

Lesson Plan Format (2020-21)		
Name of the Assistant Professor : Kavita Yadav		
Subject: Chemistry		Paper: Inorganic Chemistry Sem: 1st Sem
Week	Date	Topic
1	25.11.2020-28.11.2020	Ch1- Atomic Structure, Idea of de Broglie Matter Waves
2	01.12.2020-05.12.2020	Heisenberg Uncertainty Principle, Atomic orbitals, Quantam Numbers
3	17.12.2020-12.12.2020	Radial and angular wave funtions and Probability distribution curve, Shapes of s, p, d orbitals
4	14.12.2020-19.12.2020	Ch 2- Periodic Properties, General Principles of periodic table Aufbau and Pauli exclusion principles, Hund's multiplicity rule
5	21.12.2020-26.12.2020	Electronic configuration of elements, Effective Nuclear charge , Slater's Rules , Atomic and Ionic radii, Ionization energy. Electron affinity and Electronegativity - definition
6	28.12.2020-31.12.2020	Electron affinity and Electronegativity - definition, Methods of determination or evaluation, Trends in periodic table (in s& p block elements)
7	11.01.2021-16.01.2021	Ch 3- Covalent Bond, Valence bond theory and its limitations, Directional characteristics of covalent bond
8	18.01.2021-23.01.2021	Various types of hybridization and shapes of simple inorganic molecules and ions (BeF ₂ , BF ₃ , CH ₄ , PF ₅ , SF ₆ , IF ₇ SO ₄ ²⁻ , ClO ₄ ⁻)
9	25.01.2021-30.01.2021	Valence shell electron pair repulsion(VSEPR)5 theory to NH ₃ , H ₃ O ⁺ , SF ₄ , ClF ₃ , ICl ₂ ⁻ and H ₂ O.
10	01.02.2021-06.02.2021	MO theory of heteronuclear (CO and NO) diatomic molecules, bondstrength and bond energy, Percentage ionic character from dipole moment and electron negativity difference.
11	08.02.2021-13.02.2021	Ch 4- Ionic Solids Ionic structures (NaCl,CsCl,ZnS(Zinc Blende), CaF ₂) radius ratio effect, Coordination number, limitation of radius ratio rule, lattice defects
12	15.02.2021-20.02.2021	Semiconductors, Lattice energy (methamtical derivation excluded), Born-Haber cycle
13	22.02.2021-27.02.2021	Solvation energy and its relation with solubility of ionic solids
14	01.03.2021-06.03.2021	Ploarizing power and polarisability of ions *Fajan's rule.
15	08.03.2021-13.03.2021	Revision of difficult concepts of inorganic chemistry

Lesson Plan Format (2020-21)		
Name of the Assistant Professor : Manu Kumar Bhandoria		
Subject: Chemistry		Paper: Physical Chemistry
		Sem: 1st Sem
Week	Date	Topic
1	25.11.2020-28.11.2020	Ch1- Gaseous States Maxwell's distribution of velocities and energies (derivation excluded) Calculation of root mean square velocity
2	01.12.2020-05.12.2020	Average velocity and most probable velocity, Collision diameter, Collision number *Collision frequency and mean free path
3	17.12.2020-12.12.2020	Deviation of real gases from ideal behaviour, Derivation of Vanderwaal's Equation of State and its application in the calculation Boyel's temperature (compressions factors) ,Explanation of behaviour of real gases using Vander Waal's Equation.
4	14.12.2020-19.12.2020	Ch 2- Critical Phenomenon, Critical temperature, Critical pressure, Critical volume and their determination, PV isotherms of real gases and continuity of states
5	21.12.2020-26.12.2020	The isotherm of Vander Waal's equation, Relationship between critical constants and Vander Waal's Constants
6	28.12.2020-31.12.2020	Critical Compressibility factor, The law of corresponding states, Liquification of gases
7	11.01.2021-16.01.2021	Ch3- Liquid States Introduction, Structure of liquids, Properties of Liquids
8	18.01.2021-23.01.2021	Surface tension, Viscosity vapour pressure , Optical rotation and their determinations
9	25.01.2021-30.01.2021	Ch-4 Solid State Classification of solids, Laws of crystallography (introduction), (i) Law of constancy of interfacial angles
10	01.02.2021-06.02.2021	(ii) Law of rationality of indices, (iii) Law of symmetry
11	08.02.2021-13.02.2021	Symmetry elements of crystals, Definition of unit cell & space lattice
12	15.02.2021-20.02.2021	Bravais lattices , Crystal system , X ray diffraction by crystals
13	22.02.2021-27.02.2021	Derivation of Bragg equation, Determination of crystal structure of NaCl, KCl.
14	01.03.2021-06.03.2021	Liquid crystals: Difference between solids, liquid and liquid crystals, types of liquid crystals
15	08.03.2021-13.03.2021	Applications of liquid crystals.

