

Lesson Plan Format (2022-23)		
Name of the Assistant Professor : Manu Kumar Bhandoria		
Subject: Chemistr Paper: Inorganic Chemistry Sem: 1st Sem		
Week	Date	Topic
1	12/09/2022-17/09/2022	Ch1- Atomic Structure, Idea of de Broglie Matter Waves
2	19/09/2022-24/09/2022	Heisenberg Uncertainty Principle, Atomic orbitals, Quantam Numbers
3	26/09/2022-30/09/2022	Radial and angular wave funtions and Probability distribution curve, Shapes of s, p, d orbitals
4	03/10/2022-08/10/2022	Ch 2- Periodic Properties, General Principles of periodic table Aufbau and Pauli exclusion principles, Hund's multiplicity rule
5	10/10/2022- 15/10/2022	Electronic configuration of elements, Effective Nuclear charge , Slater's Rules , Atomic and Ionic radii, Ionization energy. Electron affinity and Electronegativity - definition
6	17/10/2022- 22/10/2022	Electron affinity and Electronegativity - definition, Methods of determination or evaluation, Trends in periodic table (in s& p block elements)
7	24/10/2022- 26/10/2022	Ch 3- Covalent Bond, Valence bond theory and its limitations, Directional characteristics of covalent bond
8	27/10/2022- 31/10/2022	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	01/11/2022- 05/11/2022	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	07/11/2022- 12/11/2022	MO theory of heteronuclear (CO and NO) diatomic molecules, bondstrength and bond energy, Percentage ionic character from dipole moment and electron negativity difference.
11	14/11/2022- 19/11/2022	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	21/11/2022- 26/11/2022	Semiconductors, Lattice energy (methamtical derivation excluded), Born-Haber cycle
13	28/11/2022- 30/11/2022	Solvation energy and its relation with solubility of ionic solids
14	01/12/2022-03/12/2022	Ploarizing power and polarisability of ions, Fajan's rule.
15	05/12/2022-10/12/2022	Revision of difficult concepts of inorganic chemistry
16	12/12/2022-15/12/2022	Revision of difficult concepts of inorganic chemistry
Lesson Plan Format (2022-23)		
Name of the Assistant Professor : Kavita Yadav		
Subject: Chemistry Paper: Physical Chemistry Sem: 1st Sem		
Week	Date	Topic
1	12/09/2022-17/09/2022	Ch1- Gaseous States Maxwell's distribution of velocities and energies (derivation excluded) Calculation of root mean square velocity
2	19/09/2022-24/09/2022	Average velocity and most probable velocity, Collision diameter, Collision number, Collision frequency and mean free path
3	26/09/2022-30/09/2022	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	03/10/2022-08/10/2022	Ch 2- Critical Phenomenon, Critical temperature, Critical pressure, Critical volume and their determination, PV isotherms of real gases and continuity of states
5	10/10/2022- 15/10/2022	The isotherm of Vander Waal's equation, Relationship between critical constants and Vander Waal's Constants
6	17/10/2022- 22/10/2022	Critical Compressibility factor, The law of corresponding states, Liquification of gases
7	24/10/2022- 26/10/2022	Ch3- Liquid States Introduction, Structure of liquids, Properties of Liquids
8	27/10/2022- 31/10/2022	Surface tension, Viscosity vapour pressure , Optical rotation and their determinations
9	01/11/2022- 05/11/2022	Ch-4 Solid State Classification of solids, Laws of crystallography (introduction), (i) Law of constancy of interfacial angles
10	07/11/2022- 12/11/2022	(ii) Law of rationality of indices, (iii) Law of symmetry
11	14/11/2022- 19/11/2022	Symmetry elements of crystals, Definition of unit cell & space lattice
12	21/11/2022- 26/11/2022	Bravais lattices , Crystal system , X ray diffraction by crystals
13	28/11/2022- 30/11/2022	Derivation of Bragg equation, Determination of crystal structure of NaCl, KCl.
14	01/12/2022-03/12/2022	crystals, types of liquid crystals
15	05/12/2022-10/12/2022	Applications of liquid crystals.
16	12/12/2022-15/12/2022	Revision of difficult concepts of physical chemistry

