

Lesson Plan

Name of the Assistant/ Associate Professor:- DR. SUMAN KUMARI

Class and Section: B.Sc IInd (IVth sem) N.M+M

Subject: Inorganic Chemistry (3-4)

Week	Date	Topics
1.	17-01-2024	Govt. Holiday
	18-01-2024	Introduction of f-Block elements
2.	24-01-2024	Electronic structure, oxidation state.
	25-01-2024	magnetic Prop. Comp ^x form ⁿ , Colour, ionic radii
3.	7-02-2024	Lanthanide cont ⁿ , occurrence, sep ⁿ of Ln.
	8-02-2024	Lanthanide compounds.
4.	13-02-2024	General characteristics of AC.
	15-02-2024	Chem. of sep ⁿ of Np, Pu and Am from U.
5	21-02-2024	Transuranic elements, Comp ⁿ of Prop. of Ln and
	22-02-2024	AC with transition elements
Week		

6	28-2-2024	Introduction: Theory of Qualitative and Quantitative
	29-2-2024	Common ion Effect, Solubility and solubility Pdt.
Week 7	6-03-2024	Chem. of Analysis of basic radicals.
	7-03-2024	Chem. of Analysis of acidic radicals.
Week 8	13-03-2024	Chem. of identification of acid radicals in typical.
	14-03-2024	Comb ⁿ Conc. H ₂ SO ₄ test and dil. H ₂ SO ₄ test.
Week 9	20-03-2024	Chem. of interference of acid rad.
	21-03-2024	Theory of Precipitation.
Week 10	22-03-2024	Test of "f-Block elements"
	01-04-2024	Co-Precipitation and Post Precipitation
Week	3-04-2024	Purification of Precipitates.
	4-04-2024	Revision of 3 rd chapter
Week		

Lesson Plan

Name of the Assistant/ Associate Professor:- DR. SUMAN KUMARI

Class and Section: B.Sc IInd (IVth sem.) N.M & M

Subject: organic chemistry

Week	Date	Topics
1.	15-01-2024	Int. of IR Ab ⁿ spect. Molecular vib ⁿ , Hooke's law.
	16-01-2024	Selection rule, intensity and position of IR bands.
2.	22-01-2024	Measurement of IR spect. fingerprint region,
	23-01-2024	Ch. ab ⁿ of various funct ^{nl} grp of interpretation.
3.	29-01-2024	St. and Nomenclature of amines, Physical Prop.
	30-01-2024	sep ^{nl} of mix. of 1°, 2° and 3° amines. Preparation.
4.	5-02-2024	Structural features affecting basicity of amine.
	6-02-2024	Prep ^{nl} of aryl amines. Mech. of elect. aromatic sub
5	12-02-2024	Chemical Properties of amines.
	13-02-2024	Mech. of diazotisation, St of N ₂ ⁺ Cl ⁻ , Preparation
Week		

	19-02-2024	Red ⁿ of diazonium salts to hydrazines, Coupling Rx ⁿ
	20-02-2024	Prep ⁿ of nitro alkanes and nitro arenes
Week	26-02-2024	Chemical reactions of Nitro compounds
	27-02-2024	Mech of elect. sub ⁿ Rx ⁿ in nitro arenes.
Week	4-03-2024	Nomenclature of aldehydes and ketones. st. of $\text{C}=\text{O}$ group
	5-03-2024	Synthesis of Aldehydes and ketones.
Week	11-03-2024	Advantage of oxid ⁿ of aldehydes with Reagent.
	12-03-2024	Physical Prop. Comp ⁿ of reactivities of aldehydes & ketones.
Week	18-03-2024	Mech. of nucleophilic add ⁿ to $\text{C}=\text{O}$ with particular
	19-03-2024	emphasis on benzoin, aldol, Perkin Reaction.
Week	25-03-2024	Test of Diazonium salts and Nitro Comp ^{ds} .
	26-03-2024	Condensation with NH_3 and its derivative.
Week	1-04-2024	Wittig Rx ⁿ , Mannich Rx ⁿ oxid ⁿ of aldehydes.
	2-04-2024	Baeyer-Villiger oxid ⁿ . MPV Reaction.

Week	8-04-2024	Cannizzaro Rx ⁿ , Wolff-Kishner Reduction.
	9-04-2024	LiAlH ₄ and NaBH ₄ reductions.
Week	15-04-2024	Test of aldehydes and Ketones.
	16-04-2024	Test of IR ab ⁿ Spectroscopy.
Week		
Week		

Lesson Plan

Name of the Assistant/ Associate Professor:- DR. SUMAN KUMARI

Class and Section: B.sc Ind (IVth sem.) N:m&M

Subject: Physical chemistry

Week	Date	Topics
	19-01-24	Second law of thermodynamics, need for the law
	20-01-24	Carnot's cycles and its efficiency, Carnot's theorem
Week	26-01-24	Govt. Holiday
	27-01-24	Thermodynamics scale of temp. Concept of entropy.
Week	2-02-24	Entropy change in ideal gases and mixing of gases
	3-02-24	Third law of thermodynamics. Nernst heat theorem
Week	9-02-24	Statement of concept of residual entropy
	10-02-24	Evaluation of absolute entropy from heat capacity
Week	16-02-24	Gibbs and Helmholtz functions.
	17-02-24	ΔA and ΔG as criteria for thermodynamic eq. ^{ium}
Week		

	23-02-24	Variation of α and A with P , V and T
	24-02-24	Govt. Holiday
Week	1-03-2024	Electrolytic and Galvanic cells.
	2-03-24	Conventional rep ⁿ of electrochemical cells.
Week	8-03-24	Govt. Holiday
	9-03-24	EMF of cell and its measurement.
Week	15-03-24	Weston standard cell, activity and its coefficient
	16-03-24	Calculation of thermodynamic quantities of cell reaction (ΔG , ΔH and K)
Week	22-03-24	Types of reversible electrodes.
	23-03-24	Holi vacations
Week	29-03-24	Holi vacations
	30-03-24	Holi vacations
Week		