Lesson Plan Format (2020-21)		
Name of the Assistant Professor : Kavita Yadav		
Subject: Chemistry		Paper: Organic Chemistry Sem: 1st Sem
Week	Date	Topic
1	25.11.2020-28.11.2020	Section A:- Structure and Bonding- Localised and delocalized chemical bond, vanderwaal's interactions, Resonance
2	01.12.2020-05.12.2020	Hyperconjugation, Inductive, Electromeric, comparison of electronic effects
3	17.12.2020-12.12.2020	Stereochemistry of Organic compound-I
4	14.12.2020-19.12.2020	Optical isomerism, elements of symmetry, molecular chirality, Enantiomers and diastereomers
5	21.12.2020-26.12.2020	Resolution of enantiomers, Inversion, retention and racemisation
6	28.12.2020-31.12.2020	Section B:- Stereochemistry of Organic compound-II, RS nomenclature
7	11.01.2021-16.01.2021	Geometric isomerism, Conformational isomerism
8	18.01.2021-23.01.2021	Section C:- Mechanism of organic reactions, Electrophile and nucleophile, Types of organic reactions
9	25.01.2021-30.01.2021	Reactive Intermediates- Carbocation, carbanion, free radical, nitrene, carbenes and arynes
10	01.02.2021-06.02.2021	Section D:- Alkanes and cycloalkanes, IUPAC Nomenclature
11	08.02.2021-13.02.2021	Isomerism, Method of preparation and properties
12	15.02.2021-20.02.2021	Cycloalkanes- nomenclature, synthesis and derivatives, photochemical (2+2) cycloaddition reactions
13	22.02.2021-27.02.2021	Dehalogenation of dihalides, Baeyer's strain theory
14	01.03.2021-06.03.2021	Theory of strained rings, Pyrolysis of Calcium and barium salt
15	08.03.2021-13.03.2021	Revision of previous concepts

Lesson Plan (2020-21) Even Semester**Name of the Assistant Professor : Manu Kumar Bhandoria****Class B.Sc. 2nd Sem Subject: CHEMISTRY Paper: Inorganic Chemistry**

Week	Date	Topic
1	01.04.2021-03.04.2021	Hydrogen bonding and Vanderwaal's forces: Hydrogen bonding- Definition, types, effects on properties
2	05.04.2021-10.04.2021	Applications of hydrogen bonding and various types of vanderwaal's forces
3	12.04.2021-17.04.2021	Metallic bond- Introduction, band theory of metallic bond
4	19.04.2021-24.04.2021	Semiconductors-Introduction, Types and applications
5	26.04.2021-30.04.2021	s-block elements: Comparative study of the elements
6	03.05.2021-08.05.2021	Diagonal relationship, hydrides
7	10.05.2021-15.05.2021	Solvation and complexation tendencies
8	17.05.2021-22.05.2021	Chemistry of Noble gases: Reactivity, chemistry of Xenon
9	24.05.2021-29.05.2021	Structure and bonding of fluorides, oxides and oxyfluorides of xenon
10	01.06.2021-05.06.2021	p-block elements: comparative study
11	07.06.2021-12.06.2021	Boron family: Diborane-properties and structure
12	14.06.2021-19.06.2021	Borazene- chemical properties and structure , Halides of B and Al
13	21.06.2021-26.06.2021	Carbon family-Catenation, $p\pi-d\pi$ bonding, carbides
14	28.06.2021-03.07.2021	Fluorocarbons, silicates and their structure, silicones
15	05.07.2021-09.07.2021	Nitrogen Family, Oxygen family, Halogens