Lesson Plan Format (2022-23)

Name of the Assistant Professor : Kavita Yadav

Subject: Chemistry

Paper: Organic Chemistry

Sem: 1st Sem

Week	Date	Topic
1	12/09/2022-17/09/2022	Section A:- Structure and Bonding- Localised and delocalized chemical bond, vanderwaal's interactions, Resonance
2	19/09/2022-24/09/2022	Hyperconjugation, Inductive, Electromeric, comparison of electronic effects
3	26/09/2022-30/09/2022	Stereochemistry of Organic compound-I
4	03/10/2022-08/10/2022	Optical isomerism, elements of symmetry, molecular chirality, Enantiomers and diastereomers
5	10/10/2022- 15/10/2022	Resolution of enantiomers, Inversion, retention and racemisation
6	17/10/2022- 22/10/2022	Section B:- Stereochemistry of Organic compound-II, RS nomenclature
7	24/10/2022- 26/10/2022	Geometric isomerism, Conformational isomerism
8	27/10/2022- 31/10/2022	Section C:- Mechanism of organic reactions, Electrophile and nucleophile, Types of organic reactions
9	01/11/2022- 05/11/2022	Reactive Intermediates- Carbocation, carbanion, free radical, nitrene, carbenes and arynes
10	07/11/2022- 12/11/2022	Section D:- Alkanes and cycloalkanes, IUPAC Nomenclature
11	14/11/2022- 19/11/2022	Isomerism, Method of preparation and properties
12	21/11/2022- 26/11/2022	Cycloalkanes- nomenclature, synthesis and derivatives, photochemical (2+2) cycloaddition reactions
13	28/11/2022- 30/11/2022	Dehalogenation of dihalides, Baeyer's strain theory
14	01/12/2022-03/12/2022	Theory of strainless rings, Pyrolysis of Calcium and barium salt
15	05/12/2022-10/12/2022	Revision of previous concepts
16	12/12/2022-15/12/2022	Revision of previous difficult topics

Lesson Plan (2022-23) Even Semester		
Name of the Assistant Professor : Manu Kumar Bhandoria		
Class B.Sc. 2nd Sem Subject: CHEMISTRY Paper: Inorganic Chemistry		
Week	Date	Topic
1	01.01.2020-04.01.2020	Hydrogen bonding and Vanderwaal's forces: Hydrogen bonding- Definition, types, effects on properties
2	06.01.2020-11.01.2020	Applications of hydrogen bonding and various types of vanderwaal's forces
3	13.01.2020-18.01.2020	Metallic bond- Introduction, band theory of metallic bond
4	20.01.2020-25.01.2020	Semiconductors-Introduction, Types and applications
5	27.01.2020-31.01.2020	s-block elements: Comparative study of the elements
6	03.02.2020-08.02.2020	Diagonal relationship, hydrides
7	10.02.2020-15.02.2020	Solvation and complexation tendencies
8	17.02.2020-22.02.2020	Chemistry of Noble gases: Reactivity, chemistry of Xenon
9	24.02.2020-29.02.2020	Structure and bonding of fluorides, oxides and oxyfluorides of xenon
10	02.03.2020-07.03.2020	p-block elements: comparative study
11	16.03.2020-21.03.2020	Boron family: Diborane-properties and structure
12	23.03.2020-28.03.2020	Borazene- chemical properties and structure , Halides of B and Al
13	01.04.2020-04.04.2020	Carbon family-Catenation, sp - $d\pi$ bonding, carbides
14	06.04.2020-11.04.2020	Fluorocarbons, silicates and their structure, silicones
15	13.04.2020-18.04.2020	Nitrogen Family, Oxygen family, Halogens
16	20.04.2020-25.04.2020	Revision
17	27.04.2020-30.04.2020	Revision
Lesson Plan (2022-23) Even Semester		
Name of the Assistant Professor : Manu Kumar Bhandoria		
Class B.Sc. 2nd Sem Subject: CHEMISTRY Paper: Physical Chemistry		
Week	Date	Topic
1	01.01.2020-04.01.2020	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
2	06.01.2020-11.01.2020	Zero order and first order reactions and their integrated rate expression, Half life period, Pseudofirst order reactions and kinetics of second order reactions
3	13.01.2020-18.01.2020	Second and third order reactions and their integrated rate expressions with characteristics, Mechanism of reaction rate and Rate law
4	20.01.2020-25.01.2020	Molecularity and order of reaction and methods for the determination of rate of reaction
5	27.01.2020-31.01.2020	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
6	03.02.2020-08.02.2020	Transition state theory and effect of pressure on reaction rate
7	10.02.2020-15.02.2020	Ch3-Electrochemistry *Electrolytic Conduction and its types
8	17.02.2020-22.02.2020	Molar conductivity and its measurement
9	24.02.2020-29.02.2020	Arrhenius Theory of Ionization
10	02.03.2020-07.03.2020	Ostwald dilution law, Strong and weak electrolytes
11	16.03.2020-21.03.2020	Debye Huckel Theory of Strong electrolytes and Migration of ions
12	23.03.2020-28.03.2020	Discharge of ions on electrolysis

