**LESSON PLAN**

NAME: Nisha Pruthi

CLASS: B.Sc. II Non- med(InorganicChemistry) SECTION:A,B,C

|  |  |
| --- | --- |
| month | Contents |
| April | **Lanthanides**Electronic structure, |
| Oxidation states and ionic radii and lanthanide contraction |
| Complex formation, Occurrence and isolation |
| Lanthanide Compounds Discussion and Problem taken |
| May | **Actinides** |
| General Features and chemistry of actinides |
| Chemistry of separation of NP,Puand Am From U |
| Comparison of properties of lanthanides and actinides with transition elements |
| Discussion and Problem taken |

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| June | **Theory of Qualitative and Quantitative inorganic Analysis** |
| Chemistry of analysis of various groups of basic and acidic radicals.. |
| Chemistry of identification of acid radicals in typical combinations |
| Chemistry of interference of acid radicals including their removal |

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|  | in the analysis of basic radicalsClass test and assignment |
| July | **Theory of Qualitative and Quantitative inorganic Analysis** |
| Theory of precipitation Co-precipitation |
| post-precipitation, purification of precipitates. |
| Discussion and problems taken |

**Lesson Plan**

**Name of Assistant/Associate Professor: Pushpa Dhanda**

**Class and section: B.Sc 2nd  N.M. ( A+B+C)**

**Chemistry Lesson Plan: (From April 2022 to July 2022)**

|  |  |
| --- | --- |
| April | Thermodynamics Second law of thermodynamics, need for the law, different statements of the law, Carnot’s cycles and its efficiency, Carnot’s theorem, Thermodynamics scale of temperature.  |
|  | Concept of entropy – entropy as a state function, entropy as a function of V & T, entropy as a function of P & T, entropy change in physical change, entropy as a criteria of spontaneity and equilibrium. Third law of thermodynamics: |
| May | Nernst heat theorem, statement of concept of residual entropy, evaluation of absolute entropy from heat capacity data. Gibbs function (G) and Helmholtz function (A) as thermodynamic quantities, |
|  | Gas criteria for thermodynamic equilibrium and spontaneity, its advantage over entropy change. Variation of G with P, V and T.  |
| June | Electrochemistry Electrolytic and Galvanic cells – reversible & irreversible cells, conventional representation of electrochemical cells. Calculation of thermodynamic quantities of cell reaction (▲G, ▲H & K). |
|  | Types of reversible electrodes – metal- metal ion, gas electrode, metal –insoluble salt- anion and redox electrodes. Electrode reactions, Nernst equations, derivation of cell EMF and single electrode potential. |
| July | Standard Hydrogen electrode, reference electrodes, standard electrode potential, sign conventions, Concentration cells with and without transfers rence, liquid junction potential and its measurement. Applications of EMF measurement in solubility product and potentiometric titrations using glass electrode. |
|  | Numerical problems |

**NAME: Reetu**

**CLASS: B.Sc. II (Organic Chemistry)**  **SECTION: A ,B, C**

|  |  |
| --- | --- |
| **Month** | **Contents** |
| **April** | **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 |
| Discussion and problems taken |
| **May** | AminesStructure 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. |
| Discussion and problems taken |
| **June** | **Diazonium Salts**Introduction to dizonium Salts & defination |
| Mechanism of diazotisation, structure of benzene diazonium chloride |
| Replacement of diazo group by H, OH, F, Cl, Br, I, NO 2 and CN groups |
| Reduction of diazonium salts to hyrazines, coupling reaction and i ts synthetic application |
| Discussion and problems taken |
| Class test |
| **July** | Aldehydes and KetonesNomenclature and structure of the carbonyl group |
| Synthesis of aldehydes and ketones |
| Advantage of oxidation of alcohols |
| Physical properties, Comparison of reactivities of aldehydes and ketones |
| Mechanism of nucleophilic additions to carbonyl group  |
| 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. |
| Assignment |
| Discussion and problems taken |
| Revision of chapters of Organic Chemistry |

