

Government PG College, Ambala Cantt.

Course: CHEMISTRY-1 ; CC/MCC-1; B-23 CHE-101

Lesson Plan Session **2023-24** (Odd Semester) Class: B.PSc. N.M

Name: **Dr. DEEPAK SHARMA**

Semester: I

Week/ Working Days	Details	Remarks
July 24, 2023- July 26, 2023 03 Days	Kinetic theory of gases, Maxwell distribution of velocities and energies (derivation excluded)	
July 31, 2023- Aug 02, 2023 02 Days	Calculation of root mean square velocity, average velocity, and most probable velocity.	
Aug 07, 2023- Aug 09, 2023 03 Days	Collision diameter, collision number, collision frequency and mean free path (Derivations excluded)	
Aug 14, 2023- Aug 16, 2023 02 Days	Deviation of Real gases from ideal behaviour, Derivation of Van der Waal's equation of state	
Aug 21, 2023- Aug 23, 2023 03 Days	Application in the calculation of Boyle's temperature(Compression factor)	
Aug 28, 2023- Aug 30, 2023 02 Days	Concept of Critical temperature, critical pressure, critical volume.	
Sept 04, 2023- Sept 06, 2023 02 Days	relationship between critical constants and Van der Waal's constants (derivation excluded)	
Sept 11, 2023- Sept 13, 2023 03 Days	Dual behavior of matter and radiation, de Broglie's relation, Heisenberg's uncertainty principle	
Sept 18, 2023- Sept 20, 2023 03 Days	concept of atomic orbitals, significance of quantum numbers, radial and angular wave functions, normal and orthogonal wave functions, significance	

	of psi and psi 2	
Sept 25, 2023- Sept 27, 2023 03 Days	shapes of s, p, d, f orbitals, Rules for filling electrons in various orbitals,	
Oct 02, 2023- Oct 04, 2023 02 Days	effective nuclear charge and Slater's rules, Classification of periodic table	
Oct 09, 2023- Oct 11, 2023 03 Days	definition of atomic and ionic radii, ionisation energy	
Oct 16, 2023- Oct 18, 2023 03 Days	electron affinity and electronegativity, trend in periodic table (in s and p-block elements)	
Oct 23, 2023- Oct 25, 2023 02 Days	Pauling, Mulliken, Allred Rachow and Mulliken Jaffe's electronegativity scale Sandereen's electron density ratio.	
Oct 30, 2023- Nov 01, 2023 02 Days	Localized and delocalized chemical bond, Van der Waals interactions.	
Nov 06, 2023- Nov 08, 2023 03 Days	Concept of resonance and its applications, hyperconjugation, inductive effect, Electromeric effect and their comparison.	
Nov 20, 2023- Nov 22, 2023 03 Days	Curved arrow notation, homolytic and heterolytic bond fission. Types of reagents: electrophiles and nucleophiles. Types of organic reactions: Substitution,	
Nov 27, 2023- Nov 29, 2023 02 Days	Addition, Condensation, Elimination, Rearrangement, Isomerization and Pericyclic reactions.	
Dec 04, 2023- Dec 06, 2023 03 Days	Reactive intermediates: Carbocations, carbanions, free radicals, carbenes (structure & stability).	
Dec 11, 2023- Dec 13, 2023 03 Days	Structure of liquids, Properties of liquids surface tension, refractive index	

Dec 18, 2023- Dec 20, 2023 03 Days	viscosity, vapour pressure and optical rotation. Classification of solids, Law of constancy of interfacial angles	
Jan 01, 2024- Jan 03, 2024 03 Days	law of rational indices, Miller indices , elementary ideas of symmetry and symmetry elements, seven crystal systems and fourteen Bravais lattices	
Jan 08, 2024- Jan 10, 2024 03 Days	X-ray diffraction, Brag's Law, a simple account of Laue method, rotating crystal method and powder pattern method.	

Dr Deepak Sharma
Associate Professor
Chemistry Department

Government PG College, Ambala Cantt. Subject: INORGANIC CHEMISTRY

Lesson Plan Session 2023-24 (Odd Semester) Class: B.Sc. II Yr Medical/N.M

Name: **Dr. DEEPAK SHARMA**

Semester: III

Week/ Working Days	Details	Remarks
July 24, 2023 July 29, 2023 02 Days	Definition of transition elements, position in the periodic table, General characteristic properties of d-Block elements	
July 31, 2023 Aug 05, 2023 02 Days	Comparison of properties of 3d elements with 4d and 5d elements with reference only to ionic radii, oxidation state	
Aug 07, 2023 Aug 12, 2023 02 Days	Comparison of properties of 3d elements with 4d and 5d elements with reference only to magnetic and spectral properties and stereo chemistry	
Aug 14, 2023 Aug 19, 2023 02 Days	Stability of various oxidation states and e.m.f (Latimer and Frost diagrams)	
Aug 21, 2023 Aug 26, 2023 02 Days	Structure and properties of some compounds of transition elements- TiO ₂ , VOCl ₂ , FeCl ₃	
Aug 28, 2023 Sept 02, 2023 02 Days	Structure and properties of some compounds of transition elements- CuCl ₂ and Ni(CO) ₄ .	
Sept 04, 2023 Sept 09, 2023 02 Days	Werner's theory of coordination compounds	
Sept 11, 2023 Sept 16, 2023 02 Days	effective atomic number, chelates, nomenclature of coordination compounds	
Sept 18, 2023 Sept 23, 2023 02 Days	effective atomic number, chelates, nomenclature of coordination compounds	
Sept 25, 2023	Isomerism in coordination compounds	

Sept 30, 2023 02 Days		
Oct 02, 2023 Oct 07, 2023 02 Days	Assessment test ; valence bond theory of transition metal complexes	
Oct 09, 2023 Oct 14, 2023 02 Days	valence bond theory of transition metal complexes	
Oct 16, 2023 Oct 21, 2023 02 Days	Non-aqueous solvents Physical properties of solvents types of solvents and their general characteristics	
Oct 23, 2023 Oct 28, 2023 02 Days	Assessment Tests Physical properties of solvents types of solvents and their general characteristics	
Oct 30, 2023 Nov 04, 2023 02 Days	reactions in non aqueous solvents with reference to liquid NH ₃	
Nov 06, 2023 Nov 11, 2023 02 Days	Diwali Break	
Nov 13, 2023 Nov 18, 2023 02 Days	reactions in non aqueous solvents with reference to liquid SO ₂	
Nov 20, 2023 Nov 24, 2023	Semester End Final Examinations	

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