

**HANSRAJ MODEL SCHOOL
PUNJABI BAGH, NEW DELHI
CURRICULUM
SESSION: 2024-25
SUBJECT : CHEMISTRY
CLASS : XII**

<u>MONTH</u>	<u>TOPICS / SUBTOPICS</u>	<u>LEARNING INTENTIONS</u>	<u>ACTIVITIES</u>	<u>ASSIGNMENTS</u>
April	Unit6 -Haloalkanes & Haloarenes	<p>After studying this Unit, students will be able to</p> <ul style="list-style-type: none"> ● name haloalkanes and haloarenes according to the IUPAC system of nomenclature from their given structures; ● describe the reactions involved in the preparation of haloalkanes and haloarenes and understand various reactions that they undergo; ● correlate the structures of haloalkanes and haloarenes with various types of reactions; ● use stereochemistry as a tool for understanding the reaction mechanism; ● appreciate the applications of organo- 	<p>Students will make comic strips to explain name reactions and reasoning based questions in an easy manner as an art activity.</p>	<p>(Quizzes made online for various topics will be shared from time to time for practising MCQs)</p> <p>IUPAC nomenclature based questions from solved examples, Intext questions and exercise questions will be given for practice.</p> <p>Intext and a few exercise questions from NCERT textbook depending upon the topic discussed in the class ,will be given to students as an assignment.</p>

		<p>metallic compounds;</p> <ul style="list-style-type: none"> highlight the environmental effects of polyhalogen compounds. 		
May	<p>Unit7 -Alcohols, Phenol & Ethers</p>	<p>After studying this Unit, students will be able to</p> <ul style="list-style-type: none"> name alcohols, phenols and ethers according to the IUPAC system of nomenclature; discuss the reactions involved in the preparation of alcohols from alkenes, aldehydes, ketones and carboxylic acids discuss the reactions involved in the preparation of phenols from haloarenes, benzene sulphonic acids, diazonium salts and cumene; discuss the reactions for preparation of ethers from (i) alcohols and (ii) alkyl halides and sodium alkoxides/aryl oxides; correlate physical properties of alcohols, phenols and ethers with their structures; discuss chemical reactions of the three classes of compounds on the basis of their functional groups. 	<p>Detection of given functional groups in organic compounds will be done practically in chemistry lab.</p>	<p>Questions based on IUPAC naming, name reactions, conversions, reasoning etc will be discussed in the class along with every type of compounds and more questions will be given from the exercise in the NCERT textbook.</p>
	<p>Unit1- Solutions</p>	<p>After studying this Unit, students will be able to</p>		

		<ul style="list-style-type: none"> ● describe the formation of different types of solutions; ● express concentration of solution in different units; ● state and explain Henry's law and Raoult's law; ● distinguish between ideal and non-ideal solutions; ● explain deviations of real solutions from Raoult's law; ● describe colligative properties of solutions and correlate these with molar masses of the solutes; ● explain abnormal colligative properties exhibited by some solutes in solutions. 	<p>Group discussion about importance of remaining hydrated <i>during sports activities and role of different solutions for sports injuries.</i></p>	<p>Neumericals and theoretical questions based on different concepts will be discussed in class followed by assigning similar questions from the NCERT textbook and exemplar exercise after every class</p>
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July	Unit 8-Aldehydes, ketones & Carboxylic acids	<p>After studying this Unit, students will be able to</p> <ul style="list-style-type: none"> ● write the common and IUPAC names of aldehydes, ketones and carboxylic acids; ● write the structures of the compounds containing functional groups namely carbonyl and carboxyl groups; ● describe the important methods of preparation and reactions of these classes of compounds; ● correlate physical properties and chemical reactions of aldehydes, ketones and carboxylic acids, with their structures; ● explain the mechanism of a few selected reactions of aldehydes and ketones; ● understand various factors affecting the acidity of carboxylic acids and their reactions; ● describe the uses of aldehydes, ketones and carboxylic acids. 	Chemical distinction tests will be performed by the students in chemistry lab.	<p>Questions based on IUPAC naming, name reactions, conversions, reasoning etc will be discussed in the class along with every type of compounds and more questions will be given from the exercise in the NCERT textbook.</p> <p>Students will be asked to do all MCQs from the NCERT Exemplar.</p>
	Unit 9- Amines	<p>After studying this Unit, students will be able to</p> <ul style="list-style-type: none"> ● describe amines as derivatives of ammonia having a pyramidal structure; ● classify amines as primary, secondary and tertiary; · name amines by 	Students will be asked to carry out an activity in the form of art integrated project to show preparation uses of dyes/colours.	Specific NCERT textbook and exemplar questions (Apart from the ones done in class) will be given as assignment