Lesson Plan (2020-21) Even Semester**Name of the Assistant Professor : Kavita Yadav****Class B.Sc. 2nd Sem Subject: CHEMISTRY Paper: Physical Chemistry**

Week	Date	Topic
Week 1	01.04.2021-03.04.2021	Ch1- Chemical Kinetics Rate of reaction and expressing and measuring the rate of reaction, Factors affecting the rate of reaction and conc. dependence of the reaction rates
Week 2	05.04.2021-10.04.2021	Zero order and first order reactions and their integrated rate expression, Half life period, Pseudofirst order reactions and kinetics of second order reactions
Week 3	12.04.2021-17.04.2021	Second and third order reactions and their integrated rate expressions with characteristics, Mechanism of reaction rate and Rate law
Week 4	19.04.2021-24.04.2021	Molecularity and order of reaction and methods for the determination of rate of reaction
Week 5	26.04.2021-30.04.2021	Ch 2- Theory of Chemical Kinetics Effect of temp. on the rate of reaction-Arrhenius equation, Theories of reaction rates, Collision theory for unimolecular reaction
Week 6	03.05.2021-08.05.2021	Transition state theory and effect of pressure on reaction rate
Week 7	10.05.2021-15.05.2021	Ch3-Electrochemistry *Electrolytic Conduction and its types

Week 8	17.05.2021-22.05.2021	Molar conductivity and its measurement
Week 9	24.05.2021-29.05.2021	Arrhenius Theory of Ionization
Week 10	01.06.2021-05.06.2021	Ostwald dilution law, Strong and weak electrolytes
Week 11	07.06.2021-12.06.2021	Debye Huckel Theory of Strong electrolytes and Migration of ions
Week 12	14.06.2021-19.06.2021	Discharge of ions on electrolysis
Week 13	21.06.2021-26.06.2021	Transport number and its determination
Week 14	28.06.2021-03.07.2021	Kohlrausch Law and its applications
Week 15	05.07.2021-09.07.2021	Conductometric titrations and buffer solutions

Lesson Plan (2020-21) Even Semester

Name of the Assistant Professor : Kavita Yadav

Class B.Sc. 2nd Sem Subject: CHEMISTRY Paper: Organic Chemistry

Week	Date	Topic
1	01.04.2021-03.04.2021	Alkene: Nomenclature, mechanism of dehydration of alcohols and dehydrohalogenation of alkyl halide
2	05.04.2021-10.04.2021	Saytzeff's rule, Hoffmann elimination, physical properties of alkene
3	12.04.2021-17.04.2021	Chemical reactions of alkene
4	19.04.2021-24.04.2021	Chemical properties of alkene continued.
5	26.04.2021-30.04.2021	Arenes and Aromaticity: Nomenclature of benzene derivatives, aromatic nucleus and side chain.
6	03.05.2021-08.05.2021	Aromaticity: Huckel rule, annulenes, aromatic, anti-aromatic and non-aromatic compounds
7	10.05.2021-15.05.2021	Aromatic electrophilic substitution, mechanism of nitration, halogenations, sulphonation and Friedel Crafts reaction
8	17.05.2021-22.05.2021	Energy profile diagram. Activating, deactivating substituents and orientation
9	24.05.2021-29.05.2021	Dienes: Nomenclature and classification, isolated, conjugated and cumulated dienes
10	01.06.2021-05.06.2021	Structure of butadiene reactions, Chemical reactions-1,2 and 1,4 additions
11	07.06.2021-12.06.2021	Diels-Alder reaction, Alkynes: structure, bonding and nomenclature
12	14.06.2021-19.06.2021	Chemical reactions of alkynes
13	21.06.2021-26.06.2021	Alkyl and Aryl halides: Nomenclature, classification and preparation
14	28.06.2021-03.07.2021	Chemical reactions of alkyl halides
15	05.07.2021-09.07.2021	Mechanism and stereochemistry of SN reactions

