Module wise Syllabus for Chemistry Admission Test- 2026 for the admission in B. Sc. Chemistry Honours

Chemistry Syllabus (Module A, B, C)

1. **Some Basic Concepts of Chemistry** – mole concept, stoichiometry, laws of chemical combination
2. **Atomic Structure** – quantum theory, orbitals, electronic configuration
3. **Classification of Elements** – periodic trends and periodic table
4. **Chemical Bonding** – ionic and covalent bonding, VSEPR, hybridization
5. **States of Matter** – solid structure, gas laws and behavior
6. **s-Block Elements** – electronic configuration, properties and reactions of alkali and alkaline earth metals
7. **p-Block Elements (13 - 18)** – – electronic configuration, boron and carbon group fundamentals, nitrogen, oxygen, halogens and noble gases
8. **d- and f-Block Elements** – electronic configuration, transition and inner transition elements
9. **Coordination Compounds** – bonding, structure and nomenclature
10. **Thermodynamics** – energy changes, laws, enthalpy, entropy, Gibbs energy change for spontaneous and non-spontaneous processes
11. **Equilibrium** – chemical equilibrium, pH, buffers and ionic equilibrium
12. **Liquid State** – solutions, colligative properties and colloids
13. **Chemical Kinetics** – reaction rates, rate laws and activation energy
14. **Electrochemistry** – electrochemical cells, conductivity, Nernst equation
15. **Redox Reactions** – oxidation number and balancing methods
16. **Organic Chemistry Basics** – nomenclature and reaction mechanisms
17. **Hydrocarbons** – alkanes, alkenes, alkynes and aromatic compounds
18. **Haloalkanes and Haloarenes** – structure, reactions and applications
19. **Alcohols, Phenols and Ethers** – preparation and chemical properties
20. **Aldehydes, Ketones and Carboxylic Acids** – reactions and properties
21. **Organic Compounds Containing Nitrogen** – amines, diazonium salts and reactions
22. **Biomolecules** – carbohydrates, proteins and nucleic acids
23. **Polymers** – classification and polymerization methods
24. **Environmental Chemistry** – pollution, causes and control measures

Mathematics Syllabus (Module D)

1. **Algebra:** Complex numbers (Argand plane), quadratic equations, polynomials.

2. **Coordinate Geometry (2D):** Straight lines (forms, slope, distance), conic sections (circle, parabola, ellipse, hyperbola).
3. **Matrices & Determinants**: Matrix operations, types, inverse, determinants, solving linear equations using matrices.
4. **Differential Calculus:** Functions, Limits, Continuity, differentiability, chain rule, implicit differentiation, higher-order derivatives, applications (maxima-minima, tangents).
5. **Integral Calculus & Differential Equations:** Integration methods (substitution, parts, partial fractions), definite integrals, area under curves, differential equations (formation & solution).
6. **Function plotting**
7. **Basic Geometry (2D and 3D)**

Physics Syllabus (Module E)

1. **Vector:** Vector operations, dot & cross product, direction cosines, equations of lines, shortest distance, angle between lines.
2. **Mechanics:** Force, momentum, work, energy, power.
3. **Oscillation and Waves**
4. **Electrostatics:** Electric charges and Fields, Electrostatic potentials
5. **Dual Nature of Radiation and Matter:** Light-matter interaction

Biology Syllabus (Module E)

Elementary ideas on the following topics:

1. **Biomolecules:** Proteins; Carbohydrates; Lipids; Nucleic acids; Enzyme.
2. **Cell Cycle and Cell Division**
3. **Photosynthesis in Higher Plants**
4. **Plant Growth and Development**
5. **Molecular basis of inheritance**: genetic material and DNA as genetic material
6. **Reproduction, Chemical Coordination and Integration, Digestion and Absorption, Breathing and Exchange of Gases**
7. **Biotechnology and its applications**