

REQUIREMENTS FOR ENTRANCE EXAMINATION CHEMISTRY

General chemistry

The atomic nature of matter; characteristics of matter; structure of the atom, elements, atoms and periodic table; structure and properties of ionic and covalent compounds; bonds in chemistry; fundamental laws of chemistry; composition, chemical equation and stoichiometry; behavior of gases; solutions and colloids; acid, bases and salts; chemical energetics; oxidation and reduction; electrochemistry;

Inorganic chemistry

Nomenclature of inorganic compounds; trends across the periodic table; some representative groups and families: sulfur, halogen, oxygen, nitrogen family; metals and their compounds; p block elements and their compounds; transition metals and their compounds.

Organic chemistry and biochemistry

Isomerism, functional groups, basic reaction mechanisms in organic chemistry, organic nomenclature.

Nomenclature, properties and reactivity of: alkanes, alkenes, alkynes, aromatic hydrocarbons; halogenoalkanes and halogenoarenes; alcohols, thiols, phenols and ethers; aldehydes and ketones; amines; carboxylic acid and their derivatives; simple five membered and six membered heterocycles.

Carbohydrates: linear and cyclic formulae, monosaccharides, disaccharides, polysaccharides; Lipids: classification, composition, properties; Proteins: basic amino acids, peptide bonds; Nucleic acids: composition, nucleotides, base pairing, structure and function.