Week	5-04-24	Electrode Rx ^{ns} , NERNST eq ⁿ , EMF of a cell.
	6-04-24	Standard H electrode, Electrochem. series.
Week	12-04-24	Concentration cell, solubility Product activity.
	13-04-24	Govt. Holiday.
Week	15-04-24	Potentiometric titration
	16-04-24	Def ⁿ of PH using Hydrogen electrode.
Week		
Week		

Lesson Plan

Name of the Assistant/ Associate Professor:- DR. SUMAN KUMARI

Class and Section: M.Sc 2nd Semester

Subject: Basic Pericyclic and Photochemistry

Week	Date	Topics
1	16-01-2024	Molecular orbital symmetry. F.O. of ethylene
	17-01-2024	Shri Ururu Govind Singh Jayanti
	18-01-2024	Frontier orb. of 1,3-butadiene and allyl system.
	19-01-2024	Classification of Pericyclic reactions.
	20-01-2024	1,3,5-hexatriene frontier orb.
2	22-01-2024	Woodward-Hoffmann Correlation diagram.
	23-01-2024	FMO & PMO approach.
	24-01-2024	Electrocyclic Rx ⁿ -Conrotatory and disrotatory
	25-01-2024	motion. $4n$, $4n+2$ allyl system.
	26-01-2024	Govt. Holiday
	27-01-2024	Ring opening of cyclopropyl halides & tosylates
3	29-01-2024	Cycloadditions- antarafacial and suprafacial ad ⁿ .
	30-01-2024	2+2 addition of Ketenes. $4n$ and $4n+2$ system.
	31-01-2024	1,3 dipolar cycloadd ⁿ and cheletropic Rx ^{ns}
4	1-02-2024	Sigmatropic Rearrangement
	2-02-2024	Sigmatropic shifts involving carbon moieties.
	3-02-2024	Retention and inversion of configuration
5	5-02-2024	[3,3] and [5,5] sigmatropic Rearrangement
	6-02-2024	detailed treatment of Sommelet-Hauser,
	7-02-2024	Claissen and Cope Rearrangement
	8-02-2024	Simple problems on pericyclic Rx ^{ns}
	9-02-2024	Group transfers and eliminations.
	10-02-2024	Test of 1 st unit.
6	12-02-2024	Revision of 2 nd unit.
	13-02-2024	Introduction of photochemistry.

	14-02-2024	Govt. Holiday
	15-02-2024	Franck-Condon Principle, Jablonski diagram.
	16-02-2024	Energy transfer photosensitization, quenching.
	17-02-2024	Quantum efficiency and quantum yield.
Week	19-02-2024	Photochem. of Carbonyl Compounds.
7	20-02-2024	Norrish Type I.
	21-02-2024	Norrish Type II changes
	22-02-2024	Photoreaction of cyclic ketones.
	23-02-2024	Photoreaction of acyclic ketones.
	24-02-2024	Govt. Holiday
Week	26-02-2024	Paterno-Buchi Rx ⁿ and Photoreduction.
8	27-02-2024	Photochem. of olefins.
	28-02-2024	Photochem. of 1,3-butadiene
	29-02-2024	cis-trans isomerisation.
Week	1-03-2024	Dimerisation.
9	2-03-2024	cycloaddition Rx ⁿ s.
Week	4-03-2024	Di- π -methane Rearrangement
10	5-03-2024	enone Rearrangement
	6-03-2024	Dienone Rearrangement
	7-03-2024	Photochem. of aromatic compounds.
	8-03-2024	Mahashivratri (Govt. Holiday)
	9-03-2024	Substitution and cyclization isomerization.
Week	11-03-2024	cycloaddition Rx ⁿ
11	12-03-2024	Test of Pericyclic Rx ^{ns} II nd
	13-03-2024	Revision of Photochemistry.
	14-03-2024	Some Problem discuss - Pericyclic Rx ^{ns} .
	15-03-2024	Fluorescence and Phosphorescence.
	16-03-2024	Test of Photochemistry I.
Week	18-03-2024	Photochem. of cyclic ketones.
12	19-03-2024	1,4. diene Rearrangement
	20-03-2024	Photosensitization and its efficiency

	21-03-2024	Important Rule for Synthesis of oxetene
	22-03-2024	Cycloadd ^m Rx ^{ns} of α - β -Unsaturated.
	23-03-2024	Holi Vacations
Week 13	24-03-2024	" " "
	25-03-2024	" " "
	26-03-2024	" " "
	27-03-2024	" " "
	28-03-2024	" " "
	29-03-2024	" " "
	30-03-2024	Holi Vacations
Week 14	1-04-2024	Some examples of enones and Dienones
	2-04-2024	1,3-addition of olefins.
	3-04-2024	1,3-addition of Benzvalene
	4-04-2024	Photo-fries rearrangement.
	5-04-2024	Photolysis of nitrile esters.
	6-04-2024	Barton Reactions.
	Week 15	8-04-2024
9-04-2024		Synthesis of Vitamin D.
10-04-2024		Revision of Photochem. Unit II nd
11-04-2024		Govt. Holiday
12-04-2024		Test of Unit II nd Photochemistry.
Week 16	13-04-2024	Govt. Holiday
	15-04-2024	Revision
	16-04-2024	Revision
	17-04-2024	Govt. Holiday
	18-04-2024	Revision
	19-04-2024	Revision
Week	20-04-2024	Revision.