

LESSON PLAN

NAME: Nisha Pruthi

Session 2022-23

CLASS: B.Sc. I Non-Med (Organic Chemistry)

SECTION: B ,C, Medical

Month	Contents
February	Alkene Nomenclature of alkene, mechanisms of dehydration of alcohols and dehydrohalogenation of alkyl halide
	Saytzeff rule, Hoffmann elimination, physical properties and relative stabilities of alkenes, mechanisms involved in hydrogenation
March	Electrophilic and free radical addition , markownikoff's rule, hydroboration - oxidation
	Oxymercuration – demercuration, ozonolysis, hydration, hydroxylation and oxidation with KMnO_4 Discussion and Problem taken Assignment 1
	Arenes and Aromaticity
	Nomenclature of benzene derivatives: Aromatic nucleus and side chain. Aromaticity : The Huckel rule, aromatic ions
	Annulenes upto 10 carbon atoms, aromatic, anti - aromatic and non – aromatic compounds
	Aromatic electrophilic substitution – general pattern of the mechanism, mechanism of nitration

	Halogenation , sulphonation and friedel – craft reaction , energy profile diagrams
	Activating and deactivating substituents and orientation Class test

April	Dienes and Alkynes
	Nomenclature and classification of dienes : isolated, conjugated and cumulated dienes, structure of butadiene
	Chemical reactions – 1,2 and 1,4 addition , Diels – alder reaction,
	Nomenclature, structure and bonding in alkynes, method of formation
	Chemical reaction of alkynes, acidity of alkyne, mechanism of electrophilic addition reaction
	Mechanism of nucleophilic addition reaction, hydroboration– oxidation of alkynes
	assignment 2
	Alkyl and aryl halides
	Nomenclature and classes of alkyl halides, method of formation, chemical reactions.
	Mechanisms and stereochemistry of nucleophilic substitution reaction of alkyl halide

	S_N2 and S_N1 reactions with energy profile diagrams
May	Mechanism of formation and reactions of aryl halides
	The addition – elimination and the elimination - addition mechanisms of nucleophilic aromatic substitution reactions
	Relative reactivities of alkyl halides vs allyl, vinyl and aryl halides
	Discussion and problems taken

LESSON PLAN (From February 2023 To May 2023)

NAME: Reetu

CLASS: B.Sc. I (Physical Chemistry) 2nd Sem

SECTION: A, C & Medical

Month

Contents

February

Kinetics

Rate of reaction, rate equation and its types, factors influencing the rate of a reaction – concentration, temperature, pressure, solvent, light, catalyst

March

Order of a reaction, integrated rate expression for zero order, first order, second and third order reactions. Half life period of a reaction. Effect of temperature on the rate of reaction – Arrhenius equation. Theories of reaction rate– Simple collision theory for unimolecular collision. Transition state theory of bimolecular reactions.

Assignment 1

April

Electrochemistry

Electrolytic conduction, factors affecting electrolytic conduction, specific conductance, molar conductance, equivalent conductance and relation among them, their variation with concentration. Arrhenius theory of ionization, Ostwald's Dilution Law. Debye-Huckel – Onsager's equation for strong electrolytes (elementary treatment only), Application of Kohlrausch's Law in calculation of conductance of weak electrolytes at infinite dilution

Assignment 2 And Class Test

May

Applications of conductivity measurements: determination of degree of dissociation, determination of K_a of acids determination of solubility product of sparingly soluble salts, conductometric titrations. Concepts of p H and p K_a , Buffer solution, Buffer action, Henderson – Hazel equation, Buffer mechanism of buffer action.

Revision of Chapters of Physical Chemistry

LESSON PLAN

February 2023 to May 2023

Govt. college, JIND

Name of the Assistant/Associate Professor: Pushpa Dhanda

Class and Section: B.Sc 1st (Non Medical) Sec-A ,Sec- C, and Medical

Subject: Inorganic Chemistry

February

Hydrogen Bonding and Van Der Waals forces

Hydrogen Bonding- Definition, Types effects of hydrogen bonding on properties of substances application.

Brief discussion of various types of Van Der Waals forces.

Metallic Bond and Semiconductors

Metallic Bond- Qualitative idea of valence bond and bond theories of metallic bond (conductors, Semiconductors, insulators).