**Name of Assistant/Associate Professor: Suman Rani**

**Class and section: Physical chemistry B.Sc 2nd Med. A+B**

**Chemistry Lesson Plan: (From April 2022 to July 2022)**

|  |  |
| --- | --- |
| April | Thermodynamics Second law of thermodynamics, need for the law, different statements of the law, Carnot’s cycles and its efficiency, Carnot’s theorem, Thermodynamics scale of temperature. Sessional Test |
|  | Concept of entropy – entropy as a state function, entropy as a function of V & T, entropy as a function of P & T, entropy change in physical change, entropy as a criteria of spontaneity and equilibrium. Third law of thermodynamics: |
| May | Nernst heat theorem, statement of concept of residual entropy, evaluation of absolute entropy from heat capacity data. Gibbs function (G) and Helmholtz function (A) as thermodynamic quantities, |
|  | Gas criteria for thermodynamic equilibrium and spontaneity, its advantage over entropy change. Variation of G with P, V and T. Assignment 1st |
| June | Electrochemistry Electrolytic and Galvanic cells – reversible & irreversible cells, conventional representation of electrochemical cells. Calculation of thermodynamic quantities of cell reaction (▲G, ▲H & K).Assignment 2 |
|  | Types of reversible electrodes – metal- metal ion, gas electrode, metal –insoluble salt- anion and redox electrodes. Electrode reactions, Nernst equations, derivation of cell EMF and single electrode potential. |
| July | Standard Hydrogen electrode, reference electrodes, standard electrode potential, sign conventions, Concentration cells with and without transfers rence, liquid junction potential and its measurement. Applications of EMF measurement in solubility product and potentiometric titrations using glass electrode. |
|  | Numerical problems |

Name Suman Rani Class B.Sc. 2nd Med. A+B

Subject inorganic chemistry Session (From April 2022 to July 2022)

|  |  |
| --- | --- |
| April | Lanthanides Electronic structure, oxidation state, Ionic radii and lanthanide contraction, complex formation, occurrence and isolation ,lanthanide compounds.Class test chapter 1Sessional test chapter 1 |
| May | ActinidesGeneral features and chemistry of actinides,  chemistry of sepration Np,Pu and Am from U. comparison of properties pf lanthanides from actinides with transition elements. Assignment 1 |
| June | Theory of qualitative and quantitate analysis Chemistry of analysis of various groups of basic and acidic radicals. Chemistry of identification of acid radical in typical combinations. Assignment 2Chemistry of interference of acid radicals including their removal in the analysis of basic radicals.  |
| July |  Theory of precipitation ,co precipitation ,post precipitation, purification of precipitates, |
|  | Revision chapter 1 |
|  | Revision chapter 2 |
|  | Revision chapter 3 |
|  |  |

