

Lesson Plan 1

Name of the Faculty : Sh. Jaipal Singh
Semester : B.Sc. Semester-3rd
Subject : Organic Chemistry

Lesson Plan duration : From August 2025 to Dec 2025

Paper Code :

Month	Topics
August	Section II: Gaseous State This section delves into the kinetic theory of gases, Maxwell's distribution of velocities and energies, and the calculation of root mean square velocity, average velocity, and most probable velocity. It also touches on collision diameter, collision number, collision frequency, and mean free path.
September	and the calculation of root mean square velocity, average velocity, and most probable velocity. It also touches on collision diameter, collision number, collision frequency, and mean free path
October	Section V: Liquid State and Solid State This section covers the structure of liquids, properties of liquids, and the classification of solids. It also discusses the law of constancy of interfacial angles, law of rational indices,
November	Miller indices, and elementary ideas of symmetry and symmetry elements.
December	Revision and Examination

Lesson Plan 2

Name of the Faculty : Sh. Jaipal Singh
Semester : B.Sc. Semester-1st
Subject : Organic Chemistry

Lesson Plan duration : From August 2025 to Dec 2025

Month	Topics
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Name of the Faculty : Lesson Plan 4
Semester : Sh. Jaipal Singh
B.Sc. Semester-5th

Subject : Organic Chemistry

Lesson Plan duration : From August 2025 to Dec 2025

Month	Topics
August	<ul style="list-style-type: none">- Thermodynamics-II" and "Quantum Mechanics-I."- The "Thermodynamics-II" section covers topics such as:<ul style="list-style-type: none">- Third Law of Thermodynamics- Nerist Heat Theorem- Statement of concept of residual entropy- Evaluation of absolute entropy from heat capacity data- Gibbs function and Helmholtz Function as thermodynamic quantities- Criteria for thermodynamic equilibrium and spontaneity- Variation of G with P, V, and T- Partial molar properties- Concept of chemical potential.(numerical included)- Phase Equilibria: Statement and the meaning of terms-phase component and degree of freedom
September	<ul style="list-style-type: none">- Thermodynamic derivation of Gibbs phase rule- Phase equilibria of one component system-water system- Phase equilibria of two component systems solid-liquid equilibria- Simple Eutectic Pb-Ag system
October	<ul style="list-style-type: none">- The "Quantum Mechanics-I" section covers topics such as:<ul style="list-style-type: none">- Black body radiation- Planck's radiation law- Explanation of spectral distribution of black body radiation on the basis of classical mechanics and quantum mechanics- Heat capacity of solids- Need of quantum mechanics- Postulates of quantum mechanics- Quantum mechanical operator- Commutation relations- Hamiltonian operator
November	<ul style="list-style-type: none">- Role of operators to derive Schrodinger wave equation- Application of Schrodinger wave equation in determination of wave function

August	2. Electrochemistry-I: This section covers electrolytic conduction, factors affecting electrolytic conduction, specific conductance, molar conductance, equivalent conductance, and the relation between them and their variation with concentration.
September	. specific conductance, molar conductance, equivalent conductance, and the relation between them and their variation with concentration.
October	3. Electrochemistry-II: This section covers reversible and irreversible cells, calculation of thermodynamic quantities of cell reaction, types of reversible electrodes, Nernst equation, standard hydrogen electrode, reference electrodes, and applications of EMF measurement in solubility product and potentiometric titrations using glass electrode.
November	Nernst equation, standard hydrogen electrode, reference electrodes, and applications of EMF measurement in solubility product and potentiometric titrations using glass electrode.
December	Revision and Examination

Lesson Plan 3

Name of the Faculty : Sh. Jaipal Singh
Semester : M.sc Chemistry
Subject : *Physical Chemistry*

Lesson Plan duration : From August 2025 to Dec 2025

Month	Topics
August	- Unit-I: Chemical Dynamics-I - Effect of temperature on reaction rates - Rate law for opposing reactions of 1st and 2nd order - Rate law for consecutive & parallel reactions of 1st order reactions - Collision theory of reaction rates and its limitations- Steric factor
September	- Activated complex theory - Ionic reactions: single and double sphere models - Influence of solvent and ionic strength - Comparison of collision and activated complex theory
October	- Unit-III: Thermodynamics-I - Brief resume of first and second laws of thermodynamics - Entropy changes in reversible and irreversible processes
November	- Variation of entropy with temperature, pressure, and volume - Entropy concept as a measure of disorder
December	Revision and Examination

