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 7: 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 an 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

Name of the Faculty

Semester

Lesson Plan 4

Sh. Jaipal Singh

B.Sc. Semester-5th

Subject

Organic Chemistry

Lesson Plan duration:

From August 2025 to Dec 2025

Month	Tr
\ugust	Thorney In the Control of the Control
	- Thermodynamics-II" and "Quantum Mechanics-I."
	- The "Thermodynamics-II" section covers topics such as:
	- Third Law of Thermodynamics
	- Nernst 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
	degree of freedom
	CONTRACTOR OF THE PROPERTY OF
September	- Thermodynamic derivation of Gibbs phase rule
September	- Phase equilibria of one component system-water system
September	 Phase equilibria of one component system-water system Phase equilibria of two component systems solid-liquid equilibria
September	- Phase equilibria of one component system-water system
•	 Phase equilibria of one component system-water system Phase equilibria of two component systems solid-liquid equilibria Simple Eutectic Pb-Ag system
·	- Phase equilibria of one component system-water system - Phase equilibria of two component systems solid-liquid equilibria - Simple Eutectic Pb-Ag system - The "Quantum Mechanics-I" section covers topics such as:
September October	 Phase equilibria of one component system-water system Phase equilibria of two component systems solid-liquid equilibria Simple Eutectic Pb-Ag system The "Quantum Mechanics-I" section covers topics such as: Black body radiation
•	 Phase equilibria of one component system-water system Phase equilibria of two component systems solid-liquid equilibria Simple Eutectic Pb-Ag system The "Quantum Mechanics-I" section covers topics such as: Black body radiation Planck's radiation law
·	 Phase equilibria of one component system-water system Phase equilibria of two component systems solid-liquid equilibria Simple Eutectic Pb-Ag system The "Quantum Mechanics-I" section covers topics such as: Black body radiation Planck's radiation law Explanation of spectral distribution of black body radiation on the basis of
	 Phase equilibria of one component system-water system Phase equilibria of two component systems solid-liquid equilibria Simple Eutectic Pb-Ag system The "Quantum Mechanics-I" section covers topics such as: Black body radiation Planck's radiation law Explanation of spectral distribution of black body radiation on the basis of classical mechanics and quantum mechanics
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•	 Phase equilibria of one component system-water system Phase equilibria of two component systems solid-liquid equilibria Simple Eutectic Pb-Ag system The "Quantum Mechanics-I" section covers topics such as: 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
•	 Phase equilibria of one component system-water system Phase equilibria of two component systems solid-liquid equilibria Simple Eutectic Pb-Ag system The "Quantum Mechanics-I" section covers topics such as: 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

	2 []
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 EMI measurement in solubility product and potentiometric titrations using glass electrode.
December	Revision and Examination

Name of the Faculty

Sh. Jaipal Singh

Semester

M.sc Chemistry

Subject

Physical Chemistry

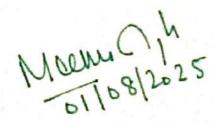
Lesson Plan duration:

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	e
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	

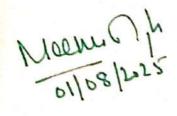
Assistant Professor- Anupama Class-B.A. 1st, Semester-1st Subject-Chemistry(MDC), Introductory chemistry(July to November 2025)

Month	Name of Topics
	Atomic structure and bonding:-introduction elementary
August	introduction of atomic structureChemical
	bonding, representation of elements/atoms
	Lewis structure and electronic configuration
	Carbon and its compound:-introduction Tetra valency of
September	carbon allotrope of carbon and their properties
•	hydrocarbon(1-5) nomenclature(Linear compounds)and
	property of hydrocarbon
	Polymers:-introduction and elementary idea of synthetic and
October	natural polymer, homo polymers and copolymers, uses and
	their properties (vulcanized rubber, natural rubber,
	polythene, styrene, PVC, Teflon ,PAN, nylon 66)
	Food preservative:-elementary idea of natural and synthetic
November	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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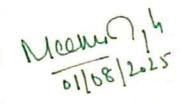
Assistant Professor- Anupama Class-M Sc (P), Semester-1st Subject- Organic Chemistry,(July to November 2025)

	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 ConformationalAnalysisMolecular Representations interconversionofFischer, Newman, and Sawhorse formulae.	
October	conformational analysis. with cycloal kanes, 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 transdecalins. Explain the effect of conformation on reactivity. conformational analysis to sugar	
November	stereogenecity and chirogenicity. prochiral centerPseudoasymmetry and Stereospecificitystereospecific 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	



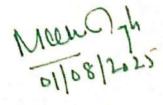
Assistant Professor-Anupama Class - B.Sc. II , Semester-3rd Subject-Chemistry(SEC), Waste Management Techniques (July to November 2025)

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
	Disposal method for waste from food industries
C	Disposal method for waste from Sugar, Fermentation
September	Disposal method for waste from Material Industries, PAPER
	Steel, Metal plating
	And petroleum Refineries, given assignment
October	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



Assistant Professor- Anupama Class-B.Sc. 3rd, Semester-5th Subject-Chemistry-V,(July to November 2025)