Lesson Plan Format (2020-21)		
Name of the Assistant Professor : Kavita Yadav		
Subject: Chemistry		Paper: Inorganic Chemistry Sem: 3rd Sem
Week	Date	Topic
Week 1	25.11.2020-28.11.2020	Ch1- Chemistry of Elements of 1st transition series Definition of transition elements
Week 2	01.12.2020-05.12.2020	Position in the periodic table
Week 3	17.12.2020-12.12.2020	General characteristics & properties of 1st transition elements
Week 4	14.12.2020-19.12.2020	Structure & properties of some compounds of transition elements- TiO_2 , VOCl_2 , FeCl_3 , CuCl_2 and $\text{Ni}(\text{CO})_4$
Week 5	21.12.2020-26.12.2020	series General characteristics and properties of the 2nd and 3rd transition elements, Stereochemistry, Revision
Week 6	28.12.2020-31.12.2020	Ch3- Coordination Compounds, Werner's coordination theory, Effective atomic number, concept of Chelates
Week 7	11.01.2021-16.01.2021	Nomenclature of coordination compounds
Week 8	18.01.2021-23.01.2021	Isomerism in coordination compounds
Week 9	25.01.2021-30.01.2021	Valence bond theory of transition metal complexes.
Week 10	01.02.2021-06.02.2021	Ch4- Non- aqueous Solvents Physical properties of a solvent
Week 11	08.02.2021-13.02.2021	Types of a solvent and their general characteristics
Week 12	15.02.2021-20.02.2021	Reactions in non-aqueous solvents with reference to liquid NH_3 and liquid SO_2
Week 13	22.02.2021-27.02.2021	Revision of difficult concepts of inorganic chemistry
Week 14	01.03.2021-06.03.2021	Test and discussion
Week 15	08.03.2021-13.03.2021	Revision of difficult concepts of inorganic chemistry
Lesson Plan (2020-21)		
Name of the Assistant Professor : Manu Kumar Bhandoria		
Subject: Chemistry		Paper: Physical Chemistry Sem: 3rd Sem
Week	Date	Topic
Week 1	25.11.2020-28.11.2020	Thermodynamic Terms Introduction
Week 2	01.12.2020-05.12.2020	Thermodynamic Properties and equilibrium
Week 3	17.12.2020-12.12.2020	1st law of thermodynamic, Internal energy and enthalpy
Week 4	14.12.2020-19.12.2020	Heat capacities and relation between them
Week 5	21.12.2020-26.12.2020	Joule Thomson coefficient for Ideal and Real gases
Week 6	28.12.2020-31.12.2020	Inversion temp and calculation of work and heat

Week 7	11.01.2021-16.01.2021	Change in internal energy and enthalpy for Isothermal and
Week 8	18.01.2021-23.01.2021	Reversible process, Equilibrium constant and free energy
Week 9	25.01.2021-30.01.2021	Chemical potential and its characteristics
Week 10	01.02.2021-06.02.2021	Thermodynamic derivation of Law of Chemical equilibrium
Week 11	08.02.2021-13.02.2021	Temp dependence of equilibrium constant
Week 12	15.02.2021-20.02.2021	Clausius- Clapeyron Equation
Week 13	22.02.2021-27.02.2021	Nernst distribution law- Thermodynamic derivation
Week 14	01.03.2021-06.03.2021	Degree of Hydrolysis and hydrolysis constant
Week 15	08.03.2021-13.03.2021	Equilibrium constant and Process of extraction

Lesson Plan (2019-20)

Name of the Assistant Professor : Kavita Yadav

Subject: Chemistry		Paper: Organic Chemistry	Sem: 3rd Sem
Week	Date	Topic	
1	25.11.2020-28.11.2020	Section A:- Alcohols:- Nomenclature and method of preparation	
2	01.12.2020-05.12.2020	Physical and Chemical properties of alcohols	
3	17.12.2020-12.12.2020	Dihydric alcohols- nomenclature, method of preparation, pinacol-pinacolone rearrangement	
4	14.12.2020-19.12.2020	Epoxides:- Synthesis and Chemical properties, Reactions of RMgX and RLi with epoxides	
5	21.12.2020-26.12.2020	Section B:- Phenols- Nomenclature, Preparation and Physical properties.	
6	28.12.2020-31.12.2020	Reactions of Phenols	
7	11.01.2021-16.01.2021	Section C:- UV Spectroscopy, Absorption Laws, Molar absorptivity *Presentation and analysis of UV Spectra	
8	18.01.2021-23.01.2021	Types of electronic transitions	
9	25.01.2021-30.01.2021	Effect of conjugation, Concepts of Chromophore and Auxochrome	
10	01.02.2021-06.02.2021	Bathochromic, Hypsochromic, hyperchromic and hypochromic shift, Woodward-Fieser rules	
11	08.02.2021-13.02.2021	Applications of UV Spectroscopy	
12	15.02.2021-20.02.2021	Section D:- Carboxylic acid and Acid derivatives, Nomenclature, preparation and physical properties	
13	22.02.2021-27.02.2021	Reactions of carboxylic acid, Acid Chlorides- preparation and properties	
14	01.03.2021-06.03.2021	Esters- preparation and properties, Amides- preparation and properties	
15	08.03.2021-13.03.2021	Acid anhydrides- preparation and properties, Mechanism of esterification and hydrolysis	

