

PHYSICS

ENTRANCE EXAM SYLLABUS

I topic: Thermal physics.

- Explain temperature changes as a function of heat added for heating, cooling, melting, cristalization, vaporization and condensation processes.
- Apply equation of heat balance.

II topic: Electricity and magnetism.

- Describe distribution of charges when charging object.
- Apply Ohm's law, the rules parallel connection of resistors and for connection in series.
- Distinguish between work done and power of electric current.
- Draw magnetic field lines created by permanent magnets, currents and direction of magnetic force.

III topic: oscillations and waves.

- Determine amplitude, period, frequency and wavelength.
- Explain the role of transformer in transmission of electric energy.
- Outline the scale of electromagnetic waves.
- Apply laws of reflection, refraction and lens equation.
- Explain phenomena that are the evidence of wave nature of light (interference, diffraction, dispersion) and phenomena that are the evidence of particle nature of light (photon energy, photoelectric effect).

IV topic: Atom and nuclear structure.

- Describe atom and nuclear structure.
- Outline the changes of nucleus in α , β and γ decays.