Month	Name of Topics
August	Synthesisv iaEnolates Acidityof - hydrogens, alkylationofdiethylmalonateandethylacetoacetate. Synthesisofethylacetoacetate: the Claisen condensation. Keto- enoltautomerismofethylacetoacetate. Heterocyclic Compounds Introduction: Molecular orbital picture and aromatic characteristics of pyrrole, furan, thiopheneand pyridine. Methods of synthesis and chemical reactions with particular emphasis on the mechanism of electrophilic substitution.
September	Mechanism substitutionreactionsinpyridinederivatives.Comparisonof basicityofpyridine,piperidineandpyrrole. Introduction to condensed five and six- memberedheterocycles. Prepration andreactions of indole, quinoline and isoquinoline with special reference to Fisherindole synthesis, Skraup synthesis and Bischler-Napieralski synthesis. Mechanismof electrophilicsubstitutionreactionsof,quinolineandisoquinoline.
October	Limitations of valence bond theory, an elementary idea of crystal field theory, crystalfieldsplittinginoctahedral, tetrahedralandsquareplanercomplexes, f actors affecting the crystal field parameters. Typesof magnetic materials, magnetic susceptibility, method of determining magnetic c susceptibility, spin only formula, L-S coupling, correlation of µs and µeff values, orbital contribution to magnetic moments, application of magnetic moment data for 3 dmetal complexes.
November	Werner's theory of coordination compounds, effective atomic number,



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.

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

Topics
1. Aromaticity in benzenoid and non-benzenoid compounds2. Alternant and non-alternant hydrocarbons3. Huckel's rule level of n-molecular orbitals 4. Annulenes5. Antiaromaticity 6. Homoaromaticity
1. Linear free energy relationships and their applications (Hammett equation and modifications)
2. Generation, structure, stability, and reactivity of earbocations, earbanions,

November	Free radicals, earbene, and nitrenes
(%)	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.

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	 Curved Arrow Notation: 2. Homolytic and Heterolytic Bond Fission: formation of free radicals Heterolytic Bond Fission Types of Reagents: - Electrophiles: - Nucleophiles: Types of Organic Reactions: - Substitution Reactions: - Addition Reactions: - Condensation Reactions: - Isomerization Reactions: - Pericyclic Reactions: - Rearrangement Reactions: - Isomerization
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	Topies .
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	Concept of Isomerism: Structural and Stereoisomerism Properties of Enantiomers: Chiral and Achiral Molecules (up to 2 asymmetric centers), Diastereomers, Threo- and Erythro-nomenclature, Meso-compounds Relative and Absolute Configuration: R and S System of Nomenclature Cit-Trans Isomerism: E & Z System of Nomenclature 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	1 D . Conformations of Cycloheyane
December	Revision and Examination

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 Allers Annual Control of the
August	Aromaticity in benzenoid and non-benzenoid compounds2. Alternant and non-alternant hydrocarbons3. Huckel's rule level of n-molecular orbitals Annulenes5. Antiaromaticity 6. Homoaromaticity
September	
October	2. Generation, structure, stability, and reactivity of carbocations, carbanions,

MOLO/h.

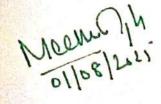
and energy of a particle in one dimensional box
- Spectroscopy-I: Electromagnetic radiations, reasons of electromagnetic spectrum, basic features of spectroscopy, introduction to molecular spectroscopy and its difference from atomic spectroscopy, signal to noise ratio, its difference from photometer, 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

Moen - 1/2

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 (\beta_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.
	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.
September	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.



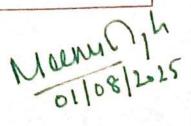
Revisit the thermodynamic origin of the chelate effect. Provide more detailed examples and calculations to illustrate the entropy gain, Re-examine the mechanisms of acid and base hydrolysis, focusing on the detailed reaction intermediates and energy profiles.

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.

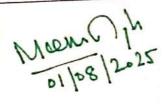
Extension Lecturer – Dr. Suman Dhull Class- B.Sc. II , (III –Semester) Subject-Chemistry(SEC),Waste Management Techniques (August to November 2025)

Month	Name of Topics
August	Waste: Classification generation and characterization, Basic aspect of solid waste, Management generation on-site handling, Storage and proccessing: 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. Diposal of Solid waste: Sanitary land filing-site selection, design 8 operation.
	Sanitary landfills- Leachate collection & treatment. Secure land filling.
September	Incineration: Mass burn, rotator kiln, Fludized Bed incinerator, liquid injection.
	Waste gas flare , fixed grate incinerator, Plasma Pyrolysis compositing, vermicompositing.
	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.
October	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



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 appropriation and catalysts.
	to allow location, Deriving
	and applying integrated rate expressions
September	Understanding the nomenclature and classification of carbon atom in alkanes, Studying the different types of isomerism in alkanes.
	Learning about the main methods of formation for alkanes: Wurt reaction.
	Kolbe reaction, Corey-House reaction.
October	Decarboxylation of carboxylic acids.
October	Litative idea of the Band theory of metallic bonds.
November	Distinguishing between conductors, semiconductors, and insulator based on their band structures.
Movember	Revision and Class tests

