

## Lesson Plan-1

Name of the Faculty : Mr. GURDEEP  
Discipline : B.SC- III (MED. + NON MEDICAL)  
Semester : Semester-V  
Subject : Physical Chemistry  
Lesson Plan duration: From July 2018 to November 2018 :

Week/Month	Name of Topics
1st week of August	Black-body radiation, Plank's radiation law, photoelectric effect, heat capacity of solids
2nd week of August	Compton effect, wave function and its significance of Postulates of quantum mechanics. Quantum mechanical operator, commutation relations,
3rd week of August	, Hamiltonian Operator, Hermitian operator, average value of square of Hermitian as a positive quantity
4th week of August	Role of operators in quantum mechanics, To show quantum mechanically that position and momentum cannot be predicated simultaneously
1st week of September	Determination of wave function & energy of a particle in one dimensional box, Pictorial representation and its significance
2nd week of September	Introduction to Optical activity, polarization – (Clausius – Mossotti equation). Orientation of dipoles in an electric field, dipole moment, induced dipole moment
3rd week of September	, measurement of dipole moment-temperature method and refractivity method, dipole moment and structure of molecules, Magnetic permeability, magnetic susceptibility and its determination.,
4th week of September	Application of magnetic susceptibility, magnetic properties – paramagnetism, diamagnetism and ferromagnetics
1st week of October	. Introduction to Electromagnetic radiation, regions of spectrum, basic features of spectroscopy, statement of Born oppenheimer approximation,
2nd week of October	Degrees of freedom. Diatomic molecules. Energy levels of rigid rotator (semi-classical principles), Selection rules, spectral intensity distribution using population distribution (Maxwell-Boltzmann distribution), determination of bond length, qualitative

	description of non-rigid rotor, isotope effect
<b>3rd week of October</b>	Infrared spectrum: Energy levels of simple harmonic oscillator, selection rules, pure vibrational spectrum, intensity, determination of force constant and qualitative relation of force constant and bond energies, effects of an harmonic motion.
<b>4th week of October</b>	Isotopic effect on the spectra., idea of vibrational frequencies of different functional groups. Concept of polarizability
<b>1st week of November</b>	, pure rotational and pure vibrational Raman spectra of diatomic molecules, selection rules, Quantum theory of Raman spectra.
<b>2nd week of November</b>	Revision and Class tests.
<b>3rd week of November</b>	Revision and Class tests.

**LESSON PLAN (FROM September 2023 TO December 2023)**

**NAME: Poonam Rani**

**CLASS: MDC**

Month	Contents
<b>September</b>	Elementary introduction of atomic structure.
	Introduction to chemical bonding.
<b>October</b>	Representation of elements/atom.
	Lewis Structure
	Electronic configuration.
	Carbon and its compound
	Tetravalency of carbon, allotropes of carbon and their properties.
	Hydrocarbons (1-5), nomenclature linear compound

	, application of hydrocarbon.
	<b>mid term exam</b>
<b>November</b>	Introduction to polymer, syn of polymer uses properties of polymer, classification of polymer
	test
<b>December</b>	Introduction to food preservatives,
	sancidity uses and properties
	artificial sweeteners
	uses and properties of artificial sweeteners
	revision and test

**LESSON PLAN (FROM October 2023 TO December 2023)**

**NAME: Poonam Rani**

**CLASS: B.Sc. III Non- MEDICAL (Inorganic Chemistry)**

Month	Contents
<b>October</b>	Introduction to magnetic behavior
	Types of magnetic behavior
	Measurement of magnetic behavior
	Magnetic susceptibility
	Magnetic moment from magnetic susceptibility
November	Variation of magnetic susceptibility with temperature
	Curie and curie - weiss laws
	Ferromagnetism and Antiferromagnetism
	Orbital contribution to a magnetic moment
	revision and class test