13	01.04.2020-04.04.2020	Transport number and its determination
14	06.04.2020-11.04.2020	Kohlrausch Law and its applications
15	13.04.2020-18.04.2020	Conductometric titrations and buffer solutions
16	20.04.2020-25.04.2020	Revision
17	27.04.2020-30.04.2020	Revision
Lesson Plan (2022-23) Even Semester		
Name of the Assistant Professor : Manu Kumar Bhandoria/Kavita Yadav		
Class B.Sc. 2nd Sem Subject: CHEMISTRY Paper: Organic Chemistry		
Week	Date	Topic
1	01.01.2020-04.01.2020	Alkene: Nomenclature, mechanism of dehydration of alcohols and dehydrohalogenation of alkyl halide
2	06.01.2020-11.01.2020	Saytzeff's rule, Hoffmann elimination, physical properties of alkene
3	13.01.2020-18.01.2020	Chemical reactions of alkene
4	20.01.2020-25.01.2020	Chemical properties of alkene continued.
5	27.01.2020-31.01.2020	Arenes and Aromaticity: Nomenclature of benzene derivatives, aromatic nucleus and side chain.
6	03.02.2020-08.02.2020	Aromaticity: Huckel rule, annulenes, aromatic, anti-aromatic and non-aromatic compounds
7	10.02.2020-15.02.2020	Aromatic electrophilic substitution, mechanism of nitration, halogenations, sulphonation and Friedel Crafts reaction
8	17.02.2020-22.02.2020	Energy profile diagram. Activating, deactivating substituents and orientation
9	24.02.2020-29.02.2020	Dienes: Nomenclature and classification, isolated, conjugated and cumulated dienes
10	02.03.2020-07.03.2020	Structure of butadiene reactions, Chemical reactions-1,2 and 1,4 additions
11	16.03.2020-21.03.2020	Diels-Alder reaction, Alkynes: structure, bonding and nomenclature
12	23.03.2020-28.03.2020	Chemical reactions of alkynes
13	01.04.2020-04.04.2020	Alkyl and Aryl halides: Nomenclature, classification and preparation
14	06.04.2020-11.04.2020	Chemical reactions of alkyl halides
15	13.04.2020-18.04.2020	Mechanism and stereochemistry of SN reactions
16	20.04.2020-25.04.2020	Revision
17	27.04.2020-30.04.2020	Revision