		<p>common names and IUPAC system; describe some of the important methods of preparation of amines;</p> <ul style="list-style-type: none">● explain the properties of amines;● distinguish between primary, secondary and tertiary amines;● describe the method of preparation of diazonium salts and their importance in the synthesis of a series of aromatic compounds including azo dyes. describe some of the important methods of preparation of amines; <ul style="list-style-type: none">● explain the properties of amines;● distinguish between primary, secondary and tertiary amines;● describe the method of preparation of diazonium salts and their importance in the synthesis of a series of aromatic compounds including azo dyes.		
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August	Unit2- Electrochemistry	<p>After studying this Unit, students will be able to</p> <ul style="list-style-type: none"> ● describe an electrochemical cell and differentiate between galvanic and electrolytic cells; ● apply Nernst equation for calculating the emf of galvanic cell and define standard potential of the cell; ● derive relation between standard potential of the cell, Gibbs energy of cell reaction and its equilibrium constant; ● define resistivity (ρ), conductivity (κ) and molar conductivity (Λ_m) of ionic solutions; ● describe the method for measurement of conductivity of electrolytic solutions and calculation of their molar conductivity; ● justify the variation of conductivity and molar conductivity of solutions with change in their concentration and define Λ_m^∞ (molar conductivity at zero concentration or infinite dilution); ● enunciate Kohlrausch law and learn its applications; ● understand quantitative aspects of electrolysis; ● describe the construction of some primary and secondary batteries and fuel cells; ● explain corrosion as an electrochemical process. 	<p>Students will be guided to carry out investigatory projects based on electrochemical cells and study the effect of different factors affecting conductance.</p>	<p>Neumericals and theoretical questions based on different concepts will be discussed in class followed by assigning similar questions from the NCERT textbook and exemplar exercise after every class</p>
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	Unit3-Chemical Kinetics	<p>After studying this Unit, students will be able to</p> <ul style="list-style-type: none"> ● define the average and instantaneous rate of a reaction; ● express the rate of a reaction in terms of change in concentration of either of the reactants or products with time; ● distinguish between elementary and complex reactions; ● differentiate between the molecularity and order of a reaction; ● define rate constant; ● discuss the dependence of rate of reactions on concentration, temperature and catalyst; · derive integrated rate equations for the zero and first order reactions; ● determine the rate constants for zeroth and first order reactions; ● describe collision theory. 	<p>To study the effect of concentration of the reactant on the rate of the reaction, an experiment will be carried out followed by plotting of graph to understand the order of reaction.</p> <p><i>Students to be taught to use lab apparatus carefully and should be responsible enough to not to damage school property (DC).</i></p>	<p>NCERT textbook exercise and exemplar questions on every topic will be given as an assignment after discussing the solved examples and Intext questions on respective topics.</p>
September	Half yearly Examination.			

October	Unit4- d & f -Block Elements	<p>After studying this Unit, students will be able to</p> <ul style="list-style-type: none"> ● learn the positions of the d- and f-block elements in the periodic table ● know the electronic configurations of the transition (d-block) and the inner transition (f-block) elements ● appreciate the relative stability of various oxidation states in terms of electrode potential values; ● describe the preparation, properties, structures and uses of some important compounds such as $K_2Cr_2O_7$ and $KMnO_4$. ● understand the general characteristics of the d- and f-block elements and the general horizontal and group trends in them; ● describe the properties of the f-block elements and give a comparative ● account of the lanthanoids and actinoids with respect to their electronic configurations, oxidation states and chemical behaviour. 	<p>An art activity of making mind maps for salt analysis schemes will be taken up by students.</p> <p>Art based activity to show applications of d&f block elements as crossword puzzle or in the form of any other interesting game will be made by students.</p>	<p>NCERT solved examples, Intext and exercise questions will be given as assignment.</p>
	Unit5- Co-ordination compounds	<p>After studying this Unit, students will be able to</p>		

		<ul style="list-style-type: none"> ● appreciate the postulates of Werner's theory of coordination compounds; ● know the meaning of the terms: coordination entity, central atom/ ion, ligand, coordination number, coordination sphere, coordination polyhedron, oxidation number, homoleptic and heteroleptic; ● learn the rules of nomenclature of coordination compounds; ● write the formulas and names of mononuclear coordination compounds ● define different types of isomerism in coordination compounds; ● understand the nature of bonding in coordination compounds in terms of the Valence Bond and Crystal Field theories; ● appreciate the importance and applications of coordination compounds in our day to day life 	Students will be asked to make mindmap for IUPAC naming and applications of Coordination compounds.	NCERT textbook exercise and exemplar questions on every topic will be given as an assignment after discussing the solved examples and Intext questions on respective topics.
November	Unit10- Biomolecules	<p>After studying this Unit, students will be able to</p> <ul style="list-style-type: none"> ● explain the characteristics of biomolecules like carbohydrates, proteins and nucleic acids and hormones; ● classify carbohydrates, proteins, nucleic acids and vitamins on the basis of their structures; ● explain the difference between DNA and RNA; 	Students will be guided to use Adobe applications like text to image to show applications/ importance of biomolecules for industry, sports ,art and daily life.	NCERT exercise questions and questions from board papers of previous years' will be given as assignments.

		<ul style="list-style-type: none">• describe the role of biomolecules in biosystem		
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