**Name of assistant prof. : Monika**

**Class and section: B.Sc III non med Sec- A & B**

**Chemistry Lesson Plan: (From april 2022 to July 2022)**

|  |  |  |
| --- | --- | --- |
| Month |  |  |
| April | Statiscal thermodynamics |  |
|  | Need for Statistical Thermodynamics,Thermodynamics Probability,Maxwell Boltzmann Distribution Statistics |
|  |  Born Oppenheimer Approximation,Partition Function |
|  |  Significance of Partition Function, Factorization of Partition Function |
|  |  Translational Partition Function,Vibrational Partition Function, Rotational Partition Function |
|  | Assignment 1 |
| May | Photochemistry |
|  | Interaction of radiation with matter, Difference between Thermal and Photochemical Processes |
|  | Laws Governing Absorption of Light, Some other terms commonly used in Spectroscopy |
|  |  Laws Governing Photochemical Reactions, Quantum Yield/Quantum Efficiency  |
|  | Class test |
|  | Fluorescence and Phosphorescence in terms of Excitation of Electrons(Jabolonski Diagram) Main Points of Difference Between Phosphorescence and Fluorescence,Photosensitization |
|  | Quenching of Fluorescence: Stern Volmer Equation,Photoinhibitors,Photostationary State |
|  | Chapter 3: Solutions |
|  | Mode of Expressing the Concentration of a Solution, Chemical Potential,Fugacity, Activity and Activity coefficient |
|  | Rault’s Law, Ideal and Non Ideal SolutionsThermodynamics Properties of Ideal Solution |
| June | Solution Vapour Pressure of Ideal Solution,Deviation from Ideal Behaviour, Azeotropes |
|  |  Colligative Properties, Lowering of Vapour Pressure, Thermodynamics Derivation of Relative Lowering of Vapour Pressure |
|  |  Elevation in the Boiling Point,Thermodynamics Derivation of Elevation in the boiling point |
|  | Depression in freezing point,Thermodynamics Derivation of Depression in the Freezing point |
|  | Osmotic PressureThermodynamics Derivation of osmotic PressureAbnormal Molecular Mass |
|  | Assignment 2 |
|  |  Van’t Hoff Factor, Application in calculating molar masses of normal, dissociated and associated solutes in solution |
| July | Chapter 4: Phase Equilibrium |
|  |  Explanation of Terms involved in Phase Rule, Criteria for Phase Equilibrium for Multi-Component System,Derivation of Gibb’s Phase Rule |
|  | Phase DiagramsApplication of Phase rule to one component system,Water System |
|  | Carbon Dioxide System, Phase rule, Diagrams for Two Components Systems |
|  | Types of two Components involving Solid-Liquid Equilibria, General Discussion of the Phase Diagrams for Two Component system |
|  |  Experimental Determination of the Phase Diagrams of Two Component System,Study of Two Component System(Pb-Ag System) |
|  | Pattinson’s Process for Desilverisation of Lead |
|  | Problems from Chapter 3  |
|  | Problems from Chapter 4 |

**Name of assistant prof. : Monika**

**Class and section: B.Sc III med Sec- A & B**

**Chemistry Lesson Plan: (From april 2022 to july 2022)**

|  |  |
| --- | --- |
| Month | Chapter 3: Solutions |
| April | Mode of Expressing the Concentration of a Solution, Chemical Potential,Fugacity, Activity and Activity coefficient |
|  | Rault’s Law, Ideal and Non Ideal SolutionsThermodynamics Properties of Ideal Solution |
|  |  Vapour Pressure of Ideal Solution,Deviation from Ideal Behaviour, Azeotropes |
|  |  Colligative Properties, Lowering of Vapour Pressure, Thermodynamics Derivation of Relative Lowering of Vapour Pressure |
|  | Assignment1 |
| May | Solution: Elevation in the Boiling Point,Thermodynamics Derivation of Elevation in the boiling point |
|  | Depression in freezing point,Thermodynamics Derivation of Depression in the Freezing point |
|  | Osmotic PressureThermodynamics Derivation of osmotic PressureAbnormal Molecular Mass |
|  | Class test |
|  |  Van’t Hoff Factor, Application in calculating molar masses of normal, dissociated and associated solutes in solution |
| June | Chapter 4: Phase Equilibrium |
|  |  Explanation of Terms involved in Phase Rule, Criteria for Phase Equilibrium for Multi-Component System,Derivation of Gibb’s Phase Rule |
|  | Phase DiagramsApplication of Phase rule to one component system,Water System |
|  | Assignment 2 |
|  | Carbon Dioxide System, Phase rule, Diagrams for Two Components Systems |
| July |  Phase equillibrium:Types of two Components involving Solid-Liquid Equilibria, General Discussion of the Phase Diagrams for Two Component system |
|  |  Experimental Determination of the Phase Diagrams of Two Component System,Study of Two Component System(Pb-Ag System) |
|  | Pattinson’s Process for Desilverisation of Lead |
|  | Problems from Chapter 3  |
|  | Problems from Chapter 4 |