Lesson Plan Format (2022-23)		
Name of the Assistant Professor : Manu Kumar Bhandoria		
Subject: Chemistry	Paper: Inorganic Chemistry	Sem: 3rd Sem
Subject:	Date	Topic
1	12/09/2022-17/09/2022	Ch1- Chemistry of Elements of Ist transition series Definition of transtion elements
2	19/09/2022-24/09/2022	Position in the periodic table
3	26/09/2022-30/09/2022	General characteristics & properties of Ist transition elements
4	03/10/2022-08/10/2022	Structure & properties of some compounds of transition elements- TiO ₂ , VOCl ₂ , FeCl ₃ , CuCl ₂ and Ni(CO) ₄
5	10/10/2022- 15/10/2022	Ch 2- Chemistry of Elements of IInd & IIIRD transition series General characteristics and properties of the IInd and IIIRD transition elements, Stereochemistry, Revision
6	17/10/2022- 22/10/2022	Ch3- Coordination Compounds, Werner's coordination theory, Effective atomic number, concept of Chelates
7	24/10/2022- 26/10/2022	Nomenclature of coordination compounds
8	27/10/2022- 31/10/2022	Isomerism in coordination compounds
9	01/11/2022- 05/11/2022	Valence bond theory of transition metal complexes.
10	07/11/2022- 12/11/2022	Ch4- Non- aqueous Solvents Physical properties of a solvent
11	14/11/2022- 19/11/2022	Types of a solvent and their general characteristics
12	21/11/2022- 26/11/2022	Reactions in non-aqueous solvents with reference to liquid NH ₃ and liquid SO ₂
13	28/11/2022- 30/11/2022	Revision of difficult concepts of inorganic chemistry
14	01/12/2022-03/12/2022	Test and discussion
15	05/12/2022-10/12/2022	Revision of difficult concepts of inorganic chemistry
16	12/12/2022-15/12/2022	Revision of difficult topics
Lesson Plan (2022-23)		
Name of the Assistant Professor : Manu Kumar Bhandoria		
Subject: Chemistry	Paper: Physical Chemistry	Sem: 3rd Sem
Week	Date	Topic
1	12/09/2022-17/09/2022	Thermodynamic Terms Intoduction
2	19/09/2022-24/09/2022	Thermodynamic Properties and equilibrium
3	26/09/2022-30/09/2022	1st law of thermodynamic, Internal energy and enthalpy
4	03/10/2022-08/10/2022	Heat capacities and relation between them
5	10/10/2022- 15/10/2022	Joule Thomson coefficient for Ideal and Real gases
6	17/10/2022- 22/10/2022	Inversion temp and calculation of work and heat
7	24/10/2022- 26/10/2022	Change in internal enrgy and enthalpy for Isothermal and Adiabatic process
8	27/10/2022- 31/10/2022	Reversible process, Euilibrium constant and free energy
9	01/11/2022- 05/11/2022	Chemical potential and its characterstics
10	07/11/2022- 12/11/2022	Thermodynamic derivation of Law of Chemical equilibrium
11	14/11/2022- 19/11/2022	Temp dependence of equilibrium constant
12	21/11/2022- 26/11/2022	Clausius- Clapeyron Equation
13	28/11/2022- 30/11/2022	Nernst distribution law- Thaermodynamic derivation
14	01/12/2022-03/12/2022	Degree of Hydrolysis and hdrolysis constant
15	05/12/2022-10/12/2022	Equilibrium constant and Process of extraction
16	12/12/2022-15/12/2022	Revision of difficult topics

Lesson Plan (2022-23)		
Name of the Assistant Professor : Kavita Yadav		
Subject: Chemistry		Paper: Organic Chemistry
Sem: 3rd Sem		
Week	Date	Topic
1	12/09/2022-17/09/2022	Section A:- Alcohols:- Nomenclature and method of preparation
2	19/09/2022-24/09/2022	Physical and Chemical properties of alcohols
3	26/09/2022-30/09/2022	Dihydric alcohols- nomenclature, method of preparation, pinacol-pinacolone rearrangement
4	03/10/2022-08/10/2022	Epoxides:- Synthesis and Chemical properties, Reactions of RMgX and RLi with epoxides
5	10/10/2022-15/10/2022	Section B:- Phenols- Nomenclature, Preparation and Physical properties.
6	17/10/2022-22/10/2022	Reactions of Phenols
7	24/10/2022-26/10/2022	Section C:- UV Spectroscopy, Absorption Laws, Molar absorptivity, Presentation and analysis of UV Spectra
8	27/10/2022-31/10/2022	Types of electronic transitions
9	01/11/2022-05/11/2022	Effect of conjugation, Concepts of Chromophore and Auxochrome
10	07/11/2022-12/11/2022	Bathochromic, Hypsochromic, hyperchromic and hypochromic shift, Woodward-Fieser rules
11	14/11/2022-19/11/2022	Applications of UV Spectroscopy
12	21/11/2022-26/11/2022	Section D:- Carboxylic acid and Acid derivatives, Nomenclature, preparation and physical properties
13	28/11/2022-30/11/2022	Reactions of carboxylic acid, Acid Chlorides- preparation and properties
14	01/12/2022-03/12/2022	Esters- preparation and properties, Amides- preparation and properties
15	05/12/2022-10/12/2022	Acid anhydrides- preparation and properties, Mechanism of esterification and hydrolysis
16	12/12/2022-15/12/2022	Revision of difficult topics

