

Syllabus For
IIT MAIN Type Test (Online)

FOR TARGET BATCH

PART TEST – V

Date: 11.11.2018 (Sunday)

PHYSICS

Units and dimensions, error and measurement, Electrostatics (Coulomb's law, Electric field, Motion of charge particle into electric field, Electric potential), Electric potential energy, Electric dipole and its behaviour into an electric field, Electric flux. Gauss's Law its application. Force on a moving charge and current carrying conductor in magnetic field. Vector, Kinematics (Average velocity, Average speed, Average acceleration, Motion in one and two dimension, Relative velocity), Newton's law, Friction, Heat and thermodynamics, Properties of matter. Photo-electric effect, Hydrogen atom, Calorimetry and thermal expansion, Complete ray optics, X-rays.

CHEMISTRY

- **Some basic concept of chemistry:** Chemical formula, Element, compound, mixture, homogeneous and heterogeneous mixture, Atomic & molecular masses, Mole concept, limiting reagents, stoichiometric calculations, equivalent weight, number of structural isomers of organic molecules. Some important reactions, Nomenclature of organic compound, biomolecule, solution
- **Organic chemistry:** Homolysis /heterolysis, electrophile/nucleophile, inductive effect, resonance, electromeric effect, alkane, alkene, alkyne, aromatic electrophilic substitution, alkyl/aryl halides, alcohol, phenol, ether, aldehyde and ketons
- Solid state, atomic structure, Chemical kinetics
- Classification of elements and periodicity in properties, chemical bonding, redox, Transition metal, co-ordination compound, lanthanide, Group-1, 2, 13

MATHEMATICS

Straight Lines, Quadratic equations, Trigonometrical Ratio and Identities, Trigonometrical equations, Properties of triangle, Progressions, Matrix and Determinants, Vector addition, Vector product, Three Dimensional geometry, Functions, Circle, Differentiation, Complex Number.

11/11/18