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Lesson Plan (2020-21) Even Semester**Name of the Assistant Professor : Kavita Yadav****Class B.Sc. 4th Sem Subject: CHEMISTRY Paper: Inorganic Chemistry**

Week	Date	Topic
1	01.04.2021-03.04.2021	Chemistry of f-block elements lanthanides: electronic structure, oxidation states
2	05.04.2021-10.04.2021	Ionic radii and lanthanide contraction
3	12.04.2021-17.04.2021	Complex formation, occurrence and isolation of lanthanide compounds
4	19.04.2021-24.04.2021	Chemistry of lanthanides compounds
5	26.04.2021-30.04.2021	Chemistry of f-block elements Actinides: General features
6	03.05.2021-08.05.2021	Chemistry of actinides, separation of Np, Pu and Am from U
7	10.05.2021-15.05.2021	Comparison of properties of lanthanides and actinides and with T.E.
8	17.05.2021-22.05.2021	Theory of Qualitatives and Quantitative Inorganic Analysis-I
9	24.05.2021-29.05.2021	Chemistry of analysis of various acidic radicals in typical combinations
10	01.06.2021-05.06.2021	Chemistry of analysis of various acidic radicals including their removal in the analysis of basic radical
11	07.06.2021-12.06.2021	Chemistry of analysis of various acidic radicals including their removal in the analysis of basic radical
12	14.06.2021-19.06.2021	Theory of Qualitatives and Quantitative Inorganic Analysis-II
13	21.06.2021-26.06.2021	Chemistry of analysis of various groups basic radicals
14	28.06.2021-03.07.2021	Theory of precipitation, co-precipitation, post-precipitation
15	05.07.2021-09.07.2021	Purification of precipitates

Lesson Plan (2020-21) Even Semester**Name of the Assistant Professor : Manu Kumar Bhandoria****Class B.Sc. 4th Sem Subject: CHEMISTRY Paper: Physical Chemistry**

Week	Date	Topic
Week 1	01.04.2021-03.04.2021	Different laws of thermodynamics and Cyclic process
Week 2	05.04.2021-10.04.2021	Carnot Cycle and its efficiency, Carnot theorem
Week 3	12.04.2021-17.04.2021	Entropy change in reversible and irreversible process
Week 4	19.04.2021-24.04.2021	Entropy change on mixing of ideal gases, standard entropy change
Week 5	26.04.2021-30.04.2021	Gibbs free energy function and variation of free energy and work function
Week 6	03.05.2021-08.05.2021	Criteria of spontaneity of feasibility of a reaction, Nernst Heat theorem
Week 7	10.05.2021-15.05.2021	Third law of thermodynamics and its verification, Boltzmann entropy equation
Week 8	17.05.2021-22.05.2021	Electrochemical and electrolytic cell
Week 9	24.05.2021-29.05.2021	Electrode potential and calculation of EMF of a cell
Week 10	01.06.2021-05.06.2021	Reversible and irreversible cells and electrodes
Week 11	07.06.2021-12.06.2021	Thermodynamics of Cell reactions- Calculations of cell reactions
Week 12	14.06.2021-19.06.2021	Applications of electrochemical series & Activity and activity coefficient
Week 13	21.06.2021-26.06.2021	Thermodynamics of a reversible cell
Week 14	28.06.2021-03.07.2021	Thermodynamics of single electrode potential and Derivation of Nernst equation
Week 15	05.07.2021-09.07.2021	Electrolytic polarization, Deposition potential and overvoltage

