

SMSD Govt. College Nangal Chaudhary (Mahendergarh)
Lesson Plan- B.Sc. 6th Semester (Non Medical)
Inorganic/ Physical Chemistry-Session 2023-24

Date	Day	Topic
		Inorganic Chemistry
12-01-2024	Friday	Section-A Organometallic Chemistry Definition, nomenclature and classification of organometallic compounds.
13-01-2024	Saturday	Section-A Organometallic Chemistry Definition, nomenclature and classification of organometallic compounds.
18-01-2024	Thursday	Section-A Preparation, properties, and bonding of alkyls of Li, Al, Hg, and Sn a brief account of metal-ethylenic complexes,
19-01-2024	Friday	Section-A Preparation, properties, and bonding of alkyls of Li, Al, Hg, and Sn a brief account of metal-ethylenic complexes,
20-01-2024	Saturday	Section-A Mononuclear carbonyls and the nature of bonding in metal carbonyls.
25-01-2024	Thursday	Section-A Mononuclear carbonyls and the nature of bonding in metal carbonyls.
26-01-2024	Friday	Republic Day- Holiday
27-01-2024	Saturday	Section-B Acids and Bases, HSAB Concept, Arrhenius, Bronsted – Lowry, the Lux – Flood, Solvent system and Lewis concepts of acids & base
01-02-2024	Thursday	Section-B Acids and Bases, HSAB Concept, Arrhenius, Bronsted – Lowry, the Lux – Flood, Solvent system and Lewis concepts of acids & base
02-02-2024	Friday	Section-B Relative strength of acids & bases, Concept of Hard and Soft Acids & Bases. Symbiosis, electronegativity and hardness and softness
03-02-2024	Saturday	Section-B Electronegativity and hardness and softness
		Physical Chemistry
08-02-2024	Thursday	Section-A Spectroscopy-III - Electronic Spectrum- Concept of potential energy curves for bonding and antibonding molecular orbitals
09-02-2024	Friday	Section-A Qualitative description of selection rules and Franck- Condon principle..
10-02-2024	Saturday	Section-A Qualitative description of sigma and pie and n molecular orbital (MO) their energy level and respective transitions
15-02-2024	Thursday	Section-B Photochemistry-Interaction of radiation with matter, difference between thermal and photochemical processes.
16-02-2024	Friday	Section-B Laws of photochemistry: Grotthus-Draper law,

S. Kumar

17-02-2024	Saturday	Section-B Stark- Einstein law (law of photochemical equivalence)
22-02-2024	Thursday	Section-B Jablonski diagram depicting various processes occurring in the excited state,
23-02-2024	Friday	Section-B qualitative description of fluorescence, phosphorescence, non-radiative processes (internal conversion, intersystem crossing)
24-02-2024	Saturday	Guru Ravidas Jayanti- Holiday
26-02-2024	Monday	Section-B quantum yield, photosensitized reactions-energy transfer processes (simple examples)
27-02-2024	Tuesday	Section-C Solutions: Dilute Solutions and Colligative Properties
28-02-2024	Wednesday	Section-C Ideal and non-ideal solutions, methods of expressing concentrations of solutions, activity and activity coefficient.
04-03-2024	Monday	Section-C Dilute solution, Colligative properties, Raoult's law, relative lowering of vapour pressure,
05-03-2024	Tuesday	Section-C molecular weight determination, Osmosis law of osmotic pressure and its measurement,
06-03-2024	Wednesday	Section-C Osmosis law of osmotic pressure and its measurement,
11-03-2024	Monday	Section-C Determination of molecular weight from osmotic pressure. Elevation of boiling point and depression of freezing point,
12-03-2024	Tuesday	Section-C Determination of molecular weight from osmotic pressure. Elevation of boiling point and depression of freezing point,
13-03-2024	Wednesday	Section-C Thermodynamic derivation of relation between molecular weight and elevation in boiling point.
18-03-2024	Monday	Section-C Thermodynamic derivation of relation between molecular weight and depression in freezing point.
19-03-2024	Tuesday	Section-C Experimental methods for determining various colligative properties.
20-03-2024	Wednesday	Section-C Abnormal molar mass, degree of dissociation and association of solutes.
23-03-2024 To 31-03-2024		Holi Festival Holidays
01-04-2024	Monday	Section-D Phase Equilibrium-Statement and meaning of the terms – phase component
02-04-2024	Tuesday	Section-D Phase Equilibrium-Statement and meaning of the terms – phase component and degree of freedom, thermodynamic derivation of Gibbs phase rule,
03-04-2024	Wednesday	Section-D Phase Equilibrium-Statement and meaning of the terms – phase component and degree of freedom, thermodynamic derivation of Gibbs phase rule,