Lesson Plan

Assistant Professor– Anupama

Class-B.A. 1st, Semester-1st

Subject-Chemistry(MDC), Introductory chemistry(July to November 2025)

Month	Name of Topics
August	Atomic structure and bonding:-introduction elementary introduction of atomic structureChemical bonding,representation of elements/ atoms
	Lewis structure and electronic configuration
September	Carbon and its compound:-introduction Tetra valency of carbon allotrope of carbon and their properties hydrocarbon(1-5) nomenclature(Linear compounds)and property of hydrocarbon
October	Polymers:-introduction and elementary idea of synthetic and natural polymer, homo polymers and copolymers, uses and their properties (vulcanized rubber, natural rubber, polythene, styrene,PVC, Teflon ,PAN, nylon 66)
November	Food preservative:-elementary idea of natural and synthetic food preservatives, rancidity uses and properties,different food preservative process(pickle &Jam),artificial sweetner uses and properties
	Revision and Class tests

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Lesson Plan

Assistant Professor– Anupama

Class-M Sc (P), Semester-1st

Subject- Organic Chemistry, (July to November 2025)

Month	Name of Topics
August	Introduce the core concepts of stereochemistry. Define and explain symmetry elements a D-L nomenclature, sugars and amino acids. R-S nomenclature (Cahn-Ingold-Prelog rules) and practice assigning R/S configurations to chiral centers. Stereoisomerism E-Z nomenclature for geometric isomers of alkenes. Explain the priority rules used for assigning E/Z configuration.
September	Introduce threo-erythro nomenclature for compounds with two adjacent chiral centers. Representing Molecules and Conformational Analysis Molecular Representations interconversion of Fischer, Newman, and Sawhorse formulae.
October	conformational analysis with cycloalkanes, specifically cyclohexane, and discuss chair, boat, and twist-boat conformations, along with axial and equatorial positions. decalins. Discuss their fused ring systems and the stability of cis- and trans-decalins. Explain the effect of conformation on reactivity. conformational analysis to sugar
November	stereogenicity and chirogenicity. prochiral center Pseudoasymmetry and Stereospecificity stereospecific and stereoselective reactions. Asymmetric Synthesis Rules Cram's rule and its modification. Prelog's Rule and Chirality Week 1: Discuss Prelog's rule for the stereochemical outcome of nucleophilic addition to ketones. Revision and Class tests

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Lesson Plan

Assistant Professor—Anupama

Class - B.Sc. II , Semester-3rd

Subject-Chemistry(SEC),Waste Management Techniques (July to November 2025)

Month	Name of Topics
August	Source of pollution , physical , chemical , organic & biological properties
	Manufacturing process, flow sheets
	characterizes and composition of waste including waste reduction.
	Treatment & Disposal of waste
September	Disposal method for waste from food industries
	Disposal method for waste from Sugar , Fermentation
	Disposal method for waste from Material Industries , PAPER
	Steel , Metal plating
October	And petroleum Refineries ,given assignment
	Role of Biotechnology in waste minimization: Recovery of bio product & raw material from waste water conversion
	Waste recovery and reuse, reclamation by ground water recharge, agriculture reuse of effluent , sludge as fertilizer , biomass for energy , metallic recovery
November	Bioscrubbing biological treatment , biological method for waste processing
	Bio-Methanation , Biodiesel Bio-hydrogen
	Revision and Class tests

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Lesson Plan

Assistant Professor- Anupama

Class-B.Sc. 3rd , Semester-5th

Subject-Chemistry-V,(July to November 2025)

Month	Name of Topics
August	<p>Synthesis of α-Enolates</p> <p>Acidity of α-hydrogens, alkylation of diethyl malonate and ethyl acetoacetate. Synthesis of ethyl acetoacetate: the Claisen condensation. Keto-enol tautomerism of ethyl acetoacetate.</p> <p>Heterocyclic Compounds</p> <p>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.</p>
September	<p>Mechanism of nucleophilic substitution reactions in pyridine derivatives. Comparison of basicity of pyridine, piperidine and pyrrole.</p> <p>Introduction to condensed five and six-membered heterocycles. Preparation and reactions of indole, quinoline and isoquinoline with special reference to Fischer indole synthesis, Skraup synthesis and Bischler-Napieralski synthesis. Mechanism of electrophilic substitution reactions of quinoline and isoquinoline.</p>
October	<p>Limitations of valence bond theory, an elementary idea of crystal field theory, crystal field splitting in octahedral, tetrahedral and square planar complexes, factors affecting the crystal field parameters.</p> <p>Types of magnetic materials, magnetic susceptibility, method of determining magnetic susceptibility, spin only formula, L-S coupling, correlation of μ_s and μ_{eff} values, orbital contribution to magnetic moments, application of magnetic moment data for 3d metal complexes.</p>
November	<p>Werner's theory of coordination compounds, effective atomic number, chelates, nomenclature of coordination compounds, Isomerism in coordination compounds, valence bond theory of transition metal complexes.</p>
	Revision and Class tests

