

PH-124 GENERAL PHYSICS-II

Electricity and Magnetism:

Coulombs Law, Electric Field, Continuous charge distribution, Electric Field due to charge distributions, Gauss's Law and its applications, Electric field around conductors. Electric Potential, Capacitors and dielectrics. Electric current and its heating effect, Power and its relationship with current and resistance, Chemical effects, Passage of current through a conducting solution, Primary and secondary cells and batteries. Alternating voltage and currents in outline, Frequency phase relationship, Peak instantaneous and r.m.s values, Reactance, Impedance, Power dissipation, RLC circuits. Simple A.C and D.C circuits. Magnetic Field, Magnetic force on a moving charge particle, Hall Effect, The magnetic field caused by current and resulting effects, the effect on a current carrying conductor in a magnetic field, Biotsavart law, Amperes law, Magnetic field of rings and Coil. Magnetic Dipole moment of atom, Theory of Magnetism, Laws of Magnetism, Intensity of Magnetization, Permeability, Retentivity, Hysteresis Curve for ferromagnetic materials, Pole Strength, Field strength, Magnetic Moment and Couple.

Modern Physics:

Band theory of solids, Energy levels in a semiconductor, Hole concept, Intrinsic and Extrinsic regions, Law of Mass, Action, Different types of LED. Wave nature of light, wave particle duality, De-Broglie hypothesis, Photoelectric effect, Characteristics of different types of photo cell, Electron Microscopes, Laser and its applications. Atomic Spectra, Generation and Properties of X-ray, X-ray spectra. Nuclear Radiation, Nuclear Reactions, Carbon dating, Nuclear radiation detectors, Hazards and use of Nuclear Radiation.