Lesson Plan (2022-23) Even Semester		
Name of the Assistant Professor : Manu Kumar Bhandoria/Kavita Yadav		
Class B.Sc. 4th Sem Subject: CHEMISTRY Paper: Inorganic Chemistry		
Week	Date	Topic
1	01.01.2020-04.01.2020	Chemistry of f-block elements lanthanides: electronic structure,
2	06.01.2020-11.01.2020	Ionic radii and lanthanide contraction
3	13.01.2020-18.01.2020	Complex formation, occurrence and isolation of lanthanide
4	20.01.2020-25.01.2020	Chemistry of lanthanides compounds
5	27.01.2020-31.01.2020	Chemistry of f-block elements Actinides: General features
6	03.02.2020-08.02.2020	Chemistry of actinides, separation of Np, Pu and Am from U
7	10.02.2020-15.02.2020	Comparison of properties of lanthanides and actinides and with T.E.
8	17.02.2020-22.02.2020	Theory of Qualitatives and Quantitative Inorganic Analysis-I
9	24.02.2020-29.02.2020	Chemistry of analysis of various acidic radicals in typical
10	02.03.2020-07.03.2020	Chemistry of analysis of various acidic radicals including their removal in the analysis of basic radical
11	16.03.2020-21.03.2020	Chemistry of analysis of various acidic radicals including their removal in the analysis of basic radical
12	23.03.2020-28.03.2020	Theory of Qualitatives and Quantitative Inorganic Analysis-II
13	01.04.2020-04.04.2020	Chemistry of analysis of various groups basic radicals
14	06.04.2020-11.04.2020	Theory of precipitation, co-precipitation, post-precipitation
15	13.04.2020-18.04.2020	Purification of precipitates
16	20.04.2020-25.04.2020	Revision
17	27.04.2020-30.04.2020	Revision
Lesson Plan (2022-23) Even Semester		
Name of the Assistant Professor : Manu Kumar Bhandoria		
Class B.Sc. 4th Sem Subject: CHEMISTRY Paper: Physical Chemistry		
Week	Date	Topic
1	01.01.2020-04.01.2020	Different laws of thermodynamics and Cyclic process
2	06.01.2020-11.01.2020	Carnot Cycle and its efficiency, Carnot theorem
3	13.01.2020-18.01.2020	Entropy change in reversible and irreversible process
4	20.01.2020-25.01.2020	Entropy change on mixing of ideal gases, standard entropy change
5	27.01.2020-31.01.2020	function
6	03.02.2020-08.02.2020	theorem
7	10.02.2020-15.02.2020	equation
8	17.02.2020-22.02.2020	Electrochemical and electrolytic cell
9	24.02.2020-29.02.2020	Electrode potential and calculation of EMF of a cell
10	02.03.2020-07.03.2020	Reversible and irreversible cells and electrodes
11	16.03.2020-21.03.2020	cell reactions
12	23.03.2020-28.03.2020	coefficient
13	01.04.2020-04.04.2020	Thermodynamics of a reversible cell
14	06.04.2020-11.04.2020	Nernst equation
15	13.04.2020-18.04.2020	Electrolytic polarization, Deposition potential and overvoltage
16	20.04.2020-25.04.2020	Revision