Lesson Plan (2020-21) Even Semester

Name of the Assistant Professor : Kavita Yadav

Class B.Sc. 4th Sem Subject: CHEMISTRY Paper: Organic Chemistry

Week	Date	Topic
1	01.04.2021-03.04.2021	Infrared (IR) absorption spectroscopy: Molecular vibrations, Hooke's law
2	05.04.2021-10.04.2021	Selection rules, Intensity and position of IR band, measurement of IR spectrum, Finger print region
3	12.04.2021-17.04.2021	Characteristic absorptions of Functional groups and interpretation of IR spectra
4	19.04.2021-24.04.2021	Interpretation of IR spectra continued and applications of IR
5	26.04.2021-30.04.2021	Amines: Structure and nomenclature, physical properties, separation of 1°, 2°, and 3° amines
6	03.05.2021-08.05.2021	Preparation of alkyl and aryl amines
7	10.05.2021-15.05.2021	Preparation of alkyl and aryl amines continued
8	17.05.2021-22.05.2021	Diazonium Salts: Diazotisation, structure of diazonium chlorides, reactions of diazonium compounds
9	24.05.2021-29.05.2021	Coupling reaction and its synthetic applications
10	01.06.2021-05.06.2021	Nitro compounds : Preparation and properties
11	07.06.2021-12.06.2021	Aldehydes and Ketones: Nomenclature and structure of carbonyl compounds
12	14.06.2021-19.06.2021	Synthesis of aldehyde and ketones
13	21.06.2021-26.06.2021	Physical properties and comparison of reactivities
14	28.06.2021-03.07.2021	Mechanism of nucleophilic substitution reactions, benzoin, aldol, perkin and knoevenagel condensations
15	05.07.2021-09.07.2021	Condensation with ammonia and its derivatives, wittig, mannich, Baeyer-villiger oxidation, cannizzaro reaction, MPV, Clemmensen, wolf-kishner, LiAlH ₄ and NaBH ₄ reductions

Lesson Plan (2020-21)		
Name of the Assistant Professor : Manu Kumar Bhandoria		
Subject: Chemistry		Paper: Inorganic Chemistry
		Sem: 5th Sem
Week	Date	Topic
1	25.11.2020-28.11.2020	Ch1- Meta-ligand Bonding in Transition Metal Complexes Limitations of valence bond theory
2	01.12.2020-05.12.2020	An elementary idea of crystal-field theory
3	17.12.2020-12.12.2020	Crystal field splitting in octahedral, tetrahedral and square planar complexes
4	14.12.2020-19.12.2020	Factor affecting the crystal field parameters.
5	21.12.2020-26.12.2020	Ch2- Thermodynamic and Kinetic Aspects of Metal Complexes A brief outline of thermodynamic stability of metal complexes and factors affecting the stability
6	28.12.2020-31.12.2020	Substitution reactions of square planar complexes of Pt(II)
7	11.01.2021-16.01.2021	Ch3- Magnetic Properties of Transition Metal Complexes Types of magnetic behavior
8	18.01.2021-23.01.2021	Methods of determining magnetic susceptibility, spin only formula
9	25.01.2021-30.01.2021	L-S coupling and Correlation of L and S values
10	01.02.2021-06.02.2021	Orbital contribution to magnetic moments
11	08.02.2021-13.02.2021	Application of magnetic moment data for 3d metal complexes.
12	15.02.2021-20.02.2021	Ch4- Electron Spectra of Transition Metal Complexes Types of electronic transitions
13	22.02.2021-27.02.2021	Selection rules for d-d transitions
14	01.03.2021-06.03.2021	Spectroscopic ground states and Spectrochemical series
15	08.03.2021-13.03.2021	Orgel-energy level diagram for d1 and d9 states discussion of the electronic spectrum of $[\text{Ti}(\text{H}_2\text{O})_6]^+$ complex ion.

