Sir Chhotu Ram Govt. College for Women, Sampla (Rohtak)

Lesson plan of ODD Semester (session 2025-2026)

Name of the Faculty : Ms. Monika

Course/Class : B.Sc- I

Semester : Semester-I

Subject : MDC Chemistry

Week/Month	Name of Topics
14-15 July 2025	**Unit-1 Basic Concepts of Chemistry** Introduction, Dalton atomic theory, concept of atom
21-22 July 2025	Element and molecule, matter and its classification
28-29 July 2025	Chemical reactions, empirical and molecular formula, atomic mass, molecular mass, mole concept
4-5 August 2025	ways of expressing concentration of solutions (molarity, normality, molality, mole fraction, strength).
11-12 August 2025	**Unit – II Atomic Structure** Thomson's model, Rutherford's model, Bohr's model
18-19 August 2025	Electron, proton, neutron and their characteristics, atomic number, atomic mass, isotopes, isobars and isotones
25-26 August 2025	Dual nature of matter and light, de Broglie's relationship, Heisenberg Uncertainty principle
1-2 September 2025	Concept of orbit and orbital, quantum numbers, shapes of s, p and d orbitals, rules for filling electrons in the orbitals (Aufbau principle, Pauli exclusion principle and Hund's rule)
8-9 September 2025	Electronic configuration of atoms, extra stability of half-filled and completely filled orbitals.
15-16 September 2025	**Unit – III States of Matter** Introduction to the three states of matter and intermolecular interactions. Gaseous state: Boyle's

	law, Charles' law, Gay Lussac's law and Avogadro's Law with practical implications.
22-23 September 2025	Elementary idea of kinetic energy, molecular speeds, ideal gas equation and deviation from ideal behavior.
29-30 September 2025	Liquid state: Melting and boiling points, vapor pressure, viscosity and surface tension.
6-7 October 2025	Solid state: General characteristics of solid state, crystalline and amorphous solids, classification of crystalline solids.
13-14 October 2025	Diwali Vacations
20-21 October 2025	Diwali Vacations
27-28 October 2025	Chemistry in Everyday Life Drugs and their classification with suitable examples, food adulterants and preservatives,
3-4 November 2025	Artificial sweetening agents, antioxidants, soaps and detergents and their cleansing action.
10-11 November 2025	Revision of Syllabus
17-18 November 2025	Revision of Syllabus
19 November 2025 Onwards	Exam Starts

Sir Chhotu Ram Govt. College for Women, Sampla (Rohtak)

Lesson plan of Odd Semester (session 2025-2026)

Name of the Faculty : Ms. Monika

Course/Class : B.Sc- II

Semester : Semester-III

Subject : SEC Chemistry

Week/Month	**Name of Topics**
18-19 July 2025	**Unit-I Basic Concepts** Components of cells and batteries, classification of cells and batteries
25-26 July 2025	Operation of a cell, theoretical cell voltage, capacity
1-2 August 2025	Energy, specific energy and energy density of practical batteries.
8-9 August 2025	**Unit-II Battery Design and Factors Affecting Battery Performance** General introduction, designing to eliminate potential safety problem
15-16 August 2025	Battery safeguards when using discrete batteries, battery construction
22-23 August 2025	Design of rechargeable batteries, factors affecting battery performance.
29-30 August 2025	**Unit-III Primary Batteries** General characteristics and applications of primary batteries, types and characteristics of primary batteries
5-6 September 2025	Comparison of the performance characteristics of primary battery systems, recharging primary batteries. A) Zinc-Carbon Batteries (Leclanche´ and Zinc Chloride Cell Systems)
12-13 September 2025	General characteristics, cell chemistry, types of cells and batteries, construction, cell components.
19-20 September 2025	B) Magnesium and Aluminum Batteries: General characteristics, cell chemistry, construction of Mg/MnO2 batteries
26-27 September	Performance characteristics of

2025	Mg/MnO2 batteries, sizes and types of Mg/MnO2 batteries, other types of magnesium primary batteries.
3-4 October 2025	**Unit-IV Secondary Batteries** General characteristics and applications of secondary batteries
10-11 October 2025	Types and characteristics of secondary batteries, comparison of performance characteristics for secondary battery systems and introduction
17-18 October 2025	Diwali Break
24-25 October 2025	Chemistry, construction, performance characteristics, charging characteristics of following batteries: Lead batteries
31-1 November 2025	Lithium ion batteries, Iron electrode batteries, Nickel-Cadmium, Nickel-Metal hydride, Nickel- Zinc batteries.
7-8 November 2025	Revision of Syllabus
14-15 November 2025	Revision of Syllabus

Sir Chhotu Ram Govt. College for Women, Sampla (Rohtak)

Lesson plan of Odd Semester (session 2025-2026)

Name of the Faculty : Ms. Monika

Course/Class : B.SC- III

Semester : Semester-V

Subject : Physical Chemistry

Week/Month	Name of Topics
14-15 July 2025	**Section-A** Quantum Mechanic s-I, Black-body radiation, Plank's radiation law, photoelectric effect, heat capacity of solids.
21-22 July 2025	Compton effect, wave function and its significance of Postulates of quantum mechanics, quantum mechanical operator, commutation relations
28-29 July 2025	Hamiltonial operator, Hermitian operator, average value of square of Hermitian as a positive quantity, Role of operators in quantum mechanics
4-5 August 2025	To show quantum mechanically that position and momentum cannot be predicated simultaneously,
11-12 August 2025	Determination of wave function & energy of a particle in one dimensional box, Pictorial representation and its significance.
18-19 August 2025	**Section-B** Physical Properties and Molecular Structure, Optical activity, polarization – (clausius – Mossotti equation).
25-26 August 2025	Orientation of dipoles in an electric field, dipole moment, included dipole moment, measurement of dipole moment-temperature method and refractivity method

1-2 September 2025	Dipole moment and structure of molecules, Magnetic permeability, magnetic susceptibility and its determination.
8-9 September 2025	Application of magnetic susceptibility, magnetic properties-paramagnetism, diamagnetism and ferromagnetics.
15-16 September 2025	**Section-C Spectroscopy-I :** Introduction: Electromagnetic radiation, regions of spectrum, basic features of Spectroscopy
22-23 September 2025	Statement of Born-oppenheimer approximation, Degrees of freedom. Rotational Spectrum Diatomic molecules. Energy levels of rigid rotator (semi-classical principles),
29-30 September 2025	Selection rules, spectral intensity distribution using population distribution (Maxwell-Boltzmann distribution)
6-7 October 2025	Determination of bond length, qualitative description of non-rigid rotor, isotope effect
13-14 October 2025	Diwali Break
20-21 October 2025	Diwali Break
27-28 October 2025	**Section-D Spectroscopy-II** : Vibrational spectrum Infrared spectrum: Energy levels of simple harmonic oscillator, selection rules, pure vibrational spectrum
3-4 November 2025	Intensity, determination of force constant and qualitative relation of force constant and bond energies, effects of anharmonic motion
10-11 November 2025	Isotopic effect on the spectra., idea of vibrational frequencies of different functional groups Raman Spectrum: Concept of polarizibility, pure rotational and pure vibrational, Raman spectra of diatomic molecules, selectin rules, Quantum theory of

	Raman spectra.
17-18 November 2025	Revision of Syllabus
19 November 2025 Onwards	Exam Starts