Semiconductors- Introduction, types and applications.

March

s-Block elements

Comparative study of the elements including diagonal relationship, Anomalous behavior of Lithium and Beryllium compared to other elements in the same group, salient features of hydrides, oxides, halides, hydroxides(methods of preparation excluded), behavior of solution in liquid NH₃.

Assignment

1

Chemistry of Noble Gases

General Physical Properties, Low Chemical reactivity, chemistry of xenon, structure and bonding in fluorides, oxides and ox fluorides of xenon.
Class test

April

p-Block elements

Electronic configuration, atomic and ionic size, metallic character, melting point. Ionization energy, electron affinity, electro negativity, inert pair effect and diagonal relationship.

May

Boron family (13th group)

Diborane

Carbon Family and Nitrogen family (14th and 15th group)

Oxygen family (16th group)

Halogen family (17th group)

Assignment 2

Lesson Plan

Name of Assistant /Associate Professor: Miss. Suman Rani

Class and Sec: Bsc. III Med B and N.m Sec:A, B

Chemistry Lesson Plan: FEB to MAY 2023

CHAPTER:1 HETEROCYCLIC COMPOUNDS

February

Molecular orbital str ,Aromatic characteristics of pyrrole,furan , thiophene

Aromatic characteristics of thiophene & pyridine

- **Comparison of aromaticity of benzene , pyrrole ,furan and thiophene**

MARCH

- **Preparation of pyrrole and electrophilic substitution reaction of pyrrole**
- **Preparation of furan and electrophilic substitution reaction of furan**
- **Preparation of thiophene and electrophilic substitution reaction of thiophene**
- **Molecular orbital structure of Pyridine**
- **Preparation methods of Pyridine**
- **Electrophilic substitution reactions of pyridine**
- **Nucleophilic substitution reaction of pyridine**

- **Comparison of basicity of pyridine ,pyrrole and piperidine**

Preparation & reaction of indole , quinoline and isoquinoline

Fischer Indole synthesis and skraup synthesis ,Bischler napieralski synthesis .Mechanism of electrophilic substitution of indole , Quinoline and isoquinoline

APRIL

Chapter:2 Organic synthesis via enolates

Acidity of hydrogen, alkylation of diethylmalonate and ethylacetoacetate

- **Synthesis of ethylacetoacetate,claisen condensation keto-enol tautomerism of ethyl acetoacetate**
- **Alkylation of 1-3dithianes**
- **Acylation of enamines**

Class Test

ASSIGNMENT:1

CHAPTER:3 AMINOACIDS, PEPTIDES AND PROTEINS

- **Classification , structure and stereochemistry of aminoacods,Acid base behaviour**

- **Isoelectric point**
- **Electrophoresis**
- **Preparation and reaction of aminoacids**

- **Structure and nomenclature of peptides and protein**

- **Peptide structure determination , End group analysis , selective hydrolysis of peptides**

- **Classical peptide synthesis, Solid phase peptide synthesis**
- **Structure of peptides and proteins**

MAY

ASSIGNMENT :2

- **Denaturation and renaturation**
- **Nucleic acid introduction , ribonucleosides and ribonucleotides**

Double helical structure

CHAPTER:4 SYNTHETIC POLYMER

Addition or chain growth polymerisation

Free radical polymerisation

Ionic vinyl polymerisation

- **Ziegler natta polymerisation and vinyl polymers**

Condensation polymerisation

Polystyrenes and polyamides

Phenol formaldehyde resin

Natural and synthetic rubber

Revision

LESSON PLAN

Feb 2023 to May 2023

Govt. P.G college, JIND

Name of the Assistant/Associate Professor: Sushma Rani

Class and Section: B.Sc 2rd (Non-medical) section- A&B

Subject: Inorganic Chemistry

February

Chemistry of f-block elements

Lanthanides

Electronic structure, oxidation states and ionic radii and lanthanide contraction.