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01/08/2025

Lesson Plan 1

Name of the Faculty : Ms Mukesh Kumari
Semester : Semester-3rd
Subject : MDC Introductory Chemistry
Lesson Plan duration : From August 2025 to Dec 2025

Month	Topics
August	Pollution and their types: Plastic and polyethene pollution, pollution sources, recycling of plastic, greenhouse effect, ozone depletion.
September	recycling of plastic, greenhouse effect, ozone depletion.
October	Pesticides and Herbicides: General introduction and definition, biological control and chemical control,
November	natural and synthetic pesticides, benefits and adverse effects of DDT, BHC, Malathion.
December	Revision and Examination

Lesson Plan 2

Name of the Faculty : Ms Mukesh Kumari
Semester : Semester-1st M.Sc
Subject : Organic Chemistry

Lesson Plan duration : From August 2025 to Dec 2025

Month	Topics
August	1. Aromaticity in benzenoid and non-benzenoid compounds 2. Alternant and non-alternant hydrocarbons 3. Huckel's rule level of n-molecular orbitals 4. Annulenes 5. Antiaromaticity 6. Homoaromaticity
September	1. Linear free energy relationships and their applications (Hammett equation and modifications)
October	2. Generation, structure, stability, and reactivity of carbocations, carbanions.

	Free radicals, carbene, and nitrenes
November	The second section delves into free radical reactions, including types of free radical reactions, mechanisms at aromatic substrates, neighboring group assistance, reactivity for aliphatic and aromatic substrates at a bridgehead, and the effect of solvents on reactivity.
December	It also discusses allylic halogenations (NBS), oxidation of aldehydes to carboxylic acids, autooxidation, coupling of alkynes, and arylation of aromatic compounds by diazonium salts.

Lesson Plan 3

Name of the Faculty : Ms Mukesh Kumari
 Semester : B.Sc. Semester-1st
 Subject : Organic Chemistry

Lesson Plan duration : From August 2025 to Dec 2025

Month	Topics
August	localized and delocalized chemical bonds, Van der Waals interactions, and the concept of resonance and its applications. It also discusses hyperconjugation, inductive effect, electromeric effect, and their comparison.
September	1. Curved Arrow Notation: 2. Homolytic and Heterolytic Bond Fission: formation of free radicals.- Heterolytic Bond Fission 3. Types of Reagents: - Electrophiles:- Nucleophiles: 4. Types of Organic Reactions: - Substitution Reactions: - Addition Reactions: - Condensation Reactions: - Elimination Reactions: - Rearrangement Reactions: - Isomerization Reactions: - Pericyclic Reactions:
October	- Elimination Reactions: - Rearrangement Reactions: - Isomerization Reactions: - Pericyclic Reactions:
November	. Reactive Intermediates: - Carbanions: Negatively charged ions where the negative charge is on a carbon atom. - Free Radicals: Highly reactive species with an unpaired electron.- Carbenes
December	Revision and Examination

Lesson Plan 4

Name of the Faculty : Ms Mukesh Kumari
 Semester : B.Sc. Semester-3rd

Subject : Organic Chemistry

Lesson Plan duration : From August 2025 to Dec 2025

Month	Topics
August	Alkynes: This section covers nomenclature and structure, methods of formation using Calcium carbide.
September	: Benzene and its derivative- Nomenclature - Aromatic nucleus and side chain - Huckel's rule of aromaticity
October	1. Concept of Isomerism: Structural and Stereoisomerism 2. Properties of Enantiomers: Chiral and Achiral Molecules (up to 2 asymmetric centers), Diastereomers, Threo- and Erythro-nomenclature, Meso-compounds 3. Relative and Absolute Configuration: R and S System of Nomenclature 4. Cis-Trans Isomerism: E & Z System of Nomenclature 5. Conformational Analysis: Ethane and n-Butane, Conformations of Cyclohexane, Axial and Equatorial Bonds, Newman and Sawhorse Projection Formulae - Aromatic electrophilic substitution - Mechanism of nitration
November	5. Conformational Analysis: Ethane and n-Butane, Conformations of Cyclohexane, Axial and Equatorial Bonds, Newman and Sawhorse Projection Formulae - Aromatic electrophilic substitution - Mechanism of nitration - Halogenation- Sulphonation- Friedel-Crafts reaction
December	Revision and Examination

