

PHYSICS

Section - 1

Basic mathematics used in Physics, Vectors, Unit, Dimensions and Measurement ; Kinematics.
Laws of motion and Friction, Work, Energy & Power.
Centre of Mass & Collisions and Rotational Motion.
Electrostatics; Capacitors, Current electricity.
Magnetic effect of current and Magnetism, Electromagnetic Induction (EMI), Alternating current (AC).

Section - 2

Gravitation and Fluid Mechanics.
Thermal Physics.
SHM and Wave Motion.
Ray optics and optical Instruments, Wave optics (Nature of Light & Interference)
Modern Physics (Atomic and Nuclear Physics)
Practical Physics.

CHEMISTRY

Section - 1

Mole Concept and Atomic Structure.
Periodic Properties & Chemical Bonding.
State of Matter (Gaseous State), Redox & Equivalent Concept.
Chemical Equilibrium, Ionic Equilibrium, Acid-Base Theory.
Chemical Kinetics, Nuclear Chemistry, Electrochemistry and Solution.
s-Block elements, Boron & Carbon family, p-block elements.
Hydrogen.

Section - 2

Organic Nomenclature, Principles of practical organic chemistry, Isomerism, GOC & reaction intermediate.
Alkane, Alkene, Alkyne, Aromatic Hydrocarbon.
Haloalkane, Aryl Halide (Substitution & Elimination), Oxygen and Nitrogen.
Solid State, Surface Chemistry, Biomolecules & Polymer, Principles of Qualitative Analysis.
Chemical Thermodynamics & Thermochemistry.
Co-ordination compound, d & f block, Metallurgy.
Chemistry in Everyday Life & environmental chemistry.

MATHEMATICS

Section - 1

Logarithms, Quadratic Equations, Trigonometric Ratios and Identities, Trigonometric Equations, Solution of Triangles.
Functions and Inverse Trigonometric Function, Differential Calculus (Limit, Continuity, Differentiability, Differentiation).
Matrices & Determinants.
Application of Derivatives (Maxima & Minima, Monotonicity, Tangent & Normal).
Binomial Theorem, Permutation & Combination.
Probability.

Section - 2

Indefinite & Definite integration.
Point, Straight Line & Circle.
Parabola, Ellipse & Hyperbola.
Complex Numbers, Sequences & Series.
Vectors and Three Dimensional geometry.
Area under the curve and Differential Equations.