

Government College, Chhachhrauli

Lesson Plan

Name of Teacher: Ms. Meenu Rani Academic Session: 2024-25

Class: B.Sc. 3rd Semester: VI Subject: Chemistry

Sr.No.	Dates	Topics Covered
1.	Jan 1 - Jan 5	Introduction to Statistical Mechanics
2.	Jan 6 - Jan 12	Maxwell-Boltzmann Statistics, Partition Function
3.	Jan 13 - Jan 19	Photochemistry: Radiation and Matter Interaction
4.	Jan 20 - Jan 26	Photochemical Processes and Applications
5.	Jan 27 - Feb 2	Solutions and Colligative Properties - Basics
6.	Feb 3 - Feb 9	Elevation in Boiling Point, Freezing Point Depression
7.	Feb 10 - Feb 16	Phase Equilibrium: Gibbs Phase Rule
8.	Feb 17 - Feb 23	Phase Equilibria of One and Two Component Systems
9.	Feb 24 - Mar 2	Acids and Bases: Arrhenius, Bronsted-Lowry Theories
10.	Mar 3 - Mar 8	HSAB Principle, Applications in Chemistry
11.	Mar 9 - Mar 16	No Classes (Holi Vacation)
12.	Mar 17 - Mar 23	Organometallic Chemistry: Definition, Classification
13.	Mar 24 - Mar 30	Bioinorganic Chemistry: Metalloporphyrins
14.	Mar 31 - Apr 6	Silicones and Phosphazenes: Properties, Uses
15.	Apr 7 - Apr 13	Organic Synthesis via Enolates, Claisen Condensation
16.	Apr 14 - Apr 20	Heterocyclic Compounds: Synthesis, Applications
17.	Apr 21 - Apr 27	Amino Acids and Proteins: Structure, Classification
18.	Apr 28 - Apr 30	Synthetic Polymers: Polymerization Mechanisms

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Name of Teacher: Ms. Meenu Rani Academic Session:2024-25

Class: B.Sc. 1st Semester: II Subject:Minor Chemistry

Sr. no.	Dates	Topics Covered
1	10 – 14 Feb	Periodic Table and Atomic Properties – Atomic & Ionic Radii, Ionization Energy
2	17 – 21 Feb	Electron Affinity, Electronegativity Trends, Effective Nuclear Charge, Slater's Rules
3	24 – 28 Feb	Ionic Solids – Stoichiometric & Non-stoichiometric Defects, Lattice Energy
4	3 – 7 Mar	Born-Haber Cycle, Solvation Energy, Solubility of Ionic Solids, Polarizability of Ions, Fajan's Rule
5	9 – 16 Mar	No Classes
6	17 – 21 Mar	Structure and Bonding in Organic Compounds – Localized & Delocalized Chemical Bonds, Van der Waals Interactions
7	24 – 28 Mar	Resonance Conditions, Hyperconjugation, Inductive Effect, Electromeric Effect
8	31 Mar – 4 Apr	Gaseous State – Kinetic Theory of Gases, Root Mean Square Velocity, Average & Most Probable Velocity
9	7 – 11 Apr	Collision Diameter, Collision Number, Collision Frequency, Mean Free Path (Derivations Excluded)
10	14 – 18 Apr	Practical Work – Acid/Base Titration (Oxalic Acid with NaOH), Redox Titration (Fe^{2+} with KMnO_4)
11	21 – 25 Apr	Surface Tension Determination (Stalagmometer Method), Preparation of Iodoform
12	28 – 30 Apr	Revision & Doubt Clearing

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Lesson Plan

Name of Teacher: Ms. Meenu Rani

Academic Session:2024-25

Class: B.Sc. 2nd

Semester: IV

Subject:Major Chemistry

Week	Topics Covered
10-14 Feb	Chemistry of d-Block Elements: Definition, general characteristics, oxidation states.
17-21 Feb	Chemistry of d-Block Elements: Magnetic properties, stability of oxidation states, Latimer and Frost diagrams.
24-28 Feb	Chemistry of d-Block Elements: Structure of some compounds (TiO ₂ , VOCl ₂ , FeCl ₃ , CuCl ₂ , Ni(CO) ₄).
3-7 March	Chemistry of f-Block Elements: Lanthanide contraction, oxidation states, magnetic properties.
9-16 March	Holi Break – No Classes
17-21 March	Chemistry of f-Block Elements: Actinides, transuranic elements, comparison with transition elements.
24-28 March	Theory of Qualitative & Quantitative Analysis: Chemistry of radicals, acid radical identification.
31 March - 4 April	Theory of Qualitative & Quantitative Analysis: Common ion effect, solubility product, precipitation.
7-11 April	Thermodynamics-I: First law, internal energy, enthalpy, heat capacity.
14-18 April	Thermodynamics-I: Joule-Thomson coefficient, gas expansion calculations.
21-25 April	Thermodynamics-II & Chemical Equilibrium: Second law, Carnot cycle, entropy, equilibrium constant.
28-30 April	Alcohols, Phenols, Aldehydes & Ketones: Nomenclature, preparation, reactions, mechanisms.

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Lesson Plan

Name of Teacher: Ms. Meenu Rani Academic Session:2024-25

Class: B.Sc. 1st Semester: II Subject:MajorChemistry

Sr. No.	Dates	Topics Covered
1	Feb 10 - Feb 16	Introduction to Covalent Bond: Valence Bond Theory, VSEPR Theory
2	Feb 17 - Feb 23	Hybridization, Molecular Orbital Theory, Ionic Solids
3	Feb 24 - Mar 2	Lattice Energy, Born-Haber Cycle, Solvation Energy
4	Mar 3 - Mar 8	Chemical Kinetics: Rate of Reaction, Order and Molecularity
5	Mar 9 - Mar 16	No Classes
6	Mar 17 - Mar 23	Rate Laws, Activation Energy, Half-Life
7	Mar 24 - Mar 30	Distribution Law: Nernst Distribution Law, Hydrolysis
8	Mar 31 - Apr 6	Alkanes: Nomenclature, Isomerism, Sources
9	Apr 7 - Apr 13	Formation of Alkanes: Wurtz Reaction, Kolbe Reaction, Free Radical Halogenation
10	Apr 14 - Apr 20	Cycloalkanes: Nomenclature, Baeyer's Strain Theory
11	Apr 21 - Apr 27	Alkenes: Nomenclature, Isomerism, Methods of Formation
12	Apr 28 - Apr 30	Reactions of Alkenes: Addition Reactions, Markovnikov's Rule