March

Chemistry of f-block elements

Lanthanides

Complex formation, occurrence and isolation, lanthanide compounds

Actinides

General features and chemistry of actinides, chemistry of separation of Np, Pu and Am from U. Comparison of properties of Lanthanides and Actinides and with transition elements

Assignment 1st

April

Theory of Qualitative and Quantitative Inorganic Analysis-I

Chemistry of analysis of various acidic radicals, Chemistry of identification of acid radicals in typical combinations, Chemistry of interference of acid radicals including their removal in the analysis of basic radicals

Assignment 2nd

Unit Test 1st

May

Theory of Qualitative and Quantitative Inorganic Analysis-II

Chemistry of analysis of various groups of basic radicals, Theory of precipitation, co-precipitation, Post- precipitation, purification of precipitates.

Revision

LESSON PLAN

Session 2023

Govt. P.G college, JIND

Name of the Assistant/Associate Professor: Seema Redhu

Class and Section: B.Sc 3rd (Medical) E

Subject: Inorganic Chemistry

Feb/March

Organometallic Chemistry

Definition, nomenclature and classification of organometallic compounds. Preparation, properties, and bonding of alkyls of Li, Al Hg and Sn, a brief account of metal-ethylenic complexes, mononuclear carbonyls and the nature of bonding in metal carbonyls.

March

Acids and Bases, HSAB Concept

Arrhenius, Bronsted- Lowry, the Lux- Flood, Solvent system and Lewis concepts of acids and bases, relative strength of acids and bases, Concept of Hard and Soft Acids and bases.

April

Bioinorganic Chemistry

Essential and trace elements in biological processes, metalloporphyrins with special reference to haemoglobin and myoglobin. Biological role of alkali and alkaline earth metal ions with special reference to Ca^{2+} . Nitrogen fixation. Test and assessment

May

Silicones and Phosphazenes

Silicones and phosphazenes as examples of inorganic polymers, nature of bonding in triphosphazenes.

Silicones and phosphazenes their preparation, properties, structures and uses.

Assignment 2nd

LESSON PLAN

February 2023 to may 2023

Name of the assistant professor : Monika

Name of college : Govt. College Jind

Class. : B.Sc. III (Med & Non-med) Sec A, B and C

Department : Chemistry

Subject : Physical Chemistry

Name of the Month	Name of topics
February	Photochemistry Interaction of radiation with matter, difference between thermal and photochemical processes, laws of photochemistry: Grotthus-Draper Law, Stark Einstein law
MARCH	Jablonski diagram depicting various processes occurring in the excited state, qualitative description of fluorescence, phosphorescence, non radiative process, quantum yield, photosensitized reaction with simple examples Phase equilibrium Statement and meaning of the terms ' phase, component, degree of freedom, thermodynamic derivation of Gibbs phase

	<p>rule, phase equilibria of one component system-water system</p> <p>Phase equilibria of two component system solid liquid equilibria, simple eutectic examples Pb-Ag system, desilverisation of lead</p> <p>Assignment 1</p>
April	<p>Introduction to Statistical mechanics</p> <p>Need of statistical thermodynamics, thermodynamic probability, Maxwell boltzman distribution statistics, Born – oppenheimer approximation, partition function and its physical significance factorization of partition function</p> <p>Assignment 2</p> <p>Solution, dilute solution and colligative properties</p> <p>Ideal and non ideal solutions, methods of expressing concentration of solutions, dilute solutions, Raoult's law colligative properties: relative lowering of vapour pressure(ii) elevation in boiling point (iii) depression in freezing point (4) osmotic pressure.</p> <p>Test</p>

May	Thermodynamic derivation of relation between amount of solute and elevation in boiling point and depression in freezing point. Application in calculating molar masses of normal, dissociated and associated solutes in solution Revision
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February 2023 to may 2023

Name of the assistant professor : Monika

Name of college : Govt. College Jind

Class. : B.Sc. III (Med & Non-med) Sec A, B and C

Department : Chemistry

Subject : Physical Chemistry

Name of the Month

Name of topics

February

Photochemistry

Interaction of radiation with matter, difference between thermal and photochemical processes, laws of photochemistry: Grotthus-Draper Law, Stark Einstein law

MARCH

Jablonski diagram depicting various processes occurring in the excited state, qualitative description of fluorescence, phosphorescence, non radiative process, quantum yield, photosensitized reaction with simple examples

Phase equilibrium

Statement and meaning of the terms ‘ phase, component, degree of freedom, thermodynamic derivation of gibbs phase rule, phase equilibria of one component system- water system

Phase equilibria of two component system solid liquid equilibria, simple eutectic examples Pb-Ag system, desilverisation of lead

Assignment 1

April

Introduction to Statistical mechanics

Need of statistical thermodynamics, thermodynamic probability, Maxwell boltzman distribution statistics, Born – oppenheimer approximation, partition function and its physical significance factorization of partition function

Assignment 2

Solution, dilute solution and colligative properties

Ideal and non ideal solutions, methods of expressing concentration of solutions, dilute solutions, Raoult’s law colligative properties: relative lowering of vapour pressure(ii) elevation in boiling point (iii) depression in freezing point (4) osmotic pressure.