**LESSON PLAN (FROM September 2023 TO December 2023)**

**NAME: Poonam Rani**

**CLASS: SEC-1(B.sc-life science)**

Month	Contents
<b>September</b>	Oils, fats, waxes,
	mineral oils, essential oils
	Their sources, composition and structure
	Constituents of natural fats Glycerides and fatty acids
	Their nomenclature, classification and principles sources
October	Theories of Glyceride structure
	Physical properties of fatty acids and their esters ch
	Polymorphism and crystal structure
	Solubility, Refractivity
	Optical activity, spectroscopic properties
	Mid term exam
	November
Acetyl and hydroxyl value	
peroxide and anisidine value, iodine value	
class test	
December	colour tests for identification of adulteration of Edible oils
	Bellier turbidity temperature test
	Dilatometry, micro penetration tests

	revision and test
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## Lesson Plan

**Name: Priya**

**Class: B.Sc. I**

**Chemistry Lesson Plan: July 2023 to Nov 2023**

Week 1: 24/07/2023 to 29/07/2023 Atomic Structure Dual behavior of matter and radiation, de Broglie's relation Heisenberg's uncertainty principle, concept of atomic orbitals
Week 2: 31/07/2023 to 05/08/2023 Significance of quantum numbers, radial and angular wave functions, normal and orthogonal wave functions, significance of $\Psi$ and $\Psi^2$
Week 3: 07/08/2023 to 12/08/2023 Shapes of s, p, d, f orbitals, Rules for filling electrons in various orbitals, effective nuclear charge, Slater's rules.
Week 4: 14/08/2023 to 19/08/2023 Periodic table and atomic properties Classification of periodic table, definition of atomic and ionic radii Ionization energy, electron affinity and electronegativity, trend in periodic table (in s and p-block elements)
Week 5: 21/08/2023 to 26/08/2023 Pauling, Mulliken, Allred Rachow and Mulliken Jaffe's electronegativity scale, Sanderson's electron density ratio.
Week 6: 04/09/2023 to 09/09/2023 Gaseous State: Kinetic theory of gases, Maxwell's distribution of velocities and energies (derivation excluded) Test for Atomic Structure
Week 7: 11/09/2023 to 16/09/2023 Calculation of root mean square velocity, average velocity, and most Probable velocity. Collision diameter, collision number, collision frequency and mean free path (Derivations excluded)
Week 8: 18/09/2023 to 23/09/2023 Deviation of Real gases from ideal behaviour, Derivation of Van der Waal's Equation of State
Week 9: 25/09/2023 to 30/09/2023 Application of Van der Waal's Equation of State in the calculation of Boyle's temperature (compression factor) Critical Phenomenon Concept

of Critical temperature, critical pressure, critical volume, relationship Between critical constants and Van der Waal's constants (Derivation excluded)
<p>Week 10: 02/10/2023 to 07/10/2023</p> <p>Structure and Bonding</p> <p>Localized and delocalized chemical bond, Van der Waals interactions</p> <p>Concept of resonance and its applications</p>
<p>Week 12: 09/10/2023 to 14/10/2023</p> <p>Hyperconjugation, inductive effect, Electromeric effect and their comparison, Mechanism of Organic Reactions, Curved arrow notation, homolytic and heterolytic bond fission</p> <p>Test for Gaseous State</p>
<p>Week 13: 16/10/2023 to 21/10/2023</p> <p>Types of reagents: electrophiles and nucleophiles. Types of organic reactions: Substitution, Addition, Condensation, Elimination, Rearrangement, Isomerization, Pericyclic reactions</p>
<p>Week 14: 23/10/2023 to 28/10/2023</p> <p>Reactive intermediates: Carbocations, Carbanions, Free radicals, Carbenes</p>
<p>Week 15: 30/10/2023 to 04/11/2023</p> <p>Structure of liquids, Properties of liquids – surface tension, refractive index, Refractive index.</p>
<p>Week 16: 06/11/2023 to 11/11/2023</p> <p>Viscosity, Vapour pressure and optical rotation</p> <p>Test for Structure and bonding</p>
<p>Week 17: 13/11/2023 to 18/11/2023</p> <p>Solid State: Classification of solids, Law of constancy of interfacial angles, law of rational indices, Miller indices, elementary ideas of symmetry and symmetry elements</p>
<p>Week 18: 20/11/2023 to 25/11/2023</p> <p>Seven crystal systems and fourteen Bravais lattices; X-ray diffraction, Bragg's law. A simple account of Laue method, rotating crystal method and powder pattern method.</p>
<p>Week 19: 27/11/2023 to 02/12/2023</p> <p>Revision and Test</p>