Lesson Plan 1

Name of the Faculty : Ms Mukesh Kumari
Semester : Semester-3rd
Subject : MDC Introductory Chemistry
Lesson Plan duration : From August 2025 to Dec 2025

Month	Topics
August	Pollution and their types: Plastic and polyethene pollution, pollution sources, recycling of plastic, greenhouse effect, ozone depletion.
September	recycling of plastic, greenhouse effect, ozone depletion.
October	Pesticides and Herbicides: General introduction and definition, biological control and chemical control.
November	natural and synthetic pesticides, benefits and adverse effects of DDT, BHC, Malathion.
December	Revision and Examination

Lesson Plan 2

Name of the Faculty : Ms Mukesh Kumari
Semester : Semester-1st M.Sc
Subject : Organic Chemistry
Lesson Plan duration : From August 2025 to Dec 2025

Month	Topics
August	1. Aromaticity in benzenoid and non-benzenoid compounds 2. Alternant and non-alternant hydrocarbons 3. Huckel's rule level of n-molecular orbitals 4. Annulenes 5. Antiaromaticity 6. Homoaromaticity
September	1. Linear free energy relationships and their applications (Hammett equation and modifications)
October	2. Generation, structure, stability, and reactivity of carbocations, carbanions.

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and energy of a particle in one dimensional box

- Spectroscopy-I: Electromagnetic radiations, reasons of electromagnetic spectrum, basic features of spectroscopy, introduction to molecular spectroscopy and its difference from atomic spectroscopy, signal to noise ratio, its difference from photometer, Born-Oppenheimer approximation, Concept of degree of freedom

- Rotational Spectrum: Energy levels of rigid rotator of diatomic molecules, selection rules, spectral intensity distribution using Maxwell Boltzmann distribution, Determination of bond length

December

Revision and Examination

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Lesson Plan

Extension Lecturer– Dr. Suman Dhull

Class- M.Sc. I, (I –Semester)

Subject- Inorganic Chemistry (August to November 2025)

Month	Name of Topics
August	Introduce the concept of metal-ligand equilibria. Explain the formation of metal complexes in solution, Define and differentiate between stepwise formation constants (K_n) and overall formation constants (β_n), Discuss the mathematical relationship between them, Explore the trends in stepwise constants.
	Explain why $K_1 > K_2 > K_3$ and so on, in most cases. Use graphical representations to illustrate the concept, Discuss the factors affecting the stability of metal complexes. Focus on the nature of the metal ion (charge, size, electron configuration) and the nature of the ligand (basic strength, charge, steric hindrance), Introduce the chelate effect.
September	Explain its origin and significance, linking it to the thermodynamic origin (enthalpy vs. entropy). Provide examples of bidentate and polydentate ligands to illustrate the effect.
	Transition Metal Complex Mechanisms, Introduce Reaction Mechanisms of Transition Metal Complexes. Define the fundamental principles of lability and inertness. Explain how these terms relate to the kinetic stability of a complex, Begin discussing the mechanisms for ligand replacement reactions.
	Explain the formation of complexes from aquo ions, using water as the initial ligand. Focus on ligand displacement reactions in octahedral complexes. Discuss acid hydrolysis as a key mechanism for these reactions.
	Explain the role of the acid and the leaving group, Cover base hydrolysis in detail. Contrast it with acid hydrolysis and explain the mechanism. Also, introduce the concept of electrophilic attack on ligands as a pathway for reaction.
October	Conduct a full review of Unit I, focusing on the calculation of formation constants and the application of factors affecting stability, Conduct a full review of Unit II, emphasizing the differences between lability and inertness and the various reaction mechanisms, Integrate concepts from both units. Discuss how a complex's stability (thermodynamic property from Unit I) relates to its lability or inertness (kinetic property from Unit II).
	Hold a practice session with a variety of problem types, including numerical problems from Unit I and mechanistic questions from Unit II.