Test

May

Thermodynamic derivation of relation between amount of solute and elevation in boiling point and depression in freezing point. Application in calculating molar masses of normal. Dissociated and associated solutes in solution

Revision

Name- Sandeep Kumar, Class B.Sc.-1st (2nd Sem.)

Inorganic Chemistry Section-B N.M.

March-2023

Section – A

Hydrogen Bonding and Van der Waals forces Hydrogen Bonding – Definition, types, effects of hydrogen bonding on properties of substances, application Brief discussion of various types of Van der Waals forces.

Metallic Bond and semiconductors Metallic bond – Qualitative idea of valence bond and Band theories of metallic bond (conductors, semiconductors, insulators). Semiconductors – Introduction, types and applications.

April-2023

s-Block elements Comparative study of the elements including diagonal relationship, Anomalous behaviour of Lithium and Beryllium compared to other elements in the same group, salient features of hydrides, oxides, halides, hydroxides (methods of preparation excluded), behaviour of solution in liquid NH₃.

Chemistry of Noble Gases General physical properties, low chemical reactivity, chemistry of xenon, structure and bonding in fluorides, oxides and oxyfluorides of xenon.

Section – B p-Block elements: Electronic configuration, atomic and ionic size, metallic character, melting point, ionization energy, electron affinity, electronegativity, inert pair effect and diagonal relationship.

May-2023

Boron family (13th group): Diborane: Preparation, properties and structure (as an example of electron deficient compound and multicenter bonding), Borazine chemical properties and structure, relative strength of Trihalide of Boron as Lewis acids, structure of aluminium(III) chloride.

Carbon family and Nitrogen family (14th and 15th group): Catenation, Carbides, fluoro carbons, silicates (structural aspects). Oxides: Structure of oxides of nitrogen and phosphorus, Oxyacids : Structure and relative acid strength of oxy acids of nitrogen and phosphorus, structure of white and Red phosphorus.

Oxygen family (16th group): Oxy acids of sulphur – structure and acidic strength, Hydrogen Peroxide – properties and uses.

Halogen family (17th group): Interhalogen compounds (their properties and structures), Hydra and oxy acids of chlorine – structure and comparison of acid strength, cationic nature of Iodine.

Name- Sandeep Kumar, Class B.Sc.-1st (2nd Sem.)

Physical Chemistry Section-B N.M.

Mar-2023

Section–A (22 Periods) Kinetics Rate of reaction, rate equation and its types, factors influencing the rate of a reaction – concentration, temperature, pressure, solvent, light, catalyst. Order of a reaction, integrated rate expression for zero order, first order, second and third order reactions. Half life period of a reaction.

April-2023

Effect of temperature on the rate of reaction – Arrhenius equation. Theories of reaction rate – Simple collision theory for unimolecular collision. Transition state theory of bimolecular reactions.

May-2023

Section-B Electrochemistry Electrolytic conduction, factors affecting electrolytic conduction, specific conductance, molar conductance, equivalent conductance and relation among them, their variation with concentration. Arrhenius theory of ionization, Ostwald's Dilution Law. Debye- Huckel – Onsager's equation for strong electrolytes (elementary treatment only), Application of Kohlrausch's Law in calculation of conductance of weak electrolytes at infinite dilution.

Applications of conductivity measurements: determination of degree of dissociation, determination of K_a of acids determination of solubility product of sparingly soluble salts, conductometric titrations. Concepts of pH and pKa, Buffer solution, Buffer action, Henderson – Hazel equation, Buffer mechanism of buffer action.

Name- Sandeep Kumar, Class B.Sc.-1st (2nd Sem.)

Inorganic Chemistry Section-B Medical.