## Lesson Plan

**Name: Priya**

**Class: SEC**

**Chemistry Lesson Plan: July 2023 to Nov 2023**

Week 1: 01/09/2023 to 09/09/2023 Natural dyes: name of plants of natural dyes, occurrence, Extraction of dyes
Week 2: 11/09/2023 to 16/09/2023 Paints, Varnishes and Inks: Composition, examples of preparation Applications of Paints, Varnishes and Inks
Week 3: 18/09/2023 to 23/09/2023 Surface Coatings: Objectives of surface coatings, preliminary treatment of surface Classification of surface coatings
Week 4: 25/09/2023 to 30/09/2023 Paints and pigments-formulation, composition Properties of Paints and pigments
Week 5: 02/10/2023 to 07/10/2023 Oil paint, Vehicle, modified oils, Pigments, toners and lakes pigments
Week 6: 09/10/2023 to 14/10/2023 Fillers, Thinners, Enamels, emulsifying agents
Week 7: 16/10/2023 to 21/10/2023 Special paints (Heat retardant, Fire retardant, Eco-friendly paint, Plastic paint), Dyes, Wax polishing
Week 8: 23/10/2023 to 28/10/2023 Water and Oil paints, additives, Metallic coatings (electrolytic and electrodeless).
Week 9: 30/10/2023 to 04/11/2023 Detergents: Introduction to soap, Types of soap (Toilet soap, Transparent soap, Shaving soap, Neem soap, Liquid soap)
Week 10: 06/11/2023 to 11/11/2023 Manufacturing of soap (Batch process, Continuous process) Recovery of glycerin from spent dye. Introduction to detergents. Principal group of synthetic detergents Biodegradability of surfactants.



Week 11: 13/11/2023 to 18/11/2023 Classification of surface-active agents' Anionic detergents (Manufacture of anionic detergents (i) Oxo Process (ii) Alfol Process (iii) Welsh Process) Cationic detergents (Manufacture process) Non-Ionic detergents (Manufacture by batch process) Amphoteric detergents
Week 12: 20/11/2023 to 25/11/2023 Manufacture of shampoo.
Week 13: 27/11/2023 to 02/12/2023 Revision and Test

## **Lesson Plan**

**Name: Priya**

**Class: Minor Chemistry**

**Chemistry Lesson Plan: July 2023 to Nov 2023**

Week 1: 24/07/2023 to 29/07/2023 Valence bond theory approach, shapes of simple inorganic molecules
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<p>Week 2: 31/07/2023 to 05/08/2023</p> <p>Shapes of simple inorganic molecules and ions based on valence shell electron pair repulsion (VSEPR) theory</p>
<p>Week 3: 07/08/2023 to 12/08/2023</p> <p>Shapes of simple inorganic molecules and ions based on hybridization with suitable examples of linear, trigonal planar, square planar, tetrahedral, trigonal bipyramidal and octahedral arrangements.</p>
<p>Week 4: 14/08/2023 to 19/08/2023</p> <p>Molecular orbital theory of homonuclear (N<sub>2</sub>, O<sub>2</sub>) and heteronuclear (CO and NO) diatomic molecules.</p>
<p>Week 5: 21/08/2023 to 26/08/2023</p> <p>Dipole moment and percentage ionic character in covalent bond.</p>
<p>Week 6: 04/09/2023 to 09/09/2023</p> <p>Concept of reaction rates, rate equation.</p>
<p>Week 7: 11/09/2023 to 16/09/2023</p> <p>Factors influencing the rate of reaction. Order and molecularity of a reaction, integrated rate expression for zero order reaction.</p>
<p>Week 8: 18/09/2023 to 23/09/2023</p> <p>Integrated rate expression for first order reaction.</p>
<p>Week 9: 25/09/2023 to 30/09/2023</p> <p>Integrated rate expression second order reactions (for equal conc. of reactants), Half-life period of a reaction.</p>
<p>Week 10: 02/10/2023 to 07/10/2023</p> <p>Alkanes, nomenclature, classification of carbon atoms in alkanes.</p>
<p>Week 12: 09/10/2023 to 14/10/2023</p> <p>Isomerism in alkanes, sources. Methods of formation: Wurtz reaction, Kolbe reaction.</p>
<p>Week 13: 16/10/2023 to 21/10/2023</p> <p>Corey-House reaction and decarboxylation of carboxylic acids. Physical properties.</p>
<p>Week 14: 23/10/2023 to 28/10/2023</p> <p>Mechanism of free radical halogenation of alkanes: reactivity and selectivity.</p>
<p>Week 15: 30/10/2023 to 04/11/2023</p> <p>Metallic bond – Qualitative idea of valence bond</p>
<p>Week 16: 06/11/2023 to 11/11/2023</p>