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	Revisit the thermodynamic origin of the chelate effect. Provide more detailed examples and calculations to illustrate the entropy gain. Re-examine the mechanisms of acid and base hydrolysis, focusing on the detailed reaction intermediates and energy profiles.
November	Mid-Term Assessments, Conduct a mid-term exam to assess understanding of both units. Review the mid-term exam with the students, addressing common mistakes and clarifying challenging concepts. Begin a comprehensive revision of both units. Use practice questions and past papers to prepare for final examinations.
	Conduct mock exams to simulate the final exam environment. Focus on time management and effective problem-solving strategies.

Lesson Plan

Extension Lecturer- Dr. Suman Dhull

Class- B.Sc. II , (III -Semester)

Subject-Chemistry(SEC),Waste Management Techniques (August to November 2025)

Month	Name of Topics
August	Waste : Classification generation and characterization, Basic aspect of solid waste, Management generation on-site handling, Storage and proccesing: collection of solid waste, transfer and transport ,processing tech., ultimate disposal.Hazardous Waste : Defination , source effect , disposal and management tech.
	Physical , chemical , Physico- chemical treatment, Thermal treatment, solidification, Pryolysis, encapuslysation and incineration.Biomedical Waste : Defination , categories , and management , E-waste , source & management.
September	Diposal of Solid waste: Sanitary land filing-site selection , design & operation.
	Sanitary landfills- Leachate collection & treatment. Secure land filling.
	Incineration : Mass burn , rotator kiln, Fludized Bed incinerator,liquid injection.
	Waste gas flare , fixed grate incinerator, Plasma Pyrolysis compositing , vermicompositing.
October	Principle of industrial waste treatment: Source of population , physical , chemical , organic & biological properties.
	Manufacturing process, flow sheets , characterizes and composition of waste including waste reduction.
	Treatment & Disposal : Method for food industries , Sugar , Fermentation , Material Industries , PAPER , Steel , Metal plating , And petroleum Refineries
	Role of Biotechnology in waste minimization: Recovery of bio product & raw material from waste water conversion
November	Waste recovery and reuse, reclamation by ground water recharge , agriculture reuse of effluent , sludge as fertilizer , biomass for energy , metallic recovery bios rubbing biological treatment , biological method for waste processing
	Bio-Methanation , Biodiesel Bio-hydrogen
	Revision and Class tests

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Lesson Plan

Extension Lecturer- Dr. Suman Dhull

Class- B.Sc. I, (I - Semester)

Subject- Minor Chemistry (August to November 2025)

Month	Name of Topics
August	Understanding the shapes of simple inorganic molecules and ions, Applying VSEPR (Valence Shell Electron Pair Repulsion) theory to predict molecular geometry.
	Understanding and predicting hybridization (sp , sp^2 , sp^3 , sp^3d , sp^3d^2), Using examples to illustrate different geometries: linear, trigonal planar, square planar, tetrahedral, trigonal bipyramidal, and octahedral.
	The concept of reaction rates and how they are measured, Factors that influence the rate of a reaction, such as temperature, concentration, and catalysts.
September	The difference between order and molecularity of a reaction, Deriving and applying integrated rate expressions for zero-order and first-order reactions.
	Understanding the nomenclature and classification of carbon atoms in alkanes, Studying the different types of isomerism in alkanes.
	Learning about the main methods of formation for alkanes: Wurtz reaction.
October	Kolbe reaction, Corey-House reaction.
	Decarboxylation of carboxylic acids.
	A qualitative idea of the Band theory of metallic bonds.
November	Distinguishing between conductors, semiconductors, and insulators based on their band structures.
	Revision and Class tests

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Kanika Sikri

Assistant professor

Lesson Plan (Aug 2025 to Nov 2025)

B.Sc. I, Physical science & Life science (Inorganic Chemistry Portion)		Remarks
August	Atomic Structure Dual behaviour of matter and radiation, de Broglie's relation, Heisenberg's uncertainty principle	
	Concept of atomic orbitals, significance of quantum numbers, radial and angular wave functions, normal and orthogonal wave functions, significance of Ψ and Ψ^2	
	shapes of s, p, d, f orbitals, Rules for filling electrons in various orbitals, effective nuclear charge.	Assignment of chapter 1
	Slater's rules and its numerical problems	
September	Periodic table and atomic properties Classification of periodic table	
	Definition of atomic and ionic radii, ionisation energy and their trends in the groups and periods	Test of chapter 1
	Definition of electron affinity and electronegativity, and their trends in the groups and periods.	
October	Pauling, Mulliken, Allred, Rachow, and Mulliken Jaffe's electronegativity scale	
	Sanderson's electron density ratio.	
	Midterm Examination of Chapter 2	
November	Revision	Doubt class

