

Syllabus of Combined Test (NEET type) for **PMT-Target Batches**

Date: 13-01-2021 (Online only)

PHYSICS

Unit-I Physical world and measurement

Physics – Scope and excitement, nature of physical law, physics, technology and society.

Need for measurement – Units of measurement, system of unit, SI unit, fundamental and derived units, length, mass and time measurement, accuracy and precision of measuring instruments, errors in measurement, significant figures.

Dimension of physical quantities, dimensional analysis and its applications.

Unit – II Kinematics

Frame of reference, motion in a straight line, position-time graph, speed and velocity, uniform and non-uniform motion, average speed and instantaneous velocity, uniformly accelerated motion, velocity time and position-time graphs, for uniformly accelerated motion (graphical treatment)

Elementary concepts of differentiation and integration for describing motion, scalar and vector quantities-position and displacement vectors, general vectors, general vectors and notation, quality of vectors, multiplication of vectors by a real number, addition and subtraction of vectors, relative velocity.

Unit vectors- resolution of a vector in a plane-rectangular components.

Scalar and vector, product of vectors, motion in a plane, cases of uniform velocity and uniform acceleration-projectile motion, uniform circular motion.

Unit – III Laws of motion

Intuitive concept of force, inertia, Newton's Ist law of motion, momentum and Newton's IInd law of motion, impulse, Newton's IIIrd law of motion, law of conservation of linear momentum and its application.

Equilibrium of concurrent forces, static and kinetic friction, laws of friction, rolling friction, lubrication.

Dynamics of uniform circular motion, centripetal force, examples of circular motion (vehicle on level circular road, vehicle on banked road).

Unit– IV Work energy and power

Work done by a constant force and variable force, kinetic energy, work energy theorem, power.

Notion of potential energy, potential energy of a spring, conservative forces, conservation of mechanical energy (kinetic and potential energies), non conservative forces, motion in vertical circle, elastic and inelastic collision in one and two dimension.

Electrostatics, reflection from plane and spherical surfaces, photoelectric effect and Dual nature of matter.

CHEMISTRY

Mole concept, solution, hydrocarbon, nomenclature of organic compound, periodic table, chemical bonding, general organic chemistry, alkyl/aryl halide.

BOTANY

The living world, biological classification, morphology of flowering plants and anatomy of flowering plants, respiration and photosynthesis.

ZOOLOGY

Animal kingdom, animal tissue, cockroach, digestion and absorption, breathing and exchange of gases, body fluid and circulation.