Band theories of metallic bond (conductors, semiconductors, insulators).
Week 17: 13/11/2023 to 18/11/2023 Semiconductors – Introduction, types, and applications.
Week 18: 20/11/2023 to 25/11/2023 Revision and Test
Week 19: 27/11/2023 to 02/12/2023 Revision and Test

### LESSON PLAN (FROM August 2023 TO December 2023)

**NAME: Suman Lata**

**CLASS: B.Sc.II MEDICAL (Inorganic Chemistry)**

Month	Contents
<b>August</b>	Definition of transition elements, position in the periodic table
	General characteristic properties of d-Block elements
	Comparison of properties of 3d elements with 4d and 5d elements with reference only to ionic radii, oxidation state
	Comparison of properties of 3d elements with 4d and 5d elements with reference magnetic etc.
	Comparison of properties of 3d elements with 4d and 5d elements with reference magnetic properties.
	Comparison of properties of 3d elements with 4d and 5d elements with reference spectral properties.
	Comparison of properties of 3d elements with 4d and 5d elements with stereochemistry.
	Stability of various oxidation states and e.m.f (Latimer)

	Stability of various oxidation states and e.m.f (Frost diagrams)
<b>September</b>	Structure and properties of some compounds of transition elements - $\text{TiO}_2$
	Structure and properties of some compounds of transition, $\text{VOCl}_2$
	Structure and properties of some compounds of transition elements - $\text{FeCl}_3$
	Structure and properties of some compounds of transition elements - $\text{CuCl}_2$ and $\text{Ni}(\text{CO})_4$
	Discussion and problem set, Assignment
	Coordination Compounds
	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
<b>October</b>	Valence bond theory of transition metal complexes
	Class test
	Physical properties of solvents
	Types of solvents
	General characteristics of solvents
	Discussion and problem set
	Assignment

	Reactions in nonaqueous solvents with reference to liquid NH <sub>3</sub>
November	Reactions in nonaqueous solvents with reference to liquid NH <sub>3</sub>
	Reactions in nonaqueous solvents with reference to liquid SO <sub>2</sub> .
	Reactions in nonaqueous solvents with reference to liquid SO <sub>2</sub> .
	Revision of chapter transition elements
	Revision of chapter Coordination Compounds

**LESSON PLAN (FROM August 2023 TO December 2023)**

**NAME: Suman Lata**

**CLASS: B.Sc. II NON MEDICAL (Inorganic Chemistry)**

Month	Contents
<b>August</b>	Definition of transition elements, position in the periodic table

	General characteristic properties of d-Block elements
	Comparison of properties of 3d elements with 4d and 5d elements with reference only to ionic radii, oxidation state
	Comparison of properties of 3d elements with 4d and 5d elements with reference magnetic.
	Comparison of properties of 3d elements with 4d and 5d elements with reference magnetic properties.
	Comparison of properties of 3d elements with 4d and 5d elements with reference spectral properties.
	Comparison of properties of 3d elements with 4d and 5d elements with stereochemistry.
	Stability of various oxidation states and e. m. f (Latimer)
	Stability of various oxidation states and e. m. f (Frost diagrams)
<b>September</b>	Structure and properties of some compounds of transition elements - $\text{TiO}_2$
	Structure and properties of some compounds of transition, $\text{VOCl}_2$
	Structure and properties of some compounds of transition elements - $\text{FeCl}_3$
	Structure and properties of some compounds of transition elements - $\text{CuCl}_2$ and $\text{Ni}(\text{CO})_4$
	Discussion and problem taken, Assignment
	Coordination Compounds
	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
<b>October</b>	Valence bond theory of transition metal complexes
	Class test
	Physical properties of solvents
	Types of solvents
	General characteristics of solvents
	Discussion and problem set
	Assignment
	Reactions in non-aqueous solvents with reference to liquid $\text{NH}_3$
November	Reactions in non-aqueous solvents with reference to liquid $\text{NH}_3$
	Reactions in non-aqueous solvents with reference to liquid $\text{SO}_2$ .
	Reactions in non-aqueous solvents with reference to liquid $\text{SO}_2$ .
	Revision of chapter transition elements
	Revision of chapter Coordination Compounds

