## VRM-205 Radiation Physics

**Objective:** To enable the students to gain knowledge on the field of radiation along with the basics of sound, heat Electrostatics and Electricity and Magnetism.

**UNIT - 1** **Sound& heat,** The nature and propagation of sound wave (the characteristics of sound, wave theory), speed of sound in a material medium, intensity of sound, the decibel, Interference of sound waves, beats and diffraction, introduction of heat

**UNIT - 2** **Electrostatics,** Electric charge (positive and negative charge), Coulomb's law, Electric field, electric potential and potential difference and equipotential lines

**UNIT - 3** **Electricity and Magnetism,** DC circuit, Ohm's law, resistivity, series and parallel combination, EMF, Kirchhoff's law, heating effect of current, Ammeter, voltmeter, Galvanometer. Magnets and magnetic field, force on an electric current in a magnetic field, force on electric charge moving in a magnetic field, magnetic field due to straight wire force between two parallel wires, Ampere's law, electromagnet and solenoids.

**UNIT - 4** **Electromagnetic Induction,** (A.C. Circuit) Induced EMF, Faraday's Law, Lenz's law, EMF induced in a conductor, changing magnetic flux produces electric field, Transformer, Inductance, Energy stored in a magnetic field, resonance in A.C circuit. Light Index of refraction.

## Recommended Books:


- Christensen's physics of diagnostic radiology.
- Fundamentals of diagnostic radiology by Brant, William E