



# LORD MAHAVIRA SCHOOL

Sector-29, Noida, 201303

Website: [www.lordmahaviraschool.co.in](http://www.lordmahaviraschool.co.in) / Email: lord.mahavira@yahoo.in

## LESSON PLAN

**SUBJECT: CHEMISTRY (043)**

CLASS: XI

(BOOKS: NCERT TEXT BOOK/ REFERENCE BOOKS)

S.NO.	MONTH	TOPICS/UNITS/ CHAPTERS	SUB TOPICS	ACTIVITIES/ PRACTICAL
1.	JULY	<b>UNIT-I</b> SOME BASIC CONCEPTS OF CHEMISTRY	General introduction, nature of matter, law of chemical combination, atomic and molecular masses, mole concept and percentage composition, empirical and molecular formula, chemical reactions, stoichiometry and calculations based on stoichiometry.	
		<b>UNIT-II</b> STRUCTURE OF ATOM	Bohr's model and its limitations, Concept of shells and sub shells, dual nature of matter and light, de-Broglie's relationship, Heisenberg's uncertainty principle, concept of orbital, quantum numbers, shapes of s, p and d orbitals, rules for filling electrons in orbitals-Aufbau principle, Pauli's exclusion principle and Hund's rule, electronic configuration of atoms, stability of half-filled and fully filled orbitals.	
2.	AUGUST	<b>UNIT-III</b> CLASSIFICATION OF ELEMENTS AND PERIODICITY IN PROPERTIES	Modern periodic law and modern periodic table, periodic trends in properties of elements- atomic radii, ionic radii, ionisation enthalpy, electron gain enthalpy, electronegativity, valence, nomenclature of elements with atomic number greater than 100.	Qualitative Analysis Salt analysis Acidic and basic radicals
		<b>UNIT-IV</b> CHEMICAL BONDING AND MOLECULAR STRUCTURE	Valence electrons, ionic bonds, covalent bonds : bond parameters, Lewis structure, polar character of covalent bond, covalent character of ionic bond, valence bond theory, resonance theory, geometry of covalent molecules, VSEPR theory, concept of hybridisation, involving s, p and d orbitals and shapes of some simple molecules, molecular orbital theory of homo nuclear diatomic molecules, hydrogen bonds.	
	SEPTEMBER	<b>REVISION AND MID TERM EXAMINATION</b>		





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**SUBJECT: CHEMISTRY (043)**

**CLASS: XII**

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S.No.	MONTH	TOPICS/UNITS/ CHAPTERS	SUB TOPICS	PRACTICALS/ PROJECTS
1.	APRIL	UNIT-I SOLUTION	Types of solutions, expression of concentration of solutions, Henry's law, Raoult's Law, colligative properties, determination of molecular masses using colligative properties, abnormal molecular masses and Van't Hoff factors.	Salt analysis Acidic and basic radicals.
		UNIT-II ELECTRO CHEMISTRY	Redox reaction, conductance in electrolytic solutions, specific and molar conductivity, variation in conductivity with concentration, Kohlrausch's law, electrolysis and Faraday's law, EMF of cell, Nernst equation and its applications, relation between Gibbs energy change and EMF of cell, batteries, Primary and Secondary, fuel cell and corrosion.	Preparation of colloidal solution of egg albumin and preparation of double salt potash alum.
2.	MAY	UNIT-III CHEMICAL KINETICS	Rate of reaction(average and instantaneous), factor effecting rate of reaction, concentration, temperature, catalyst, order and molecularity of reaction, rate law and specific rate constant, integrated rate equation half life time, activation energy, collision theory.	Chromatography (separation of red and blue ink mixture by paper chromatography)
3.	JULY	UNIT-IX AND X HALOALKANES AND HALOARENES	Halo alkanes: Nomenclature, nature of C-X bond, physical and chemical properties, mechanisms of substitution reactions, optical activities of halo compounds. Halo arenes, nature of C-X bonds, substitution reactions, uses and environmental effects of poly halo compounds.	Identification of functional groups in Organic compounds
		ALCOHOLS, PHENOL AND ETHERS	Alcohols: Nomenclature, method of preparations, physical and chemical properties, mechanisms of dehydration of primary, secondary and tertiary alcohols. Phenols: Nomenclature, preparations, properties and acidic nature of Phenol, uses of Phenol. Ethers, nomenclature, preparations and uses.	

4.	AUGUST	<p><b>UNIT-XI, XII</b></p> <p><b>ALDEHYDES KETONES AND CARBOXYLICACIDS</b></p> <p><b>UNIT-XIII</b></p> <p><b>ORGANIC COMPOUND CONTAINING NITROGEN</b></p>	<p>Aldehydes and Ketones: Nomenclature, nature of carbonyl group, preparations, properties and mechanisms of nucleophilic addition reactions. Carboxylic acids, nomenclature, acidic nature, preparation, properties and uses.</p> <p>Amines: Nomenclature, classification, preparation, properties, uses. Diazonium salts: Preparation, properties, chemical reactions and importance in synthesis of organic compounds.</p>	<ul style="list-style-type: none"> <li>• Volumetric analysis, Titration</li> <li>• Mohr's salt vs <math>\text{KMnO}_4</math></li> <li>• Oxalic acid Vs <math>\text{KMnO}_4</math></li> <li>• Effect of concentration on rate of reaction between <math>\text{HCl}</math> and <math>\text{Na}_2\text{S}_2\text{O}_3</math> solution .</li> </ul>
5.	SEPTEMBER		<b>REVISION AND TERM 1 EXAMS</b>	
6.	OCTOBER	<b>UNIT-BIOMOLECULES</b>	<p>Biomolecules: carbohydrates- classification, DL configuration, structures of disaccharides and polysaccharides, importance of carbohydrates. Proteins- Amino acids, peptide bonds, structures of proteins, classification of proteins, enzymes, hormones, vitamins, nucleic acids, DNA and RNA.</p>	<ul style="list-style-type: none"> <li>• Determination of starch and Proteins in food stuff</li> </ul>
7.	NOVEMBER	<b>UNIT-THE d- and f-BLOCK ELEMENTS</b>	<ul style="list-style-type: none"> <li>• General introduction, electronic configuration, occurrence and characteristics of d-block and f-block elements, their physical and chemical properties, compounds of d-block (<math>\text{K}_2\text{Cr}_2\text{O}_7</math> and <math>\text{KMnO}_4</math>), their preparation and properties.</li> <li>• Lanthanides and Actinides, their electronic configuration, physical properties and chemical properties.</li> </ul>	<ul style="list-style-type: none"> <li>• Investigatory projects and related analysis.</li> </ul>
8.	DECEMBER	<b>COORDINATION COMPOUNDS</b>	<p>Introduction of coordination compounds, ligands, coordination number, colour, magnetic properties and shapes of coordination compounds. Bonding, Werner's Theory, VBT, CFT, Isomerism in complexes.</p>	
9.	JANUARY		<b>PRE-BOARD EXAMS ,REVISION</b>	
10.	FEBRUARY		<b>REVISION, PRACTICALS ETC.</b>	