**Name of Assistant /Associate Professor: Miss. Poonam**

**Class and Sec: Bsc. III Med. Sec –A & B , B.sc N.M Sec-A&B**

**Chemistry Lesson Plan: APRIL TO JULY 2022**

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| **APRIL**Chapter 1 organosulphur compound |
| * Nomenclature Structural feature, M.O.P
 |
| * Chemical rxn of thiols, thioether, Sulphonic acid,
 |
| * Sulphonamides & Sulphaguanidine
 |
| * Synthetic detergents ,alkyl & aryl sulphonates
 |
| Chapter 2: Heterocyclic compound |
| * Molecular orbital str ,Aromatic characterstics of pyrrole,furan
 |
| * Aromatic characterstics of thiophene & pyridine
 |
|  **Assignment :1*** M.O.P ,& Chemical Rxn with mechanism of electrophilic substitution
 |
| **May*** Mech. Of Nucleophilic substitution Reaction in Pyridine derivatives
* Comparison of basicity of pyridine piperidine & pyrrole
 |
| * Introduction of condensed 5-6 membered heterocycles
 |
|  **Class Test*** Preparation & reaction of indole
 |
| * Rxn of quinolone & isoquinoline
 |
| * Fischer Indole synthesis & skraup synthesis
 |
| * Bischler napieralski synthesis, Mech. of Electrophilic substitution of indole
 |
| * Mech. Of electrophilic substitution Rxn. Of Quinoline & Isoquinoline
 |
| **June** CHAPTER-3 Organic synthesis via enolates  |
| * Acidity of hydrogen, alkylation of diethylmalonate &Ethyl acetoacetate
 |
| * Synthesis of Ethylacetoacetate ,claisen condensation Keto-enol tautomerism of ethyl acetoacetate
 |
| * Alkylation of 1-3 dithianes
* Acylation of Enamines
* **ASSIGNMENT :2**
 |
|  CHAPTER- 4 * Classification, structure &stereochemistry of amino acids, Acid-base behavior
 |
| * Isoelectric point & electrophoresis, Prp & reaction of Amino acids
 |
| * Structure & Nomenclature of peptides & proteins,
* Peptide structure determination ,End group analysis, selective Hydrolysis of peptides
 |
| **July*** Classical peptide synthesis ,Solid phase peptide synthesis
 |
|  0 Structure of peptides &proteins  |
| * Denaturation/Renaturation
* nucleic acids introduction , constituents of nucleic acids
 |
| * Ribonucleosides , ribonucleotides ,double helical structure of D.N.A
 |
| * Problems from Chapter 2 & 3
 |
| * Revision And Practical
 |

**Govt. P.G college, JIND**

**Name of the Assistant/Associate Professor: Sushma Rani**

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

**Subject: Inorganic Chemistry**

**April**

**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.**

**Assignment 1st**

**May**

**Acids and Bases, HSAB Concept**

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

**Test**

**June**

**Bioinorganic Chemistry**

**Essential and trace elemens in biological processes, metalloporphyrins with special reference to haemoglobin and myoglobin. Biological role of alkali and alkaline earth metal ions with special reference to Ca2+. Nitrogen fixation.**

**Assignment 2nd**

**July**

 **Silicones and Phosphazenes**

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

**Silicones and phosphazenes heir preparation, properties, structures and uses.**

**LESSON PLAN**

**April 2022 to July 2022**

**Govt. P.G college, JIND**

**Name of the Assistant/Associate Professor: Sushma Rani**

**Class and Section: B.Sc 3rd (Non- Medical) Sec-A**

**Subject: Inorganic Chemistry**

**April**

**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.**

**Assignment 1st**

**May**

**Acids and Bases, HSAB Concept**

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

**Test**

**June**

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**Assignment 2nd**

**July**

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

**Silicones and phosphazenes heir preparation, properties, structures and uses.**

**LESSON PLAN**

**April 2022 to July 2022**

**Govt. P.G college, JIND**

**Name of the Assistant/Associate Professor: Sushma Rani**

**Class and Section: B.Sc 3rd (Non- Medical) Sec-B**

**Subject: Inorganic Chemistry**

**April**

**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.**

 **Assignment 1st**

**May**

**Acids and Bases, HSAB Concept**

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

 **Test**

**June**

**Bioinorganic Chemistry**

**Essential and trace elemens in biological processes, metalloporphyrins with special reference to haemoglobin and myoglobin. Biological role of alkali and alkaline earth metal ions with special reference to Ca2+. Nitrogen fixation.**