17	27.04.2020-30.04.2020	Revision
Lesson Plan (2022-23) Even Semester		
Name of the Assistant Professor : Manu Kumar Bhandoria/Kavita Yadav		
Class B.Sc. 4th Sem Subject: CHEMISTRY Paper: Organic Chemistry		
Week	Date	Topic
1	01.01.2020-04.01.2020	Infrared (IR) absorption spectroscopy: Molecular vibrations, Hooke's
2	06.01.2020-11.01.2020	Selection rules, Intensity and position of IR band, measurement of IR spectrum, Finger print region
3	13.01.2020-18.01.2020	Characteristic absorptions of Functional groups and interpretation of
4	20.01.2020-25.01.2020	Interpretation of IR spectra continued and applications of IR
5	27.01.2020-31.01.2020	Amines: Structure and nomenclature, physical properties, separation
6	03.02.2020-08.02.2020	Preparation of alkyl and aryl amines
7	10.02.2020-15.02.2020	Preparation of alkyl and aryl amines continued
8	17.02.2020-22.02.2020	Diazonium Salts: Diazotisation, structure of diazonium chlorides, reactions of diazonium compounds
9	24.02.2020-29.02.2020	Coupling reaction and its synthetic applications
10	02.03.2020-07.03.2020	Nitro compounds : Preparation and properties
11	16.03.2020-21.03.2020	Aldehydes and Ketones: Nomenclature and structure of carbonyl
12	23.03.2020-28.03.2020	Synthesis of aldehyde and ketones
13	01.04.2020-04.04.2020	Physical properties and comparison of reactivities
14	06.04.2020-11.04.2020	Mechanism of nucleophilic substitution reactions, benzoin, aldol, perkin and knoevenagel condensations
15	13.04.2020-18.04.2020	Condensation with ammonia and its derivatives, wittig, mannich, Baeyer-villiger oxidation, cannizzaro reaction, MPV, Clemmensen,
16	20.04.2020-25.04.2020	Revision
17	27.04.2020-30.04.2020	Revision

Lesson Plan (2022-23)		
Name of the Assistant Professor : Manu Kumar Bhandoria		
Subject: Chemistry	Paper: Inorganic Chemistry	Sem: 5th Sem
Week	Date	Topic
1	12/09/2022-17/09/2022	Ch1- Meta-ligand Bonding in Transition Metal Complexes Limitations of valence bond theory
2	19/09/2022-24/09/2022	An elementary idea of crystal-field theory
3	26/09/2022-30/09/2022	Crystal field splitting in octahedral, tetrahedral and square planar complexes
4	03/10/2022-08/10/2022	Factor affecting the crystal field parameters.
5	10/10/2022-15/10/2022	Ch2- Thermodynamic and Kinetic Aspects of Metal Complexes A brief outline of thermodynamic stability of metal complexes and factors affecting the stability
6	17/10/2022-22/10/2022	Substitution reactions of square planar complexes of Pt(II)
7	24/10/2022-26/10/2022	Ch3- Magnetic Properties of Transition Metal Complexes Types of magnetic behavior
8	27/10/2022-31/10/2022	Methods of determining magnetic susceptibility, spin only formula
9	01/11/2022-05/11/2022	L-S coupling and Correlation of L and S values
10	07/11/2022-12/11/2022	Orbital contribution to magnetic moments
11	14/11/2022-19/11/2022	Application of magnetic moment data for 3d metal complexes.
12	21/11/2022-26/11/2022	Ch4- Electron Spectra of Transition Metal Complexes Types of electronic transitions
13	28/11/2022-30/11/2022	Selection rules for d-d transitions
14	01/12/2022-03/12/2022	Spectroscopic ground states and Spectrochemical series
15	05/12/2022-10/12/2022	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.
16	12/12/2022-15/12/2022	Revision
Lesson Plan (2022-23)		
Name of the Assistant Professor : Manu Kumar Bhandoria		
Subject: Chemistry	Paper: Physical Chemistry	Sem: 5th Sem
Week	Date	Topic
1	12/09/2022-17/09/2022	Ch1- Quantum Mechanics-I Black Body radiation, Planck's radiation law
2	19/09/2022-24/09/2022	Photoelectric effect, Heat capacity of solids, Compton effect
3	26/09/2022-30/09/2022	wave function and its significance of Postulates of quantum mechanics
4	03/10/2022-08/10/2022	Quantum mechanical operator, Commutations relations
5	10/10/2022-15/10/2022	Hamiltonian operator, Hermitian operator
6	17/10/2022-22/10/2022	Average value of square of Hermitian as a positive quantity
7	24/10/2022-26/10/2022	Role of operators in quantum mechanics, To show quantum mechanically that position and momentum cannot be predicated simultaneously
8	27/10/2022-31/10/2022	Determination of wave function energy of a particle in one dimensional box

