

IIT JEE MAIN PHYSICS SYLLABUS 2018

Section-A (Theory Part, Weightage-80%)

- Physics and measurement
- Kinematics
- Laws of motion
- Work, energy and power
- Rotational motion
- Gravitation
- Properties of solids and liquids
- Thermodynamics
- Kinetic theory of gases
- Oscillations and waves
- Electrostatics
- Current electricity
- Magnetic effects of current and magnetism
- Electromagnetic induction and alternating currents
- Electromagnetic waves
- Optics
- Dual nature of matter and radiation
- Atoms and nuclei
- Electronic devices
- Communication systems

Section-B (Experimental Skills, Weightage-20%)

Familiarity with the basic approach and observations of the experiment and activities:

- Vernier callipers – its use to measure the internal and external diameter and depth of a vessel.
- Screw gauge –its use to determine thickness/ diameter of thin sheet/wire.
- Simple Pendulum-dissipation of energy by plotting a graph between square of amplitude and time.
- Metre Scale- mass of a given object by principle of moments.
- Young's modulus of elasticity of the material of a metallic wire.
- Surface tension of water by capillary rise and effect of detergents.
- Co-efficient of Viscosity of a given viscous liquid by measuring terminal velocity of a given spherical body.
- Plotting a cooling curve for the relationship between the temperature of a hot body and time.
- Speed of sound in air at room temperature using a resonance tube.
- Specific heat capacity of a given (1) solid (2) liquid by method of mixtures.
- Resistivity of the material of a given wire using Metre Bridge.
- Resistance of a given wire using Ohm's law.
- Potentiometer

- Comparison of emf of two primary cells
- Determination of internal resistance of a cell.
- Resistance and figure of merit of a galvanometer by half deflection method.
- Focal length of:
 - Convex mirror
 - Concave mirror
 - Convex lens (Using parallax method)
- Plot of angle of deviation vs angle of incidence for a triangular prism.
- Refractive index of a glass slab using a travelling microscope.
- Characteristic curves of a p-n junction diode in forward and reverse bias.
- Characteristic curves of a Zener diode and finding reverse break down voltage.
- Characteristic curves of a transistor and finding current gain and voltage gain.
- Identification of Diode, LED, Transistor, IC, Resistor, Capacitor from mixed collection of such items.
- Using multimeter to:
 - Identify base of a transistor
 - Distinguish between npn and pnp type transistor
 - See the unidirectional flow of current in case of a diode and an LED
 - Check the correctness or otherwise of a given electronic component (diode, transistor or IC).