfaces, lenses, thin lens formula, lens maker's formula, magnification, power of a lens, combination of thin lenses in contact, refraction of light through a prism. Optical instruments: Microscopes and astronomical telescopes (reflecting and refracting) and their magnifying powers. Student will learn the concept of Wave front and Huygen's principle, reflection and refraction of plane wave at a plane surface using wave fronts. Proof of laws of reflection and refraction using Huygen's principle. Interference, Young's double slit experiment and expression for fringe width (No derivation final expression only), coherent sources and sustained interference of light, diffraction due to a single slit, width of central maxima

8	NOV	**Unit–VII Dual Nature of Radiation and Matter** Chapter–11: Dual Nature ofRadiation and Matter **Unit–VIII Atoms and Nuclei** Chapter–12: Atoms Chapter–13: Nuclei **Unit–IX Electronic Devices** Chapter–14: Semiconductor Electronics: Materials, Devicesand Simple Circuits	Student will learn Dual nature of radiation, Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric equation-particle nature of light. Experimental study of photoelectric effect Matter waves-wave nature of particles, de-Broglie relation Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model of hydrogen atom, Expression for radius of nth possible orbit, velocity and energy of electron in nth orbit, hydrogen line spectra. Student will have concept of Composition and size of nucleus, nuclear force Mass-energy relation, mass defect; binding energy per nucleon and its variation with mass number; nuclear fission, nuclear fusion and numerical based on Mass- energy relation. Student will learn concept of semiconductors and insulators Intrinsic and extrinsic semiconductors- p and n type, p-n junction Semiconductor diode - I-V characteristics in forward and reverse bias, application of junction diode -diode as a rectifier
9	DEC	Revision Mock test	Revision Mock test
10	JAN	Revision Mock test	Revision Mock test
11	FEB	BOARD EXAM	BOARD EXAM
12	MAR	BOARD EXAM	BOARD EXAM