9	01/11/2022- 05/11/2022	Pictorial representation and its significance
10	07/11/2022- 12/11/2022	Ch2- Physical Propertise and Molecular Structure Optical activity, Polarization- (clausius - Mossotti equation)
11	14/11/2022- 19/11/2022	Orientation of dipoles in an electric field, dipole moment , included dipole moment
12	21/11/2022- 26/11/2022	Measurement of dipole moment - temperature method and refractivity method , dipole moment and structure of molecules.
13	28/11/2022- 30/11/2022	Magnetic permeability, Magnetic susceptibility and its determination.
14	01/12/2022-03/12/2022	Application of magnetic susceptibility
15	05/12/2022-10/12/2022	Magnetic properties - paramagnetism, diamagnetism and ferromagnetics.
16	12/12/2022-15/12/2022	Revision

Lesson Plan (2022-23)

Name of the Assistant Professor : Kavita Yadav

Subject: Chemistry

Paper: Organic Chemistry

Sem: 5th Sem

Week	Date	Topic
1	12/09/2022-17/09/2022	Carbohydrates I : Classification and nomenclature.
2	19/09/2022-24/09/2022	Monosaccharides, Osazone, Interconversion of Glucose and Fructose
3	26/09/2022-30/09/2022	Chain lengthening and Chain shortening of aldoses, Configuration of monosaccharides
4	03/10/2022-08/10/2022	Erythro and Threo diastereomers, Conversion of Glucose and Mannose, Formation of glycosides, ethers and esters
5	10/10/2022- 15/10/2022	Determination of ring size of Glucose and Fructose & their open chain structure, Mechanism of Mutarotation, Structure of ribose and deoxyribose
6	17/10/2022- 22/10/2022	Carbohydrates II: Introduction of Disaccharides (maltose, sucrose & lactose)
7	24/10/2022- 26/10/2022	Polysaccharides (Starch and Cellulose), Structure of various carbohydrates
8	27/10/2022- 31/10/2022	Organometallic Compounds:- Organomagnesium compounds- preparation and chemical properties
9	01/11/2022- 05/11/2022	Organozinc compounds – preparation and chemical properties
10	07/11/2022- 12/11/2022	Organolithium compounds- preparation and chemical properties
11	14/11/2022- 19/11/2022	NMR Spectroscopy I-Principle, No. of signal and peak area, Equivalent and non-equivalent protons
12	21/11/2022- 26/11/2022	Position of signal and chemical shift, Shielding and Deshielding of protons
13	28/11/2022- 30/11/2022	Proton counting, Shifting of signals and coupling constant, Magnetic equivalence of protons
14	01/12/2022-03/12/2022	NMR Spectroscopy II
15	05/12/2022-10/12/2022	Discussion of NMR spectra of molecules
16	12/12/2022-15/12/2022	Revision

