

Syllabus of combined Test (JEE-Advance Type) for IIT-Target batches

Date: 28-01-2021 (Online only)

PHYSICS

General

Units and dimensions, dimensional analysis, least count, significant figures, method of measurement and error, analysis for physical quantities, Vernier calipers and screw gauge (micrometer).

Mechanics

Kinematics in one and two dimensions, projectile motion, relative motion, Newton's laws of motion, Gauss's law, inertial and uniformly accelerated frames of references.

Static and dynamic friction, circular motion, work and power, kinetic and potential energy, conservation of linear momentum and mechanical energy.

Electrostatics, reflection from plane and spherical surfaces, photoelectric effect and Dual nature of matter. Refraction through plane and spherical surfaces, atomic structure, **nuclear physics**.

CHEMISTRY

Mole concept, atomic structure, solution, isomerism in organic compounds hydrocarbon, nomenclature of organic compound, periodic table, chemical bonding, general organic chemistry, alkyl/aryl halide, alcohol, phenol, **ether**.

MATHEMATICS

COMPLEX NUMBERS AND QUADRATIC EQUATIONS:

TRIGONOMETRY: – general solution of trigonometric equations.

Relation between sides and angles of a triangle, sine rule, cosine rule, half-angle formula and the area of a triangle, inverse trigonometric functions (principal value only).

MATRICES AND DETERMINANTS:

Matrices, algebra of matrices, types of matrices, determinants and matrices of order two and three. Properties of determinants, evaluation of determinants, area of triangles using determinants. Adjoint and evaluation of inverse of a square matrix using determinants and elementary transformation, Test of consistency and solution of simultaneous linear equations in two or three variables using determinants and matrices.

SEQUENCES AND SERIES

DIFFERENTIAL CALCULUS: –

Real – valued functions, one-one, into and onto functions, composition of functions. Odd, even and periodic functions. Limit, continuity and differentiability. Differentiation, derivatives of order upto two. Indefinite integration.

COORDINATE GEOMETRY:

Straight Lines, Pair of Straight Lines, Circle, **Parabola**