Lesson Plan (2020-21)		
Name of the Assistant Professor : Manu Kumar Bhandoria		
Subject: Chemistry		Paper: Physical Chemistry
		Sem: 5th Sem
Week	Date	Topic
1	25.11.2020-28.11.2020	Ch1- Quantum Mechanics-I Black Body radiation, Planck's radiation law
2	01.12.2020-05.12.2020	Photoelectric effect, Heat capacity of solids, Compton effect
3	17.12.2020-12.12.2020	wave function and its significance of Postulates of quantum mechanics
4	14.12.2020-19.12.2020	Quantum mechanical operator, Commutations relations
5	21.12.2020-26.12.2020	Hamiltonian operator, Hermitian operator

6	28.12.2020-31.12.2020	Average value of square of Hermitian as a positive quantity
7	11.01.2021-16.01.2021	Role of operators in quantum mechanics, To show quantum mechanically that position and momentum cannot be predicated simultaneously
8	18.01.2021-23.01.2021	Determination of wave function energy of a particle in one dimensional box
9	25.01.2021-30.01.2021	Pictorial representation and its significance
10	01.02.2021-06.02.2021	Ch2- Physical Properties and Molecular Structure Optical activity, Polarization- (Clausius - Mossotti equation)
11	08.02.2021-13.02.2021	Orientation of dipoles in an electric field, dipole moment, induced dipole moment
12	15.02.2021-20.02.2021	Measurement of dipole moment - temperature method and refractivity method *dipole moment and structure of molecules.
13	22.02.2021-27.02.2021	Magnetic permeability, Magnetic susceptibility and its determination.
14	01.03.2021-06.03.2021	Application of magnetic susceptibility
15	08.03.2021-13.03.2021	Magnetic properties - paramagnetism, diamagnetism and ferromagnetics.

Lesson Plan (2020-21)

Name of the Assistant Professor : Kavita Yadav

Subject: Chemistry

Paper: Organic Chemistry

Sem: 5th Sem

Week	Date	Topic
1	25.11.2020-28.11.2020	Carbohydrates I : Classification and nomenclature.
2	01.12.2020-05.12.2020	Monosaccharides, Osazone, Interconversion of Glucose and Fructose
3	17.12.2020-12.12.2020	Chain lengthening and Chain shortening of aldoses, Configuration of monosaccharides
4	14.12.2020-19.12.2020	Erythro and Threo diastereomers, Conversion of Glucose and Mannose, Formation of glycosides, ethers and esters
5	21.12.2020-26.12.2020	Determination of ring size of Glucose and Fructose & their open chain structure, Mechanism of Mutarotation, Structure of ribose and deoxyribose
6	28.12.2020-31.12.2020	Carbohydrates II: Introduction of Disaccharides (maltose, sucrose & lactose)
7	11.01.2021-16.01.2021	Polysaccharides (Starch and Cellulose), Structure of various carbohydrates
8	18.01.2021-23.01.2021	Organometallic Compounds:- Organomagnesium compounds- preparation and chemical properties
9	25.01.2021-30.01.2021	Organozinc compounds – preparation and chemical properties
10	01.02.2021-06.02.2021	Organolithium compounds- preparation and chemical properties
11	08.02.2021-13.02.2021	<u>NMR Spectroscopy I</u> -Principle, No. of signal and peak area, Equivalent and non-equivalent protons
12	15.02.2021-20.02.2021	Position of signal and chemical shift, Shielding and Deshielding of protons

13	22.02.2021-27.02.2021	Proton counting, Shifting of signals and coupling constant, Magnetic equivalence of protons
14	01.03.2021-06.03.2021	NMR Spectroscopy II
15	08.03.2021-13.03.2021	Discussion of NMR spectra of molecules

Lesson Plan (2020-21) Even Semester**Name of the Assistant Professor : Manu Kumar Bhandoria****Class B.Sc. 6th Sem Subject: CHEMISTRY Paper: Inorganic Chemistry**