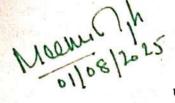


Kanika Sikri

Assistant professor

Lesson Plan (Aug 2025 to Nov 2025)

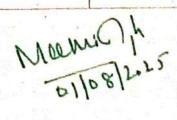
Sc. I, Physical se	cience & Life science (Inorganic Chemistry Portion)	Remarks
	Atomic Structure Dual behaviour of matter and radiation, de Broglie's relation, Heisenberg's uncertainty principle	•
	Concept of atomic orbitals, significance of quantum numbers, radial and angular wave functions, normal and orthogonal wave functions, significance of Ψ and Ψ^2	,
August	shapes of s, p, d, f orbitals, Rules for filling electrons in various orbitals, effective nuclear charge.	Assignment of chapter
	Slater's rules and its numerical problems	•
	Periodic table and atomic properties Classification of periodic table	
September	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	Doubt alone
November	Revision .	Doubt class



Assistant professor

Lesson Plan (Aug 2025 to Nov 2025)

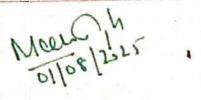
1.Sc. Chemistry(P) (Physical Chemistry Portion Unit 1 and 2)	Remarks
4	Chemical Dynamics – I Recapitulation of chemical kinetics of the previous class, Effect of temperature on reaction rates.	
August	Rate law for opposing reactions of 1st and 2nd order, Rate law for consecutive & parallel reactions of 1st order reactions.	
	Collision theory of reaction rates and its limitations, steric factor.	1
	Activated complex theory, the comparison of collision and activated complex theory.	Doubt Class
	Ionic reactions: single and double sphere models, influence of solvent and ionic strength.	Assignment of chapter 1
September	Chemical Dynamics – II Chain reactions: hydrogen–bromine reaction, pyrolysis of acetaldehyde, decomposition of ethane.	
a á	Photochemical reactions (hydrogen-bromine & hydrogen-chlorine reactions), General treatment of chain reactions (ortho-para hydrogen conversion and hydrogen-bromine reactions).	Test of ichapter 1
	Apparent activation energy of chain reactions, chain length, Rice – Herzfeld mechanism of organic molecules decomposition (acetaldehyde).	
October	Branching chain reactions and explosions $(H_2 - O_2 \text{ reaction})$.	-
	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

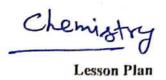


Kanika Sikri Assistant professor

Lesson Plan (July 2025 to November 2025) .

III Sem MDC (h	ntroductory Chemistry III)	Kemarks
	Pollution and its types: Introduction to Pollution, Plastic, and Polythene Pollution.	1
	Pollution sources, Recycling of plastic	
*	Greenhouse effect, Ozone Depletion	
	Energy: Energy Sources. Renewable and Non-Renewable sources of energy	•
August	Cells and batteries	
	Fuel cell, Solar cell, Polymer cell	
	Water Sources of drinking water and uses. Water Conservation	Assignment of Energy
	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	
September .	Biological control of pesticides and herbicides	Doubt Class
	Chemical control of pesticides and herbicides	•
	Natural and Synthetic Pesticides	
	Benefits and adverse effects of DDT	
October	Benefits and adverse effects of BHC	
	Midterm examination	
November	Benefits and adverse effects of Malathion.	Doubt Class
	Revision	





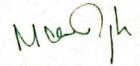
Extension Lecturer-Satish Kumar

Class and Section- M.Sc. 1st, (I –Semester) Subject- (July to November 2025)

Month	to November 2025)	
WORTH	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.	

Extension Lecturer - Sh. Satish Kumar Class and Section - Physical science 3rd - Semester Subject-Minor Chemistry (July to November 2025)

Month	Name of Topics
Harris .	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
	Electrochemistry 1:- electrolytical conduction factor affecting electrolytical conduction specific conductance molar conductance equivalent conductance and relation among them their variation with concentration
September	Application of kohlrausch law in calculation of conductance of weak electrolyte at infinite dilution
	Concept of PH and pk buffer solution Henderson and Haze equation
	Buffer mechanism of buffer action
	Alkynes:-nomenclature and its structure method of formation using calcium carbide, dehydrogenation kolbes electrolysis
0.44	Chemical reaction mechanism of electrophile and nucleophilic addition reactions, formation of metal acetylides addition of bromine and alkaline KMnO4, ozonolysis, acidity of alkyne
October	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, three and erythronomenclature meso compounds
November	Benzene and its derivatives:-nomenclature aromatic nucleu side chain, Hukels rule of aromaticity, aromatic electrophilisubstitution mechanism of nitration halogenation and Friedel Craft reaction energy profile diagram activating deactivating substituents and orientation
	Revision and Class tests



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
(200)	S and p block element:-silents features of hydrides,oxides
	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
August	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
	Electrochemistry 1:- electrolytical conduction factor affecting electrolytical conduction specific conductance molar conductance equivalent conductance and relation among them their variation with concentration
September	
	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
	Alkynes:-nomenclature and its structure method of formation using calcium carbide, dehydrogenation kolbes electrolysis
October	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