Suma

08-04-2024	Monday	Section-D Phase Equilibrium-Statement and meaning of the terms – phase component and degree of freedom, thermodynamic derivation of Gibbs phase rule,
09-04-2024	Tuesday	Holi festival Holidays
10-04-2024	Wednesday	Section-D Phase equilibria of one component system –Example – water and Sulphur systems
15-04-2024	Monday	Section-D Phase equilibria of two component systems solid-liquid equilibria, simple eutectic Example Pb-Ag system, desilverisation of lead.
16-04-2024	Tuesday	Section-D Phase equilibria of two component systems solid-liquid equilibria, simple eutectic Example Pb-Ag system, desilverisation of lead.
17-04-2024	Wednesday	Conceptual and Exam related Important Questions
22-04-2024	Monday	Conceptual and Exam related Important Questions
23-04-2024	Tuesday	Term End Semester Exam Preparation
24-04-2024	Wednesday	

Examiner

NAME: DR RAJDEEP YADAV

EXTENSION LECTURER

DEPT. OF CHEMISTRY,

SMSD GOVT COLLEGE NANGAL CHOUDHARY

DATE		CURICULUM (BSc VI SEM)	session 2023-24
12-01-24 27-01-24	to	Inorganic chemistry Section—C Bioinorganic Chemistry Essential and trace elements in biological processes, metalloporphyrins with special reference to haemoglobin and myoglobin.	
29-01-24 03-02-24	to	Biological role of alkali and alkaline earth metal ions with special reference to Ca^{2+} . Nitrogen fixation.	
05-02-24 10-02-24	to	Section—D Silicones and Phosphazenes Silicones and phosphazenes, their preparation, properties, structure and uses	
12-02-24 17-02-24	to	Organic chemistry SECTION – A Heterocyclic Compounds-I Introduction: Molecular orbital picture and aromatic characteristics of pyrrole, furan, thiophene and pyridine. Methods of synthesis and chemical reactions with particular emphasis on the mechanism of electrophilic substitution.	
19-02-24 24-02-24	to	Mechanism of nucleophilic substitution reactions in pyridine derivatives. Comparison of basicity of pyridine, piperidine and pyrrole	
26-02-24 02-03-24	to	SECTION – B 1. Heterocyclic Compounds-II Introduction to condensed five and six- membered heterocycles. Preparation and reactions of indole, quinoline and isoquinoline with special reference to	
04-03-24 09-03-24	to	Fischer indole synthesis, Skraup synthesis and Bischler-Napieralski synthesis. Mechanism of electrophilic substitution reactions of, quinoline and isoquinoline 2. Organosulphur Compounds Nomenclature, structural features, Methods of formation and chemical reactions of thiols, thioethers,	
18-03-24 22-03-24	to	sulphonic acids, sulphonamides and sulphaguanidine. Synthetic detergents alkyl and aryl sulphonates. SECTION – C 1. Organic Synthesis via Enolates Acidity of α -hydrogens, alkylation of diethyl malonate and ethyl acetoacetate.	

01-04-24 06-04-24	to	Synthesis of ethyl acetoacetate: the Claisen condensation. Keto-enol tautomerism of ethyl acetoacetate.
08-04-24 13-04-24	to	2. Synthetic Polymers Addition or chain-growth polymerization. Free radical vinyl polymerization, ionic vinyl polymerization, Ziegler-Natta polymerization and vinyl polymers. Condensation or step growth polymerization. Polyesters, polyamides, phenol formaldehyde resins, urea formaldehyde resins, epoxy resins and polyurethanes. Natural and synthetic rubbers.
15-04-24 20-04-24	to	Section – D Amino Acids, Peptides & Proteins Classification, of amino acids. Acid-base behavior, isoelectric point and electrophoresis. Preparation of α -amino acids. Structure and nomenclature of peptides and proteins. Classification of proteins. Peptide structure determination, end group analysis, selective hydrolysis of peptides. Classical peptide synthesis, solid-phase peptide synthesis. Structures of peptides and proteins: Primary & Secondary structure.
21/04/24 onward		Revision