

Govt. College for Women, Sampla (Rohtak)

Lesson plan of ODD Semester (session 2024-2025)

Name of the Faculty : Ms. Seema

Course/Class : B.SC- I

Semester : Semester-I

Subject : Multidisciplinary Course

Week/Month	Name of Topics
4th week of July	Basic Concepts of Chemistry Introduction, Dalton atomic theory, concept of atom, element and molecule, matter and its classification
1st week of August	chemical reactions, empirical and molecular formula, atomic mass, molecular mass
2nd week of August	mole concept, ways of expressing concentration of solutions (molarity, normality, molality, mole fraction, strength).
3rd week of August	Atomic Structure Thomson's model, Rutherford's model, Bohr's model, electron, proton, neutron and their characteristics,
4th week of August	atomic number, atomic mass, isotopes, isobars and isotones, dual nature of matter and light
1st week of September	De Broglie's relationship, Heisenberg Uncertainty principle, concept of orbit and orbital, quantum numbers, shapes of s, p and d orbitals,.
2nd week of September	11,12,13 Sessional I
3rd week of September	rules for filling electrons in the orbitals (Aufbau principle, Pauli exclusion principle and Hund's rule), electronic configuration of atoms, extra stability of half-filled and completely filled orbitals
4th week of September	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.
1st week of October	Elementary idea of kinetic energy, molecular speeds, ideal gas equation and deviation from ideal behavior.
2nd week of October	Liquid state: Melting and boiling points, vapor pressure, viscosity and surface tension.

3 rd week of October	Solid state: General characteristics of solid state, crystalline and amorphous solids, classification of crystalline solids.
4 th week of October	DIWALI BREAK
1 st week of November	Chemistry in Everyday Life Drugs and their classification with suitable examples, food adulterants and preservatives.
2 nd week of November	12,13,14 Sessional II
3 rd week of November	artificial sweetening agents, antioxidants, soaps and detergents and their cleansing action
4 th week of November	Revision Exam Starts

Ms Seema
Assistant Professor
Department of Chemistry

Govt. College for Women, Sampla (Rohtak)

Lesson plan of Even Semester (session 2024-2025)

Name of the Faculty : Ms. Seema

Course/Class : B.SC- II

Semester : Semester-III

Subject : Inorganic Chemistry

Week/Month	Name of Topics
4 th week of July	Chemistry of Elements of 1st transition series:

	Definition of transition elements, position in the periodic table General characteristics & properties of 1st transition elements
1st week of August	Structures & properties of some compounds of transition elements – TiO ₂ , VOCl ₂ and FeCl ₃
2nd week of August	Structures & properties of some compounds of transition elements – CuCl ₂ and Ni (CO) ₄
3rd week of August	Section-B Chemistry of Elements of II nd & III rd transition series General characteristics and properties of the II nd and III rd transition elements
4th week of August	Comparison of properties of 3d elements with 4d & 5d elements with reference to ionic radii and oxidation state
1st week of September	Comparison of properties of 3d elements with 4d & 5d elements with reference magnetic and Spectral properties and stereochemistry
2nd week of September	11,12,13 Sessional I
3rd week of September	Section –C Coordination Compounds Werner's coordination theory, effective atomic number concept, chelates,
4th week of September	nomenclature of coordination compounds, isomerism in coordination compounds,
1st week of October	valence bond theory of transition metal complexes
2nd week of October	Section-D Non-aqueous Solvents, Physical properties of a solvent,
3rd week of October	types of solvents and their general characteristics,
4th week of October	DIWALI BREAK
1st week of November	reactions in non-aqueous solvents with reference to liquid NH ₃ and liquid SO ₂
2nd week of November	12,13,14 Sessional II
3rd week of November	Revision of Section A and B
4th week of November	Revision of Section C and D Exam Starts

Ms. Seema
Assistant Professor
Department of Chemistry

Govt. College for Women, Sampla (Rohtak)

Lesson plan of Even Semester (session 2024-2025)

Name of the Faculty : **Ms. Seema**
Course/Class : **B.SC- III**
Semester : **Semester-V**
Subject : **Organic Chemistry**

Week/Month	Name of Topics
4th week of July	NMR Spectroscopy-I Principle of nuclear magnetic resonance, the PMR spectrum
1st week of August	number of signals, peak areas, equivalent and nonequivalent protons positions of signals and chemical
2nd week of August	shift,shielding and deshielding of protons, proton counting,splitting of signals and coupling constants, magnetic equivalence of protons.
3rd week of August	NMR Spectroscopy-II Discussion of PMR spectra of the molecules: ethyl bromide, n-propyl bromide

4th week of August	isopropyl bromide, 1,1-dibromoethane, 1,1,2-tribromoethane, ethanol, acetaldehyde
1st week of September	ethyl acetate, toluene, benzaldehyde and acetophenone. Simple problems on PMR spectroscopy for structure determination of organic compounds.
2nd week of September	11,12,13 Sessional I
3rd week of September	Carbohydrates-I Classification and nomenclature. Monosaccharides, mechanism of osazone formation
4th week of September	interconversion of glucose and fructose, chain lengthening and chain shortening of aldoses. Configuration of monosaccharides. Erythro and threo diastereomers.
1st week of October	Conversion of glucose in to mannose. Formation of glycosides, ethers and esters. Determination of ring size of glucose and fructose.
2nd week of October	Open chain and cyclic structure of D(+)-glucose & D(-) fructose. Mechanism of mutarotation. Structures of ribose and deoxyribose.
3rd week of October	1. Carbohydrates-II An introduction to disaccharides (maltose, sucrose and lactose) and polysaccharides (starch and cellulose) without involving structure determination.
4th week of October	DIWALI BREAK
1st week of November	2. Organometallic Compounds Organomagnesium compounds: the Grignard reagents-formation, structure

	and chemical reactions.
2nd week of November	12,13,14 Sessional II
3rd week of November	Organozinc compounds: formation and chemical reactions. Organolithium compounds: formation and chemical reactions.
4th week of November	Revision Exam Starts

Ms. Seema
Assistant Professor
Department of Chemistry