Mar-2023

Section – B p-Block elements: Electronic configuration, atomic and ionic size, metallic character, melting point, ionization energy, electron affinity, electronegativity, inert pair effect and diagonal relationship.

Apr-2023

Boron family (13th group): Diborane: Preparation, properties and structure (as an example of electron deficient compound and multicenter bonding), Borazine chemical properties and structure, relative strength of Trihalide of Boron as lewis acids, structure of aluminium(III) chloride.

May-2023

Carbon family and Nitrogen family (14th and 15th group): Catenation, Carbides, fluoro carbons, silicates (structural aspects). Oxides: Structure of oxides of nitrogen and phosphorus, Oxyacids : Structure and relative acid strength of oxy acids of nitrogen and phosphorus, structure of white and Red phosphorus.

Oxygen family (16th group): Oxy acids of sulphur – structure and acidic strength, Hydrogen Peroxide – properties and uses.

Halogen family (17th group): Interhalogen compounds (their properties and structures), Hydra and oxy acids of chlorine – structure and comparison of acid strength, cationic nature of Iodine.

Name- Sandeep Kumar, Class B.Sc.-2nd (4th Sem.)

Organic Chemistry Section-A Non Medical.

Mar-2023

Infrared (IR) absorption spectroscopy Molecular vibrations, Hooke's law, selection rules, intensity and position of IR bands, measurement of IR spectrum, fingerprint region, characteristic absorptions of various functional groups and interpretation of IR spectra of simple organic compounds. Applications of IR spectroscopy in structure elucidation of simple organic compounds.

April-2023

Amines Structure and nomenclature of amines, physical properties. Separation of a mixture of primary, secondary and tertiary amines. Structural features affecting basicity of amines. Preparation of alkyl and aryl amines (reduction of nitro compounds, nitriles, reductive amination of aldehydic and ketonic compounds. Gabriel- phthalimide reaction, Hofmann bromamide reaction. Electrophilic aromatic substitution in aryl amines, reactions of amines with nitrous acid.

May-2023

Diazonium Salts Mechanism of diazotisation, structure of benzene diazonium chloride, Replacement of diazo group by H, OH, F, Cl, Br, I, NO₂ and CN groups, reduction of diazonium salts to hydrazines, coupling reaction and its synthetic application. Aldehydes and Ketones Nomenclature and structure of the carbonyl group. Synthesis of aldehydes and ketones with particular reference to the synthesis of aldehydes from acid chlorides, advantage of oxidation of alcohols with chromium trioxide (Sarett reagent) pyridinium chlorochromate (PCC) and pyridinium dichromate. Physical properties, Comparison of reactivities of aldehydes and ketones.

Mechanism of nucleophilic additions to carbonyl group with particular emphasis on benzoin, aldol, Perkin and Knoevenagel condensations. Condensation with ammonia and its derivatives. Wittig reaction. Mannich reaction. Oxidation of aldehydes, Baeyer–

Villiger oxidation of ketones, Cannizzaro reaction. MPV, Clemmensen, Wolff- Kishner, LiAlH₄ and NaBH₄ reductions.

Name- Sandeep Kumar, Class B.Sc.-2nd (4th Sem.)

Organic Chemistry Section-B Non Medical.

March-2023

Infrared (IR) absorption spectroscopy Molecular vibrations, Hooke's law, selection rules, intensity and position of IR bands, measurement of IR spectrum, fingerprint region, characteristic absorptions of various functional groups and interpretation of IR spectra

of simple organic compounds. Applications of IR spectroscopy in structure elucidation of simple organic compounds.

April-2023

Amines Structure and nomenclature of amines, physical properties. Separation of a mixture of primary, secondary and tertiary amines. Structural features affecting basicity of amines. Preparation of alkyl and aryl amines (reduction of nitro compounds, nitriles, reductive amination of aldehydic and ketonic compounds. Gabriel- phthalimide reaction, Hofmann bromamide reaction. Electrophilic aromatic substitution in aryl amines, reactions of amines with nitrous acid.