Week	Date	Topic
1	01.04.2021-03.04.2021	Organometallic chemistry: Nomenclature and classification of OMC
2	05.04.2021-10.04.2021	Preparation , properties and bonding of alkyl of Li and Al
3	12.04.2021-17.04.2021	Preparation , properties and bonding of alkyl of Hg and Sn
4	19.04.2021-24.04.2021	Metal-ethylenic complexes
5	26.04.2021-30.04.2021	MonoNuclear carbonyls and the nature of bonding in metal carbonyls
6	03.05.2021-08.05.2021	Acids and Bases, HSAB concept: Arrhenius, Bronsted-Lowry, Lux-Flood concept
7	10.05.2021-15.05.2021	Solvent system and Lewis concept of acids and bases
8	17.05.2021-22.05.2021	Concept of Hard and Soft acids and bases
9	24.05.2021-29.05.2021	Symbiosis, Electronegativity and hardness and softness
10	01.06.2021-05.06.2021	Bioinorganic Chemistry: Essential and Trace elements in biological processes
11	07.06.2021-12.06.2021	Metalloporphyrins(Haemoglobin and myoglobin)
12	14.06.2021-19.06.2021	Biological role of alkali and alkaline earth metal ions with special reference to Ca^{2+}
13	21.06.2021-26.06.2021	Nitrogen fixation
14	28.06.2021-03.07.2021	Silicones
15	05.07.2021-09.07.2021	Phosphazenes

Lesson Plan (2020-21) Even Semester**Name of the Assistant Professor : Manu Kumar Bhandoria****Class B.Sc. 6th Sem Subject: CHEMISTRY Paper: Physical Chemistry**

Week	Date	Topic
1	01.04.2021-03.04.2021	Theory of Electronic Band Spectra and Franck Condon Principle
2	05.04.2021-10.04.2021	Term symbols and selection rules for molecular electronic transitions
3	12.04.2021-17.04.2021	Molecular orbitals, their energy levels, electronic transitions and electronic bands
4	19.04.2021-24.04.2021	Photochemical and thermochemical process and Laws of photochemistry
5	26.04.2021-30.04.2021	Quantum efficiency/yield and its experimental determination for a photochemical reaction
6	03.05.2021-08.05.2021	Fluorescence and Phosphorescence on the basis of Jablonski Diagram Chemiluminescence
7	10.05.2021-15.05.2021	Photosensitization and quenching
8	17.05.2021-22.05.2021	Photo inhibitors and photochemical equilibrium

9	24.05.2021-29.05.2021	Types of solutions, Ideal and Non Ideal solution
10	01.06.2021-05.06.2021	Vapour phase and Raoult's law
11	07.06.2021-12.06.2021	Colligative properties
12	14.06.2021-19.06.2021	Abnormal molecular mass
13	21.06.2021-26.06.2021	Gibbs phase rule- Mathematical expression and various terms involved in it
14	28.06.2021-03.07.2021	Advantages and limitations of Phase rule, Phase diagram
15	05.07.2021-09.07.2021	Applications of phase rule to one- and two- component system

Lesson Plan (2020-21) Even Semester

Name of the Assistant Professor : Kavita Yadav

Class B.Sc. 6th Sem Subject: CHEMISTRY Paper: Organic Chemistry

Week	Date	Topic
1	01.04.2021-03.04.2021	Heterocyclic Chemistry-I : Pyrrole and Furan- prep ⁿ and properties
2	05.04.2021-10.04.2021	Thiophene and Pyridine- prep ⁿ and properties
3	12.04.2021-17.04.2021	Heterocyclic Chemistry-II: Indole- prep ⁿ and properties
4	19.04.2021-24.04.2021	Quinoline and Isoquinoline - prep ⁿ and properties
5	26.04.2021-30.04.2021	Organosulphur compounds: Thiols and Thioethers- prep ⁿ and properties
6	03.05.2021-08.05.2021	Sulphonic acid and Sulphonamides- prep ⁿ and properties
7	10.05.2021-15.05.2021	Sulphaguanidine and Synthetic Detergents
8	17.05.2021-22.05.2021	Discussion of important topics of section A and B
9	24.05.2021-29.05.2021	Organic synthesis via enolates: diethyl malonate
10	01.06.2021-05.06.2021	Organic synthesis via enolates: ethyl acetoacetate
11	07.06.2021-12.06.2021	Synthetic Polymers: Addition or chain growth, free radical, ionic, Ziegler –Natta, condensation polymerisation
12	14.06.2021-19.06.2021	Vinyl polymers, polyester, polyamides
13	21.06.2021-26.06.2021	Formaldehyde resins, epoxy resin, polyurethanes, natural and synthetic rubbers
14	28.06.2021-03.07.2021	Amino Acids, Peptides and Proteins: Classification and preparation of amino acids
15	05.07.2021-09.07.2021	Peptides: Structure, nomenclature, end group analysis, selective hydrolysis and structure of proteins