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Kanika Sikri

Assistant professor

Lesson Plan (Aug 2025 to Nov 2025)

M.Sc. Chemistry(P) (Physical Chemistry Portion Unit 1 and 2)		Remarks
August	Chemical Dynamics – I Recapitulation of chemical kinetics of the previous class, Effect of temperature on reaction rates.	
	Rate law for opposing reactions of 1st and 2nd order, Rate law for consecutive & parallel reactions of 1st order reactions.	
	Collision theory of reaction rates and its limitations, steric factor.	
	Activated complex theory, the comparison of collision and activated complex theory.	Doubt Class
September	Ionic reactions: single and double sphere models, influence of solvent and ionic strength.	Assignment of chapter 1
	Chemical Dynamics – II Chain reactions: hydrogen–bromine reaction, pyrolysis of acetaldehyde, decomposition of ethane.	
	Photochemical reactions (hydrogen–bromine & hydrogen–chlorine reactions), General treatment of chain reactions (ortho–para hydrogen conversion and hydrogen–bromine reactions).	Test of chapter 1
October	Apparent activation energy of chain reactions, chain length, Rice – Herzfeld mechanism of organic molecules decomposition (acetaldehyde).	
	Branching chain reactions and explosions ($H_2 - O_2$ reaction).	
	Kinetics of (one intermediate) enzymatic reaction: Michaelis–Menten treatment, evaluation of Michaelis's constant for enzyme–substrate binding by Lineweaver–Burk plot and Eadie–Hofstee methods.	Mid Term Examination
November	Competitive and non-competitive inhibition. Revision.	Doubt class

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Kanika Sikri

Assistant professor

Lesson Plan (July 2025 to November 2025)

B.A III Sem MDC (Introductory Chemistry III)		Remarks
August	Pollution and its types: Introduction to Pollution, Plastic, and Polythene Pollution.	
	Pollution sources, Recycling of plastic	
	Greenhouse effect, Ozone Depletion	
	Energy: Energy Sources, Renewable and Non-Renewable sources of energy	
	Cells and batteries	
	Fuel cell, Solar cell, Polymer cell	
	Water Sources of drinking water and uses. Water Conservation	Assignment of Energy
September	TDS, Techniques of purification of water, R.O.	
	Osmosis and reverse osmosis, waste water management	Test of water
	Pesticides and Herbicides: General introduction and definition	
	Biological control of pesticides and herbicides	Doubt Class
	Chemical control of pesticides and herbicides	
	Natural and Synthetic Pesticides	
October	Benefits and adverse effects of DDT	
	Benefits and adverse effects of BHC	
	Midterm examination	
November	Benefits and adverse effects of Malathion.	Doubt Class
	Revision	

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Chemistry

Lesson Plan

Extension Lecturer- **Satish Kumar**

Class and Section- M.Sc. 1st , (I –Semester)

Subject- (July to November 2025)

Month	Name of Topics
August	Green Chemistry:-carbon and silicon, fullerene, nano tubes, graphene ,silicates ,aluminium silicates,zeolites their applications shape selective catalyst, General nitrogen chemistry nitrogen oxide nitrogen compound application in fertilizer ammonia haber Bosch process , General Phosphorus chemistry Phosphorus base fertilizer pesticide,cyclophosphazene and synthesis of cyclophosphazenes application frustrated Lewis acid base pair and applications
September	Catalyst and bio inorganic:- transition metal ion catalyst for organic transformation and their application in hydrogenation Williamson catalyst asymmetric hydrogenation hydroformulation or oxo process ,wacker process ,monsanto acetic acid process ,alkene metathesis, Alkynes metathesis, alkene polymerisation ,water gas reaction ,role of metal ions in biological syste
October	Conduct a full review of Unit I, focusing on the calculation of formation constants and the application of factors affecting stability, Conduct a full review of Unit II, emphasizing the differences between lability and inertness and the various reaction mechanisms, Integrate concepts from both units. Discuss how a complex's stability (thermodynamic property from Unit I) relates to its lability or inertness (kinetic property from Unit II). , Hold a practice session with a variety of problem types, including numerical problems from Unit I and mechanistic questions from Unit II. ,
November	Mid-Term Assessments, Conduct a mid-term exam to assess understanding of both units, Review the mid-term exam with the students, addressing common mistakes and clarifying challenging concepts, Begin a comprehensive revision of both units. Use practice questions and past papers to prepare for final examinations. Conduct mock exams to simulate the final exam environment. Focus on time management and effective problem-solving strategies.