## Lesson Plan-1

Name of the Faculty : Mr. SURENDER KUMAR

Discipline : B.SC- II MEDICAL

Semester : Semester-III

Subject : Organic Chemistry

Lesson Plan duration: From August 2023 to November 2023

Week/Month	Name of Topics
2 week August	Alcohols nomenclature, methods of formation by reduction of—Monohydric alcohols
3 week August	aldehydes, ketones, carboxylic acids and esters. Hydrogen bonding. Acidic nature. Reactions of alcohols
4 week August	Dihydric alcohols — nomenclature, methods of formation, chemical reactions of vicinal glycols,
1 week September	oxidative cleavage [Pb(OAc) <sub>4</sub> and HIO <sub>4</sub> ] and pinacol-pinacolone rearrangement. Phenols Nomenclature
2 week September	, structure and bonding. Preparation of phenols, physical properties and acidic character. Comparative acidic strengths of alcohols and phenols
3 week September	resonance stabilization of phenoxide ion. Reactions of phenols — electrophilic aromatic substitution,
4 week of September	Mechanisms of Fries rearrangement, Claisen rearrangement, Reimer-Tiemann reaction, Kolbe's reaction and Schotten and Baumann reactions.
1 week of October	Epoxides Synthesis of epoxides. Acid and base-catalyzed ring opening of epoxides, orientation of epoxide ring opening,
2 week of October	, reactions of Grignard and organolithium reagents with epoxides Ultraviolet (UV) absorption spectroscopy Absorption laws (Beer-Lambert law),
3 week of October	molar absorptivity, presentation and analysis of UV spectra, types of electronic transitions, effect of conjugation. Concept of chromophore and auxochrome.
4 week of October	Bathochromic, hypsochromic, hyperchromic and hypochromic shifts. UV spectra of conjugated enes and maxima of simple enones Woodward-Fieser rules, calculation of $\lambda_{max}$ of $\alpha,\beta$ -unsaturated ketones.
1 week of November	, conjugated dienes and Applications of UV Spectroscopy in structure elucidation of simple organic compounds. Carboxylic Acids & Acid Derivatives Nomenclature of Carboxylic acids,



<b>2 week of November</b>	structure and bonding, physical properties, acidity of carboxylic acids, effects of substituents on acid strength. Preparation of carboxylic acids. Reactions of carboxylic acids. Hell-Volhard-Zelinsky reaction.
<b>3 week of November</b>	Reduction of carboxylic acids. Mechanism of decarboxylation. Relative stability of acyl derivatives. Physical properties, interconversion of acid derivatives by nucleophilic acyl substitution. Mechanisms of esterification and hydrolysis (acidic and basic).
<b>4 week of November</b>	Revision and Class tests.

### Lesson Plan-2

**Name of the Faculty** : **Mr. SURENDER KUMAR**  
**Discipline** : **B.SC- II NON MEDICAL**  
**Semester** : **Semester-III**  
**Subject** : **Organic Chemistry and Inorganic Chemistry**  
**Lesson Plan duration:** **From August 2023 to November 2023**