Lesson Plan (2022-23) Even Semester		
Name of the Assistant Professor : Manu Kumar Bhandoria		
Class B.Sc. 6th Sem Subject: CHEMISTRY Paper: Inorganic Chemistry		
Week	Date	Topic
1	18.01.2023-21.01.2023	Organometallic chemistry: Nomenclature and classification of OMC
2	23.01.2023-28.01.2023	Preparation , properties and bonding of alkyl of Li and Al
3	01.02.2023-04.02.2023	Preparation , properties and bonding of alkyl of Hg and Sn
4	06.02.2023-11.02.2023	Metal-ethylenic complexes
5	13.02.2023-18.02.2023	MonoNuclear carbonyls and the nature of bonding in metal carbonyls
6	20.02.2023-25.02.2023	Acids and Bases, HSAB concept: Arrhenius, Bronsted-Lowry, Lux-Flood concept
7	27.02.2023-04.03.2023	Solvent system and Lewis concept of acids and bases
8	05.03.2023-12.03.2023	Concept of Hard and Soft acids and bases
9	13.03.2023-18.03.2023	Symbiosis, Electronegativity and hardness and softness
10	20.03.2023-25.03.2023	Bioinorganic Chemistry: Essential and Trace elements in biological processes
11	27..03.2023-01.04.2023	Metalloporphyrins(Haemoglobin and myoglobin)
12	03.04.2023-08.04.2023	Biological role of alkali and alkaline earth metal ions with special reference to Ca^{2+}
13	10.04.2023-15.04.2023	Nitrogen fixation
14	17.04.2023-22.04.2023	Silicones
15	24.04.2023-29.04.2023	Phosphazenes
Lesson Plan (2022-23) Even Semester		
Name of the Assistant Professor : Manu Kumar Bhandoria		
Class B.Sc. 6th Sem Subject: CHEMISTRY Paper: Physical Chemistry		
Week	Date	Topic
1	18.01.2023-21.01.2023	Theory of Elctronic Band Spectra and Franck Condon Principle
2	23.01.2023-28.01.2023	Term symbols and selection rules for molecular electronic transitions
3	01.02.2023-04.02.2023	Molecular orbitals, their energy levels, electronic transitions and electronic bands
4	06.02.2023-11.02.2023	Photochemical and thermochemical process and Laws pf photochemistry
5	13.02.2023-18.02.2023	Quantum efficiency/yield and its experimental determination for a photochemical reaction
6	20.02.2023-25.02.2023	Fluorescence and Phosphorescence on the basis of Jablonski Diagram, Chemiluminescence
7	27.02.2023-04.03.2023	Photosensitization and quenching

8	05.03.2023-12.03.2023	Photo inhibitors and photochemical equilibrium
9	13.03.2023-18.03.2023	Types of solutions, Ideal and Non Ideal solution
10	20.03.2023-25.03.2023	Vapour phase and Raoult's law
11	27.03.2023-01.04.2023	Colligative properties
12	03.04.2023-08.04.2023	Abnormal molecular mass
13	10.04.2023-15.04.2023	Gibbs phase rule- Mathematical expression and various terms involved in it
14	17.04.2023-22.04.2023	Advantages and limitations of Phase rule, Phase diagram
15	24.04.2023-29.04.2023	Applications of phase rule to one- and two- component system

Lesson Plan (2022-23) Even Semester

Name of the Assistant Professor : Kavita Yadav

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

Week	Date	Topic
1	18.01.2023-21.01.2023	Heterocyclic Chemistry-I : Pyrrole and Furan- prep ⁿ and properties
2	23.01.2023-28.01.2023	Thiophene and Pyridine- prep ⁿ and properties
3	01.02.2023-04.02.2023	Heterocyclic Chemistry-II: Indole- prep ⁿ and properties
4	06.02.2023-11.02.2023	Quinoline and Isoquinoline - prep ⁿ and properties
5	13.02.2023-18.02.2023	Organosulphur compounds: Thiols and Thioethers- prep ⁿ and properties
6	20.02.2023-25.02.2023	Sulphonic acid and Sulphonamides- prep ⁿ and properties
7	27.02.2023-04.03.2023	Sulphaguanidine and Synthetic Detergents
8	05.03.2023-12.03.2023	Discussion of important topics of section A and B
9	13.03.2023-18.03.2023	Organic synthesis via enolates: diethyl malonate
10	20.03.2023-25.03.2023	Organic synthesis via enolates: ethyl acetoacetate
11	27.03.2023-01.04.2023	Synthetic Polymers: Addition or chain growth, free radical, ionic, Zeigler –Natta, condensation polymerisation
12	03.04.2023-08.04.2023	Vinyl polymers, polyester, polyamides
13	10.04.2023-15.04.2023	Formaldehyde resins, epoxy resin, polyurethanes, natural and synthetic rubbers
14	17.04.2023-22.04.2023	Amino Acids, Peptides and Proteins: Classification and preparation of amino acids
15	24.04.2023-29.04.2023	Peptides: Structure, nomenclature, end group analysis, selective hydrolysis and structure of proteins