May-2023

Diazonium Salts Mechanism of diazotisation, structure of benzene diazonium chloride, Replacement of diazo group by H, OH, F, Cl, Br, I, NO₂ and CN groups, reduction of diazonium salts to hydrazines, coupling reaction and its synthetic application. Aldehydes and Ketones Nomenclature and structure of the carbonyl group. Synthesis of aldehydes and ketones with particular reference to the synthesis of aldehydes from acid chlorides, advantage of oxidation of alcohols with chromium trioxide (Sarett reagent) pyridinium chlorochromate (PCC) and pyridinium dichromate. Physical properties, Comparison of reactivities of aldehydes and ketones.

Mechanism of nucleophilic additions to carbonyl group with particular emphasis on benzoin, aldol, Perkin and Knoevenagel condensations. Condensation with ammonia and its derivatives. Wittig reaction. Mannich reaction. Oxidation of aldehydes, Baeyer–Villiger oxidation of ketones, Cannizzaro reaction. MPV, Clemmensen, Wolff- Kishner, LiAlH₄ and NaBH₄ reductions.

Sandeep kumar (extension lecturer)

B. Sc. IIIrd Year (VIth Semester) Paper-XIX (CH-305) Physical Chemistry (Theory)

March 2023

Introduction to statistical mechanics

Need for statistical thermodynamics, thermodynamic probability, Maxwell Boltzmann distribution statistics, Born oppenheimer approximation, partition function and its physical significance. Factorization of partition function.

April 2023

Photochemistry

Interaction of radiation with matter. difference between thermal and photochemical processes. Laws of photochemistry: Grotthus-Drapper law, Stark- Einstein law (law of photochemical equivalence), Jablonski diagram depicting various processes occurring in the excited state, qualitative description of fluorescence, phosphorescence, non-radiative processes (internal conversion, intersystem crossing), quantum yield, photosensitized reactions-energy transfer processes (simple examples).

May 2023

Solutions, Dilute Solutions and Colligative Properties Ideal and non-ideal solutions, methods of expressing concentrations of solutions, Dilute solutions, Raoult's law. Colligative properties: (i) relative lowering of vapour pressure (ii) Elevation in boiling point (iii) depression in freezing point (iv) osmotic pressure. Thermodynamic derivation of relation between amount of solute and elevation in boiling point and depression in freezing point. Applications in calculating molar masses of normal, dissociated and associated solutes in solution.

Phase Equilibrium

Statement and meaning of the terms - phase, component and degree of freedom, thermodynamic derivation of Gibbs phase rule, phase equilibria of one component system -Example - water system. Phase equilibria of two component systems solid-liquid equilibria, simple eutectic

Example Pb-Ag system, desilverisation of lead.

Lesson Plan

Name of Assistant /Associate Professor: Miss. Poonam

Class and Sec: Bsc. III Med and N.mSec:E

Chemistry Lesson Plan: FEB to MAY 2023

CHAPTER:1 HETEROCYCLIC COMPOUNDS

February

Molecular orbital str ,Aromatic characterstics of pyrrole,furan , thiophene

Aromatic characterstics of thiophene& pyridine

- **Comparison of aromaticity of benzene , pyrrole ,furan and thiophene**

MARCH

- **Preparation of pyrrole and electrophilic substitution reaction of pyrrole**
- **Preparation of furan and electrophilic substitution reation of furan**
- **Preparation of thiophene and electrophilic substitution reaction of thiophene**
- **Molecular orbital structure of Pyridine**
- **Preparation methods of Pyridine**
- **Electrophilic substitution reactions of pyridine**
- **Nucleophilic substitution reaction of pyridine**
- **Comparison of basicity of pyridine ,pyrrole and piperidine**

Preparation & reaction of indole , quinoline and isoquinoline

Fischer Indole synthesis and skraup synthesis ,Bischler-Napieralski synthesis .Mechanism of electrophilic substitution of indole , Quinoline and isoquinoline

APRIL

Chapter:2 Organic synthesis via enolates

Acidity of hydrogen, alkylation of diethylmalonate and ethylacetoacetate

- **Synthesis of ethylacetoacetate, Claisen condensation keto-enol**

tautomerism of ethyl acetoacetate

- **Alkylation of 1,3-dithianes**
- **Acylation of enamines**

Class Test

ASSIGNMENT:1

CHAPTER:3 AMINOACIDS, PEPTIDES AND PROTEINS

- **Classification , structure and stereochemistry of aminoacids, Acid base behaviour**

