

Govt. P.G. College, Safidon (Jind) - 126112

Session: 2023-2024 (Odd Semester)

Lesson Plan

Name of Teacher: Ms. ANJU

Subject: CHEMISTRY Class: B.Sc II

Sr. No.	Week	Date	Topic
1	1st	24 July - 01 Aug	Thermodynamics - system, surrounding etc, Types of systems
2	2nd	02 Aug - 09 Aug	Intensive & Extensive properties, State & path function
3	3rd	10 Aug - 17 Aug	Thermodynamic process,
4	4th	18 Aug - 25 Aug	First Law of Thermodynamics, Heat capacity, Joule-Thomson Experiment,
5	5th	26 Aug - 3 Sept	Calculation of dq , dU , dW under isothermal & Adiabatic process.
6	6th	04 Sept - 11 Sept	Chemical Equilibrium, chemical potential,
7	7th	12 Sept - 19 Sept	<u>Test</u> Temperature dependence of K_m constant
8	8th	20 Sept - 27 Sept	Clausius - Clapeyron Eq ⁿ
9	9th	28 Sept - 05 Oct	<u>Assignment - I</u> Nernst Distribution Law,
10	10th	06 Oct - 13 Oct	Thermodynamic derivation of Nernst Distribution law
11	11th	14 Oct - 21 Oct	<u>Test</u> Determination of degree of hydrolysis & K_a of aniline
12	12th	22 Oct - 30 Oct	K_m constant of potassium tri-iodide complex
13	13th	02 Nov - 09 Nov	Process of Extraction
14	14th	14 Nov - 21 Nov	Numerical problems
15	15th	22 Nov - 30 Nov	Revision
16	16th	29 Nov - 03 Dec	Revision

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Lesson Plan

Name of Teacher: Ms. ANJU

Subject: CHEMISTRY

Class: B.Sc. III

Sr. No.	Week	Date	Topic
1	1st	24 July - 01 Aug	Quantum Mechanics - Black Body Radiation
2	2nd	02 Aug - 09 Aug	Plank's law, Photoelectric effect, Commutation relations.
3	3rd	10 Aug - 17 Aug	Hamiltonian operator, Hermitian operator, Particle in one D box.
4	4th	18 Aug - 25 Aug	Postulates of Quantum mechanics, <u>Assignment</u>
5	5th	26 Aug - 3 Sept	Role of operators in Quantum Mechanics
6	6th	04 Sept - 11 Sept	Average value of square of Hermitian as a positive quantity.
7	7th	12 Sept - 19 Sept	Physical properties & Molecular Structure
8	8th	20 Sept - 27 Sept	Dipole Moment, induced dipole moment <u>Test</u>
9	9th	28 Sept - 05 Oct	Magnetic permeability, Magnetic susceptibility
10	10th	06 Oct - 13 Oct	Spectroscopy - EM Radiation, Degree of freedom
11	11th	14 Oct - 21 Oct	Rotational spectrum
12	12th	22 Oct - 30 Oct	Vibrational spectrum, Raman spectrum
13	13th	02 Nov - 09 Nov	<u>Test</u>
14	14th	14 Nov - 21 Nov	Metal-ligand Bonding in Transition Metal Complexes
15	15th	22 Nov - 30 Nov	Thermodynamic & kinetic Aspects of Metal Complexes.
16	16th	29 Nov - 03 Dec	

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Lesson Plan

Name of Teacher: Seema Rani

Subject: Chemistry

Class: B.Sc - II

(W, M & Med)

Sr. No.	Week	Date	Topic
1	1st	24 July - 01 Aug	Alcohols → methods of formation by reduction of aldehyde, ketone
2	2nd	02 Aug - 09 Aug	Carboxylic acids, esters, Dihydric alcohols, Pinacol-pinacolone rearrangement, (Assignment-1)
3	3rd	10 Aug - 17 Aug	Phenols, Preparation of phenols,
4	4th	18 Aug - 25 Aug	Reaction of phenols, Claisen rearrangement, Reimer-Tiemann reaction, Kolbe reaction
5	5th	26 Aug - 3 Sept	Schotten-Baumann reaction, (Test-1)
6	6th	04 Sept - 11 Sept	Epoxides → Synthesis of epoxides, Acid & base-catalyzed ring opening of epoxide, orientation of epoxide ring opening.
7	7th	12 Sept - 19 Sept	Ultraviolet (UV) absorption spectroscopy, absorption laws, molar absorptivity
8	8th	20 Sept - 27 Sept	UV spectra, effect of conjugation, chromophore, auxochrome.
9	9th	28 Sept - 05 Oct	Bathochromic, hypsochromic, hyperchromic & hypochromic shifts
10	10th	06 Oct - 13 Oct	Woodward-Fieser rules, calculation of λ_{max} of simple conjugated diene.
11	11th	14 Oct - 21 Oct	Carboxylic acids and acid derivatives
12	12th	22 Oct - 30 Oct	Nomenclature, structure, bonding
13	13th	02 Nov - 09 Nov	Acidity of carboxylic acid, Preparation of carboxylic acid (Assignment-II)
14	14th	14 Nov - 21 Nov	Hell-Volhard-Zelinsky Rxn, Reduction of carboxylic acid, decarboxylation
15	15th	22 Nov - 30 Nov	Relative stability of acyl derivatives, interconversion of acid derivatives (Test-II)
16	16th	29 Nov - 03 Dec	Mechanism of esterification and hydrolysis, Revision

