

Govt. College for Women, Sampla (Rohtak)

Lesson plan of EVEN Semester (session 2024-2025)

Name of the Faculty : **Ms. Monika**

Course/Class : **B.SC- II**

Semester : **Semester-IV**

Subject : **Inorganic Chemistry**

Week/Month	Name of Topics
2nd Week of Jan	Chemistry of f – block elements: Lanthanides: Introduction
3rd Week of Jan	Electronic structure, oxidation states
4th Week of Jan	Ionic radii and lanthanide contraction,
5th Week of Jan	complex formation, occurrence and isolation,
1st Week of Feb	lanthanide compounds
2nd Week of Feb	Chemistry of f – block elements: Actinides General features and chemistry of actinides,
3rd Week of Feb	Chemistry of separation of Np, Pu and Am from U
4th Week of Feb	Comparison of properties of Lanthanides and Actinides and with transition elements .
1st Week of March	Theory of Qualitative and Quantitative Inorganic Analysis-I
2nd Week of March	HOLI BREAK (09 March – 16 March)
3rd Week of March	Chemistry of analysis of various acidic radicals
4th Week of March	Chemistry of identification of acid radicals in typical combinations
1st Week of April	Chemistry of interference of acid radicals including their removal in the analysis of basic radicals.
2nd Week of April	Theory of Qualitative and Quantitative Inorganic Analysis-II

3rd Week of April	Chemistry of analysis of various groups of basic radicals
4th Week of April	Theory of precipitation, coprecipitation,
5th Week of April	Post- precipitation, Purification of precipitates
1st Week of May	Revision of Syllabus
06 May onwards	Exam Starts

Ms. Monika
Assistant Professor
Department of Chemistry

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Name of the Faculty : **Ms. Monika**

Course/Class : **B.SC- III**

Semester : **Semester-VI**

Subject : **Physical Chemistry**

Week/Month	Name of Topics
2nd Week of Jan	Spectroscopy-III Electronic Spectrum: Introduction
3rd Week of Jan	Concept of potential energy curves for bonding and antibonding molecular orbitals
4th Week of Jan	Qualitative description of selection rules and Franck-Condon principle.
5th Week of Jan	Qualitative description of sigma and pie and n molecular orbital (MO) their energy level and respective transitions.
1st Week of Feb	Photochemistry: Interaction of radiation with matter, difference between thermal and photochemical processes.
2nd Week of Feb	Laws of photochemistry: Grotthus-Draper law, Stark-Einstein law (law of photochemical equivalence)
3rd Week of Feb	Jablonski diagram depicting various processes occurring in the excited state, qualitative description of fluorescence
4th Week of Feb	Phosphorescence, non-radiative processes (internal conversion, intersystem crossing), quantum yield, photosensitized reactions-energy transfer processes (simple examples)
1st Week of March	Solutions: Dilute Solutions and Colligative Properties, Ideal and non-ideal solutions

2nd Week of March	HOLI BREAK (09 March – 16 March)
3rd Week of March	Methods of expressing concentrations of solutions, activity and activity coefficient. Dilute solution, Colligative properties, Raoult's law, relative lowering of vapour pressure, molecular weight determination
4th Week of March	Osmosis law of osmotic pressure and its measurement, determination of molecular weight from osmotic pressure.
1st Week of April	Elevation of boiling point and depression of freezing point, Thermodynamic derivation of relation between molecular weight and elevation in boiling point and depression in freezing point.
2nd Week of April	Experimental methods for determining various colligative properties. Abnormal molar mass, degree of dissociation and association of solutes.
3rd Week of April	Statement and meaning of the terms – phase component and degree of freedom
4th Week of April	Thermodynamic derivation of Gibbs phase rule, phase equilibria of one component system –Example – water and Sulphur systems.
5th Week of April	Phase equilibria of two component systems solid-liquid equilibria, simple eutectic. Example Pb-Ag system, desilverisation of lead
1st Week of May	Revision of Syllabus
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