- **Isoelectric point**
- **Electrophoresis**
- **Preparation and reaction of aminoacids**

- **Structure and nomenclature of peptides and protein**

- **Peptide structure determination , End group analysis , selective hydrolysis of peptides**

- **Classical peptide synthesis, Solid phase peptide synthesis**
- **Structure of peptides and proteins**

MAY

ASSIGNMENT :2

- **Denaturation and renaturation**
- **Nucleic acid introduction , ribonucleosidesans ribonucleotides**

Double helical structure

CHAPTER:4 SYNTHETIC POLYMER

Addition or chain growth polymerisation

Free radical polymerisation

Ionic vinyl polymerisation

- **Zieglarnattapolymerisation and vinyl polymers**

Condensation polymerisation

Polysters and polyamides

Phenol formaldehyde resin

Natural and synthetic rubber

Revision

LESSON PLAN

February 2023 to may 2023

Name of the assistant professor :Poonam

Name of college : Govt. College Jind

Class. : B.Sc. II Med.

Department : Chemistry

Subject : Physical Chemistry

Name of the Month

Name of topics

February

SECOND LAW OF THERMODYNAMICS

Need for the law, different statements of law, Carnots cycle and its efficiency

MARCH

Carnotstheorm , thermodynamic scale of temperature .Concept of entropy

Entropy as a state function , entropy as a function of V and T, P and T, Entropy as a crieteria of spontaniety

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

Assignment 1

April

G as a criteria of spontaneity , its advantage over entropy change Variation of G with P , V and T

Assignment 2

ELECTROCHEMISTRY

Electrolytic and galvanic cells, reversible and irreversible cells

Calculation of thermodynamics quantitiesG,H and K

Types of reversible electrodes

Nernst equation ,derivation of EMF and single electrode potenti , Standard electrode potential, sign convention, Concentration cells with or without tranference

Test

May

Liquid junction potential and its measurement

Application of EMF in solubility product and potentiometric titrations

Numericals

Revision

LESSON PLAN

February 2023 to May 2023

Name of the assistant professor : Poonam

Name of college : Govt. College Jind

Class. : B.Sc. II medical

Department : Chemistry

Subject : Inorganic Chemistry

Name of the Month

Name of topics

February

LANTHANIDES

Electronic structure , oxidation states , magnetic properties, complex formation

MARCH

Colour, ionic radii, lanthanide contraction, occurrence , separation of lanthanides and lanthanide compounds

Chapter:2

ACTINIDES

General characteristics of actinides, Chemistry of separation of Np, Pu and Am from uranium, transuranic elements, comparison of properties of lanthanides and actinides with transition elements

Assignment 1

April

CHAPTER:3

Theory of qualitative and quantitative analysis

Chistrt of analysis of various gp of basic and acidic radicals, chemistry of identification of acid radicals in typical combination

Test

Chemistry of interference of acid radicals including their removal in analysis of basic radicals

Assignment:2

May

Common ion effect , solubility product , theory of precipitation , co prrcipitation , post precipitation , purification of precipitates

Revision

LESSON PLAN

February 2023 to May2023

Govt. P.G college, JIND

Name of the Assistant/Associate Professor: Savita Rani

Class and Section: B.Sc 3rd (6th Sem) A B C

Subject: Inorganic Chemistry

February /March

Organometallic Chemistry

Definition, nomenclature and classification of organometallic

compounds. Preparation, properties, and bounding of alkyls of Li, A1

Hg and Sn, a brief account of metal-ethylenic complexes,

mononuclear carbonyls and the nature of bonding in metal carbonyls.

March

Acids and Bases, HSAB Concept

Arrhenius, Bronsted- Lowry, the Lux- Flood, Solvent system and Lewis

concepts of acids and bases, relative strength of acids and bases,

Concept of Hard and Soft Acids and bases.

April

Bioinorganic Chemistry

Essential and trace elements in biological processes,

metalloporphyrins with special reference to haemoglobin and

myoglobin. Biological role of alkali and alkaline earth metal ions with

special reference to Ca^{2+} . Nitrogen fixation. Assignment /Test

Silicones and phosphazenes as examples of inorganic polymers,

May

nature of bonding in triphosphazenes.

Silicones and phosphazenes their preparation, properties, structures

and uses.

Assignment 2nd and Revisio

