

## **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, Biot-Savart law, Ampere's 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.