

Session 2023-24 (Odd Sem.)
Govt. College Nalwa (Hisar)

LESSON PLAN (w.e.f. July 21, 2023)


Name: Dr. Sudesh

Subject: Chemistry

Class: B.Sc. III 5th Sem (Non-Med.)

Paper: Chemistry of Main Group Elements-II [CCL-504(ii)]

Month/Week	Contents
July	
Week 1 ³	Structure, bonding and properties (acidic/ basic nature, oxidizing/ reducing nature and hydrolysis of the following compounds and their applications in industrial and environmental chemistry wherever applicable: Diborane
Week 2 ⁴	concept of multicentre bonding
August	
Week 1	Hydrides of Groups 13 (EH ₃), 14, 15, 16 and 17.
Week 2	Oxides of N and P, Oxoacids of P, S and Cl.
Week 3	Halides and oxohalides of P and S (PCl ₃ , PCl ₅ , SOCl ₂ and SO ₂ Cl ₂)
Week 4	Interhalogen compounds. A brief idea of pseudohalides. Assignment 1
September	
Week 1	Noble gases: Rationalization of inertness of noble gases, clathrates,
Week 2	Preparation and properties of XeF ₂ , XeF ₄ and XeF ₆ , bonding in these compounds using VBT
Week 3	Shapes of noble gas compounds using VSEPR Theory. Test
Week 4	Inorganic Polymers: Types of inorganic polymers and comparison with organic polymers, structural features,
October	
Week 1	Classification and important applications of silicates. Synthesis, structural features and applications of silicones. Assignment 2
Week 2	Borazines – preparation, properties and reactions.
Week 3	Cyclophosphazenes – preparation, properties and reactions.
Week 4	Bonding in (NPCl ₂) ₃ .
November	
Week 1	Revision
Week 2	Diwali vacations (10.11.2023-16.11.2023)
Week 3	Revision



Incharge
Chemistry Department

Government College Nalwa, Hisar
Lesson Plan Session 2023-24, Odd Semester

Dr. Rajni Mohil Assistant Professor Subject: Chemistry Class: BSc-III 5TH Semester Paper: CCL-503(ii) Discipline Specific Course-I(ii) Chemistry of Main Group Elements, Theories of Acids and Bases-I				
SR. NO.		WEEK	TOPICS TO BE COVERED	REMARKS IF ANY
1.	July	Week 4	Acids and Bases: Introduction	
		Week 5	Acids and Bases: Introduction	
2.	August	Week 1	Acids and Bases: Bronsted-Lowry Concept	
		Week 2	Acids and Bases: Conjugate Acids and Bases	
		Week 3	Acids and Bases: relative strengths of acids and bases	
		Week 4	Acids and Bases: Effects of substituent and solvent, differentiating and levelling solvents. Lewis acid-base concept, classification of Lewis acids and bases,	
		Week 5	Lux-Flood concept and solvent system concept. Hard and soft acids and bases (HSAB concept), applications of HSAB process.	
3.	September	Week 1	General Principles of Metallurgy: Chief modes of occurrence of metals based on standard electrode potentials	ASSIGNMENT 1
		Week 2	Ellingham diagrams for reduction of metal oxides using carbon and carbon monoxide as reducing agents.	
		Week 3	Hydrometallurgy with reference to cyanide process for gold and silver.	
		Week 4	Methods of purification of metals (Al, Pb, Ti, Fe, Cu, Ni, Zn, Au): electrolytic refining, zone refining, van Arkel-de Boer process	

Dr. Rajni Mohil
Assistant Professor
Subject: Chemistry
Class: BSc-III 5TH Semester
Paper: CCS-505(i) Skill Enhancement Course-I
PESTICIDE CHEMISTRY (Theory)

SR. NO.		WEEK	TOPICS TO BE COVERED	REMARKS IF ANY
1.	July	Week 4	Unit : 1 General introduction to pesticides (natural and synthetic)	
		Week 5	General introduction to pesticides (natural and synthetic): Contd.	
2.	August	Week 1	Benefits and adverse effects	
		Week 2	Changing concepts of pesticides.	
		Week 3	Changing concepts of pesticides. Contd.	
		Week 4	Problems	
3.	September	Week 1	Unit:2 Structure activity relationship	ASSIGNMENT 1
		Week 2	Structure activity relationship. Contd.	
		Week 3	Synthesis and uses of Organophosphates (Malathion, Parathion)	
		Week 4	Synthesis and uses of Organophosphates (Malathion, Parathion) Contd.	
		Week 5	Synthesis and uses of Carbamates (Carbofuran and carbaryl)	
3.	October	Week 1	Synthesis and uses of Carbamates (Carbofuran and carbaryl) Contd.	
		Week 2	Synthesis and uses of Quinones (Chloranil)	

Government College Nalwa, Hisar
Lesson Plan Session 2023-24, Odd Semester

		Week 5	Parting Process, Mond's process and Kroll Process.	ASSIGNMENT 2
3.	October			
		Week 1	s- and p-Block Elements Periodicity in s- and p-block elements with respect to electronic configuration, atomic and ionic size, ionization enthalpy, electron gain enthalpy, electronegativity (Pauling scale).	
		Week 2	General characteristics of s-block metals like density, melting and boiling points, flame colour and reducing nature	
		Week 3	Oxidation states of s- and p-block elements	
		Week 4	Inert-pair effect, diagonal relationships and anomalous behaviour of first member of each group.	
		Week 5	Allotropy in C, P and S.	
4.	November	Week 1	Complex forming tendency of s block elements and a preliminary idea of crown ethers and cryptates,	UNIT TEST
		Week 2 3	structures of basic beryllium acetate, salicylaldehyde/ acetylacetonato complexes of Group 1 metals.	
		Week 3 3	Solutions of alkali metals in liquid ammonia and their properties	
		Week 4	Common features, such as ease of formation, solubility and stability of oxides, peroxides, superoxides of s-block metals, sulphates and carbonates of s-block metals	
		Week 5	Revision	
		Examination		

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		Week 3	synthesis and uses of Quinones (Chloranil) Contd.	ASSIGNMENT 2
		Week 4	Synthesis and uses of Anilides (Alachlor and Butachlor)	
4.	November	Week 1	Synthesis and uses of Anilides (Alachlor and Butachlor) Contd.	UNIT TEST
		Week 2	Revision <i>lineals</i>	
		Week 3	Revision	
		Week 4	Revision	
		Week 5	Revision	
		Examination		

Topic