<b>Week/Month</b>	<b>Name of Topics</b>
<b>2 week August</b>	Alcohols nomenclature, methods of formation by reduction of—Monohydric alcohols , aldehydes, ketones, carboxylic acids and esters. Hydrogen bonding. Acidic nature. Reactions of alcohols
<b>3 week August</b>	Dihydric alcohols — nomenclature, methods of formation, chemical reactions of vicinal glycols, oxidative cleavage [Pb(OAc) 4 and HIO4 ] and pinacol-pinacolone rearrangement. Phenols Nomenclature
<b>4 week August</b>	, structure and bonding. Preparation of phenols, physical properties and acidic character. Comparative acidic strengths of alcohols and phenols, resonance stabilization of phenoxide ion. Reactions of phenols — electrophilic aromatic substitution
<b>1 week September</b>	Mechanisms of Fries rearrangement, Claisen rearrangement, Reimer-Tiemann reaction, Kolbe's reaction and Schotten and Baumann reactions, Epoxides Synthesis of epoxides. Acid and base-catalyzed ring opening of epoxides,

<b>2 week September</b>	orientation of epoxide ring opening, , reactions of Grignard and organolithium reagents with epoxides Ultraviolet (UV) absorption spectroscopy Absorption laws (Beer-Lambert law),
<b>3 week September</b>	molar absorptivity, presentation and analysis of UV spectra, types of electronic transitions, effect of conjugation. Concept of chromophore and auxochrome,,
<b>4 week of September</b>	Bathochromic, hypsochromic, hyperchromic and hypochromic shifts. UV spectra of conjugated enes and m a x of simple $\lambda_{enones}$ Woodward- Fieser rules, calculation of $\lambda_{-unsaturated ketones}$ . $\beta, \alpha$ .
<b>1 week of October</b>	, conjugated dienes and Applications of UV Spectroscopy in structure elucidation of simple organic compounds. Carboxylic Acids & Acid Derivatives Nomenclature of Carboxylic acids,
<b>2 week of October</b>	structure and bonding, physical properties, acidity of carboxylic acids, effects of substituents on acid strength. Preparation of carboxylic acids. Reactions of carboxylic acids. Hell-Volhard-Zelinsky reaction
<b>3 week of October</b>	Reduction of carboxylic acids. Mechanism of decarboxylation. Relative stability of acyl derivatives. Physical properties, interconversion of acid derivatives by nucleophilic acyl substitution. Mechanisms of esterification and hydrolysis (acidic and basic)..
<b>4 week of October</b>	Revision and Class tests.
<b>1 week of November</b>	, Definition of transition elements, position in the periodic table, General characteristic properties of d-Block elements, Comparison of properties of 3d elements with 4d and 5d elements with reference only to ionic radii
<b>2 week of November</b>	oxidation state, magnetic and spectral properties and stereo chemistry.
<b>3 week of November</b>	Stability of various oxidation states and e.m.f (Latimer and Frost diagrams), Structure and properties of some compounds of transition elements- $TiO_2$ , $VOCl_2$ , $FeCl_3$ , $CuCl_2$ and $Ni(CO)_4$ .
<b>4 week of November</b>	Assignment and Revision

### Lesson Plan-3

Name of the Faculty : Mr. SURENDER KUMAR  
Discipline : B.SC- III NON MEDICAL  
Semester : Semester-V  
Subject : Organic Chemistry and Inorganic Chemistry  
Lesson Plan duration: From August 2023 to November 2023

Week/Month	Name of Topics
2 week August	Organometallic Compounds , Organo magnesium compounds . .
3 week August	the Grignard reagents -formaion,structure
4 week August	chemical reactions of organo magnesium compound,
1 week September	Organozinc compounds: formation and chemical reactions
2 week September	Organolithium compounds: formation and chemical reactions
3 week September	Uses of Organometallic Compounds
4 week of September	Metal- Ligand Bonding in Transition Metal complexes
1 week of October	Valance Bond Theory and Limitations of valence bond theory,
2 week of October	an elementary idea of crystal field theory,
3 week of October	crystal field splitting in octahedral.
4 week of October	crystal field splitting in tetrahedral and square planer complexes
1 week of November	factors affecting the crystal field parameters
2 week of November	Revision and Assignment
3 week of November	Revision and Class tests

## Lesson Plan-1

Name of the Faculty : Mr. RAVI KUMAR  
Discipline : B.SC- III Medical and NON Medical  
Semester : Semester-V  
Subject : Organic Chemistry  
Lesson Plan duration: From Sept. 2021 to Feb 2022  
Paper Code :