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Lesson Plan

Extension Lecturer-- Sh. Satish Kumar

Class and Section- Physical science 3rd -Semester

Subject-Minor Chemistry (July to November 2025)

Month	Name of Topics
July	S and p block element:-silents features of hydrides,oxides
August	Silent feature of halides, hydroxide of S block elements
	Structure, preparation and properties of Diaborane ,Borazine
	Catination ,carbide, fluorocarbon, silicates structure of oxide of nitrogen and phosphorus structure of while and red phosphorus structure of oxyacids of nitrogen ,phosphorus, Sulphur and chlorine and comparison of acidic strength of oxyacids
	Low chemical reactivity of noble gases chemistry of xenon structure and bonding in fluorides, oxides and oxyfluorides of xenon
September	Electrochemistry 1:- electrolytical conduction factor affecting electrolytical conduction specific conductance molar conductance equivalent conductance and relation among them their variation with concentration
	Application of kohlrausch law in calculation of conductance of weak electrolyte at infinite dilution
	Concept of PH and pk buffer solution Henderson and Hazel equation
	Buffer mechanism of buffer action
October	Alkynes :-nomenclature and its structure method of formation using calcium carbide, dehydrogenation kolbes electrolysis
	Chemical reaction mechanism of electrophile and nucleophilic addition reactions,formation of metal acetylides addition of bromine and alkaline KMnO₄ , ozonolysis,acidity of alkyne
	Revision and Class tests.
	Stereochemistry of organic compound:-concept of isomerism structural and stereoisomerism, symmetry elements in enantiomers ,optical activity, properties of enantiomers chiral and a chiral molecules ,diastereomers,threo and erythro nomenclature meso compounds
November	Benzene and its derivatives:-nomenclature aromatic nucleus side chain, Hukels rule of aromaticity ,aromatic electrophilic substitution mechanism of nitration halogenation and Friedel-Craft reaction energy profile diagram activating deactivating substituents and orientation
	Revision and Class tests

MSK

Lesson Plan

Extension Lecturer- **Sh. Satish Kumar**

Class and Section- **Physical and Life Science 3rd -Semester**

Subject-Major Chemistry (July to November 2025)

Month	Name of Topics
	S and p block element:-silents features of hydrides,oxides
August	Silent feature of halides, hydroxide of S block elements
	Structure, preparation and properties of Diaborane ,Borazine
	Catination ,carbide, fluorocarbon, silicates structure of oxide of nitrogen and phosphorus structure of while and red phosphorus structure of oxyacids of nitrogen ,phosphorus, Sulphur and chlorine and comparison of acidic strength of oxyacids
	Low chemical reactivity of noble gases chemistry of xenon structure and bonding in fluorides, oxides and oxyfluorides of xenon
September	Electrochemistry 1:- electrolytical conduction factor affecting electrolytical conduction specific conductance molar conductance equivalent conductance and relation among them their variation with concentration
	Application of kohltrausch law in calculation of conductance of weak electrolyte at infinite dilution
	Concept of PH and pk buffer solution Henderson and Hazel equation
	Buffer mechanism of buffer action
October	Alkynes :-nomenclature and its structure method of formation using calcium carbide, dehydrogenation kolbes electrolysis
	Chemical reaction mechanism of electrophile and nucleophilic addition reactions,formation of metal acetylides addition of bromine and alkaline KMnO₄ , ozonolysis,acidity of alkyne
	Revision and Class tests.
	Stereochemistry of organic compound:-concept of isomerism structural and stereoisomerism, symmetry elements in enantiomers ,optical activity, properties of enantiomers chiral and a chiral molecules ,diastereomers,threo and erythro nomenclature meso compounds
November	Benzene and its derivatives:-nomenclature aromatic nucleus side chain, Hukels rule of aromaticity ,aromatic electrophilic substitution mechanism of nitration halogenation and Friedel-Craft reaction energy profile diagram activating deactivating substituents and orientation
	Revision and Class tests

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