Seema Rani

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Lesson Plan

Name of Teacher: Seema Rani

Subject: Chemistry (Major) Class: B.Sc - 1 (N.M & Med)

Sr. No.	Week	Date	Topic
1	1st	24 July - 01 Aug	Gaseous state, Kinetic theory of gases, collision diameter, collision number, Deviation of Real gases from ideal behaviour.
2	2nd	02 Aug - 09 Aug	Derivation of van der Waals eq ⁿ of state its application. (Test-I)
3	3rd	10 Aug - 17 Aug	Critical phenomenon, Critical pressure, critical volume.
4	4th	18 Aug - 25 Aug	Atomic structure, Dual behaviour of matter, de Broglie's eq ⁿ , (Assignment)
5	5th	26 Aug - 3 Sept	Heisenberg's uncertainty principle, Concepts of atomic orbital shapes of s, p, d, f orbital, effective nuclear charge, Slater's rule
6	6th	04 Sept - 11 Sept	Periodic table and atomic properties definition of atomic and ionic radii, ionization energy, electron affinity and electronegativity. (Test-II)
7	7th	12 Sept - 19 Sept	Structure and bonding - resonance, hyperconjugation, inductive effect
8	8th	20 Sept - 27 Sept	Mechanism of organic reaction → Substitution, Addition, Condensation
9	9th	28 Sept - 05 Oct	Elimination, Rearrangement, Pericyclic reaction, intermediates.
10	10th	06 Oct - 13 Oct	Liquid state - Surface tension, refractive index, viscosity, vapour pressure.
11	11th	14 Oct - 21 Oct	Solid state → Classification of solids: Law of constancy of interfacial angles, Law of rational indices, Miller indices, Bragg's law, X-ray crystal method and powder pattern.
12	12th	22 Oct - 30 Oct	Revision
13	13th	02 Nov - 09 Nov	
14	14th	14 Nov - 21 Nov	
15	15th	22 Nov - 30 Nov	
16	16th	29 Nov - 03 Dec	

Seema Rani

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Session: 2023-2024 (Odd Semester)

Lesson Plan

Name of Teacher: ... Seema Rani Subject: ... Chemistry (Minor) Class: ... B.Sc - I

Sr. No.	Week	Date	Topic
1	1st	24 July - 01 Aug	Covalent Bond Valence bond theory approach
2	2nd	02 Aug - 09 Aug	Shapes of simple inorganic molecules (VSEPR) theory, hybridization
3	3rd	10 Aug - 17 Aug	molecular orbital theory (N_2, O_2) (CO & NO)
4	4th	18 Aug - 25 Aug	dipole moment and percentage ionic character in covalent bond
5	5th	26 Aug - 3 Sept	Chemical Kinetics :- Reaction rates, (Assignment)
6	6th	04 Sept - 11 Sept	Rate equation, factors influencing the rate of reaction, Order
7	7th	12 Sept - 19 Sept	and molecularity of a reaction. integration rate for zero,
8	8th	20 Sept - 27 Sept	first, second order reaction,
9	9th	28 Sept - 05 Oct	Half life period of a reaction. (Test-1)
10	10th	06 Oct - 13 Oct	Alkanes, nomenclature, classification of carbon atoms in alkanes,
11	11th	14 Oct - 21 Oct	isomerism in alkanes, methods of formation. Wurtz reaction,
12	12th	22 Oct - 30 Oct	Kolbe reaction, mechanism of free radical halogenation
13	13th	02 Nov - 09 Nov	reactivity and selectivity. (Test-II)
14	14th	14 Nov - 21 Nov	Metallic Bond and Semiconductors metallic bond - Qualitative of valence bond and Band theories
15	15th	22 Nov - 30 Nov	of metallic bond (conductors) Semiconductors
16	16th	29 Nov - 03 Dec	(types & application) revision

Seema Rani