Week/Month	Name of Topics
2 week Aug	Introduction to Principle of nuclear magnetic resonance, The PMR spectrum ,
3 week Aug	Number of signals, peak Areas, Equivalent and non equivalent protons positions of signals and chemical shift
4 week Aug	shielding and deshielding of protons proton counting, splitting of signals
1 week Sept.	Coupling constants, magnetic equivalence of protons
2 week Sept.	Discuss ion of PMR spectra of the molecules: ethyl bromide, n-propyl bromide, isopropyl bromide,
3 week of Sept.	1,1-dibromoethane, 1,1,2-tribromoethane., ethanol, Acetaldehyde, ethyl acetate, toluene,
4 week of Sept.	, benzaldehyde and acetophenone. Introduction to Classification and nomenclature
1 week of Oct.	Monosaccharides, mechanism of osazone formation, Interconversion of glucose and fructose,
2 week of Oct.	chain lengthening and chain shortening of aldoses. Configuration of monosaccharides. Erythro and threo diastereomers.
3 week of Oct	Conversion of glucose in to mannose. Formation of glycosides, ethers and esters. Determination of ring size of glucose and fructose.
4 week of Oct	. Open chain and cyclic structure of D(+)-glucose & D(-) fructose. Mechanism of mutarotation. Structures of ribose and deoxyribose
1 week of Nov.	An introduction to disaccharides (maltose, sucrose and lactose) and polysaccharides (starch and cellulose) without involving structure determination. Organomagnesium compounds:.
2 week of Nov.	Grignard reagents-formation, structure and chemical reactions. Organozinc compounds: formation and chemical reactions.

	Organolithium compounds: formation and chemical reactions
<b>3 week of Nov.</b>	Revision and Class tests.
<b>4 week of Nov.</b>	Revision and Class tests.

### Lesson Plan-2

**Name of the Faculty** : Mr. RAVI KUMAR  
**Discipline** : B.SC- III (NON MEDICAL + MEDICAL)  
**Semester** : Semester-V  
**Subject** : INORGANIC CHEMISTRY  
**Lesson Plan duration:** From Sept. 2021 to Jan. 2022  
**Paper Code** :

Week/Month	Name of Topics
<b>2 week Aug</b>	<b>Metal- Ligand Bonding in Transition Metal complexes</b>
<b>3 week Aug</b>	Limitations of valence bond theory, an elementary idea of crystal field theory
<b>4 week Aug</b>	Crystal field splitting in octahedral, tetrahedral and square planer complexes
<b>1 week Sept.</b>	factors affecting the crystal field parameters.
<b>2 week Sept.</b>	<b>Organometallic Compounds</b>  Organomagnesium compounds: the Grignard reagents- formation, structure and chemical reactions
<b>3 week of Sept.</b>	Organozinc compounds: formation and chemical reactions. Organolithium compounds: formation and chemical reactions.
<b>4 week of Sept.</b>	, <b>Thermodynamics and Kinetic Aspects of metal complexes</b>  A brief outline of thermodynamic stability of metal complexes

<b>1 week of Oct.</b>	. and factors affecting the stability, Irving William Series, substitution reactions of square planer complexes of Pt[II], Trans effect
<b>2 week of Oct.</b>	<b>Magnetic properties of Transition metal complexes</b> Types of magnetic materials, magnetic susceptibility, method of determining magnetic susceptibility
<b>3 week of Oct</b>	, spin only formula, L-S coupling correlation of $\mu_s$ and $\mu_{eff}$ values, orbital contribution to magnetic moments,
<b>4 week of Oct</b>	application of magnetic moment data for 3d metal complexes. <b>Electronic spectra of Transition metal complexes</b> Selection rules for d-d transition,
<b>1 week of Nov.</b>	spectroscopic ground states, spectrochemical series different cases of P subshell and D subshell.
<b>2 week of Nov.</b>	orgel energy level diagram for d1 and d9 states, discussion of electronic spectrum of $[\text{Ti}(\text{H}_2\text{O})_6]^{+3}$ complex ion.
<b>3 week of Nov.</b>	<b>Revision and Class tests.</b>
<b>4 week of Nov.</b>	<b>Revision and Class tests.</b>







