SUBJECT: CHEMISTRY

S.No.	MONTHS	NAME OF CHAPTER	LEARNING OUTCOMES
1.	APRIL	SOLUTIONS	Students will be able to understand • The formation of different types of solutions; • Concentration of solution in different units; • Henry's law andRaoult's law; • Ideal and non-ideal solutions; • Deviations of real solutions from Raoult's law; • Colligative properties of solutions and correlation with molar masses of the solutes; • Abnormal colligative properties exhibited by some solutes in solutions.
2.	MAY	ELECTROCHEMISTRY	Students will be able to understand• Electrochemical celland Galvanic and electrolytic cells; • Nernst equation for calculating the EMF of galvanic cell and standard potential of the cell; • Relation between standardpotential of the cell, Gibbs energy of cell reaction and its equilibrium constant; • Resistivity (ρ), conductivity (κ) and molar conductivity (Λ_m) of ionic solutions; • Ionic(electrolytic) and electronic conductivity; • Methods for measurement of conductivity of electrolytic solutions and calculation of their molarconductivity; • The variation of conductivity and molar conductivity of solutions with change in their concentration and Λ_m° (molar conductivity at zero concentration or infinite dilution); • Kohlrausch law and its applications; • The construction of someprimary and secondary batteriesand fuel cells; • Corrosion
3.	JUNE	CHEMICAL KINETICS	• Students will be able to understand.The average and instantaneous rate of a reaction; • The rate of a reaction in terms of change in concentrationof either of the reactants or products with time; • Elementary and complex reactions;

			• Molecularity and order of a reaction; • Rate constant; • The dependence of rate of reactions on concentration, temperature and catalyst; • Integrated rate equations for the zero and first order reactions; • The rate constants for zeroth and first order reactions; • Collision theory.
4.	JULY	d and f BLOCK ELEMENTS	Students will be able to understand • The positions of the *d*– and *f*-block elements in the periodic table; • The electronic configurations of the transition (*d*-block) and the inner transition (*f*-block) elements; • The relative stability of various oxidation states in terms of electrode potential values; • The preparation, properties, structures and uses of some important compounds such as $K_2Cr_2O_7$ and $KMnO_4$; • The general characteristics of the *d*– and *f*–block elements and the general horizontal and group trends in them; • The properties of the *f*-block elements and comparative account of the lanthanoids and actinoids with respect to their electronic configurations, oxidation states and chemical behaviour.
5.	AUGUST	CO-ORDINATION CHEMISTRY	• The postulates of Werner's theory of coordination compounds; • Coordination entity, central atom/ion, ligand, coordination number, coordination sphere, coordination polyhedron, oxidation number, homoleptic and heteroleptic; • The rules of nomenclature of coordination compounds; • The formulas and names of mononuclear coordination compounds; • Different types of isomerism in coordination compounds; • The nature of bonding in coordination compounds in terms of the Valence Bond and Crystal Field theories; • The importance and applications of coordination compounds in our day to day life.
6.	SEPTEMBER	HALOALKANES AND HALOARENES	Students will be able to understand • Naming of haloalkanes and haloarenes according to the IUPAC system of nomenclature from their given structures; • The reactions involved in the preparation of haloalkanes and

			haloarenes and various reactions that they undergo; • The structures of haloalkanes and haloarenes with various types of reactions; • Stereochemistry as a tool for understanding the reaction mechanism; • The applications of organo-metallic compounds; • The environmental effects of polyhalogen compounds.
8.	OCTOBER	ALDEHYDE, KETONE AND CARBOXYLIC ACID	• The common and IUPAC names of aldehydes, ketones and carboxylic acids; • The structures of the compounds containing functional groups namely carbonyl and carboxyl groups; • The important methods of preparation and reactions of these classes of compounds; • Physical properties and chemical reactions of aldehydes,ketones and carboxylic acids,with their structures; • The mechanism of a few selected reactions of aldehydes and ketones; • Various factors affecting the acidity of carboxylic acids and their reactions; • The uses of aldehydes,ketones and carboxylic acids.
9	NOVEMBER	AMINE	Students will be able to understand- Amines as derivatives of ammonia having a pyramidal structure; • Amines as primary,secondary and tertiary; • Naming of amines by common names and IUPAC system; • The important methods of preparation of amines; • The properties of amines; • Difference between primary, secondary and tertiary amines; • The method of preparation of diazonium salts and their importance in the synthesis of a series of aromatic compounds including azo dyes.

		BIOMOLECULES	Students will be able to understand • The characteristics of biomolecules like carbohydrates, proteins and nucleic acids and hormones; • Structures of carbohydrates, proteins, nucleic acids and vitamins • The difference between DNA and RNA; • The role of biomolecules in biosystem.
10.	December	Revision + Project	
11.	January	Revision+Mock test	
12.	February & March	Board examination	