

SRMJEEE 2025 Chemistry Syllabus

Name of the units	Name of the sub-topics
Solutions	Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, and colligative properties- relative lowering of vapour pressure, Raoult's law, and elevation of boiling point, depression of freezing point, osmotic pressure, and determination of molecular masses using colligative properties.
Electrochemistry	Redox reactions, conductance in electrolytic solutions, specific and molar conductivity, variations of conductivity with concentration, Kohlrausch's Law, electrolysis, Electrolytic cells and Galvanic cells, EMF of a cell, standard electrode potential, Nernst equation and its application to chemical cells, Relation between Gibbs energy change and EMF of a cell, Corrosion
Chemical Kinetics	Rate of a reaction (Average and instantaneous), factors affecting rate of reaction: concentration, temperature, catalyst; reaction, order and molecularity of a rate law and specific rate constant, integrated rate equations and half-life (only for zero and first order reactions), concept of collision theory (elementary and mathematical treatment), Activation energy, Arrhenius equation
Surface Chemistry	Adsorption - physisorption and chemisorption, adsorption of factors gases affecting on solids, Catalysis, colloidal state distinction between true solutions, colloids and suspension; lyophilic, lyophobic multimolecular and macromolecular colloids; properties of colloids; Tyndall effect, Brownian Movement, electrophoresis, coagulation.
p -Block Elements	Group 16 Elements: General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties, dioxygen: Preparation, Properties and uses, classification of Oxides, Ozone, Sulphur - allotropic forms; compounds of Sulphur: Preparation Properties and uses of Sulphur dioxide, Sulphuric Acid: industrial process of manufacture, properties and uses;

	<p>Oxoacids of Sulphur (Structures only).</p> <p>Group 17 Elements: General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties; compounds Preparation, properties of halogens, and uses of Hydrochloric acid, interhalogen compounds (structures only). Group 18 Elements: General introduction, electronic configuration, Occurrence, trend in physical and chemical properties, uses.</p>
'd' and 'f' Block Elements	<p>General introduction, electronic configuration, occurrence and characteristics of transition metals, general trends in properties of the first row transition metals - metallic character, ionization enthalpy, oxidation states, ionic radii, colour, catalytic property, magnetic properties, interstitial compounds, alloy formation</p>
Coordination Compounds	<p>Coordination compounds - Unit 7: Coordination Compounds Introduction, ligands, coordination number, colour, magnetic properties and shapes, IUPAC nomenclature of mononuclear coordination compounds. Bonding, Werner's theory, VBT, and CFT, structure and stereoisomerism</p>
Haloalkanes and Haloarenes	<p>Haloalkanes: Nomenclature, nature of C-X bond, physical and chemical properties, mechanism of substitution reactions, optical rotation. Haloarenes: Nature of C-X bond, substitution reactions (Directive influence of halogen in monosubstituted compounds only)</p>
Alcohols, Phenols and Ethers	<p>Alcohols: Nomenclature, methods of preparation, physical and chemical properties (of primary alcohols only), identification of primary, secondary and tertiary alcohols, mechanism of dehydration. Phenols: Nomenclature, methods of preparation, physical and chemical properties, acidic nature of phenol, electrophilic substitution reactions, uses of phenols. Ethers: Nomenclature, methods of preparation, physical and chemical properties, uses</p>
Aldehydes, Ketones and Carboxylic Acids	<p>Aldehydes and Ketones: Nomenclature, nature of carbonyl group, methods of preparation, physical and chemical properties, mechanism of nucleophilic addition, reactivity of alpha hydrogen in aldehydes, uses. Carboxylic Acids: Nomenclature, acidic nature,</p>

	methods of preparation, physical and chemical properties; uses
Organic compounds containing Nitrogen	Amines: Nomenclature, classification, preparation, physical and chemical properties, uses, identification of primary, secondary and tertiary amines, Diazonium salts: Preparation, chemical reactions and importance in synthetic organic chemistry.
Biomolecules	Carbohydrates - Classification (aldoses and ketoses), monosaccharides (glucose and fructose), D-L configuration oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen); Importance of carbohydrates. Proteins - Elementary idea of - amino acids, peptide bond, polypeptides, proteins, structure of proteins - primary, secondary, tertiary structure and quaternary structures (qualitative idea only), denaturation of proteins, Nucleic Acids: DNA and RNA