 **Assignment 2nd**

**July**

 **Silicones and Phosphazenes**

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

**Silicones and phosphazenes heir preparation, properties, structures and uses.**

**LESSON PLAN**

**NAME: Renu Devi**

**CLASS: B.Sc. I Non-Med (Organic Chemistry)**  **SECTION: A & B**

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| --- | --- |
|  Month | Contents |
| APRIL | **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 |
|  | Electrophilic and free radical addition , markownikoff’s rule, hydroboration - oxidation |
|  | Oxymercuration – demercuration, ozonolysis, hydration, hydroxylation and oxidation with KMnO4 Discussion and Problem taken Assignment 1 |
| May | **Arenes and Aromaticity** |
|  | Nomenclature of benzene derivatives: Aromaric 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 orientationClass test |

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| June |  **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 |
| July | **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 |
|  | SN2 and SN1 reactions with energy profile diagrams |
|  | 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 |

**Govt. P.G college, JIND**

**Name of the Assistant/Associate Professor: Monika Jaglan**

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

**Subject: Inorganic Chemistry**

**April**

**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**

**May**

**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**

**June**

**Hydrogen Bonding and Van Der Walls 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.**

 **Assignment 2**

**July**

**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.**

**Boron family (13th group)**

**Diborane**

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

**Oxygen family (16th group)**

**Halogen family (17th group)**

**Lesson Plan**

**Name of Assistant/Associate Professor: Seema Redhu**

**Class and section: B.Sc I N.Med. Sec B and C**

**Chemistry Lesson Plan: (From April 2022 to July 2022)**

|  |  |
| --- | --- |
| April | Chapter 1 KINETICS |
|  | Rate of reaction, rate equation |
|  | Factor effecting the rate of reaction, order of reaction |
|  | Integrated rate equation of zero and first order reaction  |
|  | Integrated rate equation of second and third order reaction |
|  | Method of determination of order of reaction  |
|  | Chapter 2 Kinetics |
|  | Arrhenius equation and effect of temperature |
| May | Simple collision theory of reaction rate |
|  | Bimolecular collision theory of reaction rate |
|  | Transition state theory of bimolecular reaction |
|  | Problem of chapter of 1 & 2 |
|  | Assignment I |
|   | Test of chapter 1 |
|  | Chapter 3 Electrochemistry 1 |
|  | Electrolytic conduction and factor effecting |
|  | Specific conductance, equivalent conductance, molar conductance |
|  | Relation between different conductance  |
|  | Effect of concentration on various conductance |
|  | Numerical related to previous topic |
| June | Arrhenius theory of ionization, Ostwald dilution law |
|  | Debye-Hucke-Onsager equation, transpot number |
|  | Definition and determination by Hittoirfs method |
|  | Problems From Chapter 3 |
|  |  CHAPTER-4 Electrochemistry 2 |
|  | Kohlrausch law and its numerical |
|  | Calculation of molar ionic conductance and effect of viscosity, temperature* And pressure on it
 |
|  | Application of Kohlrausch law in calculation of weak electrochemistry at infinite dilution |
|  | Application of conductivity measurement* Determination of degree of dissociation
 |
| July | Determination of pH, Ka and pKa |
|  | Determination of solubility product and numerical based on it |
|  | Conductometric titration |
|  | Henderson-Hazelbalch equation |
|  | Buffer solution and buffer action* Mechanism of buffer action
 |
|  | Problems from Chapter 3 |
|  | Assignment II |
|  | Revision |

**Name of Extension Lecturer: Sandeep**

**Class and section: B.Sc I Non-Med Sec- A**

**Chemistry Lesson Plan: (From April 2022 to July 2022)**

|  |  |
| --- | --- |
| April | Chapter 1 KINETICS |
|  | Rate of reaction, rate equation |
|  | Factor effecting the rate of reaction, order of reaction |
|  | Integrated rate equation of zero and first order reaction  |
|  | Integrated rate equation of second and third order reaction |
|  | Method of determination of order of reaction  |
|  | Chapter 2 Kinetics |
|  | Arrhenius equation and effect of temperature |
| May | Simple collision theory of reaction rate |
|  | Bimolecular collision theory of reaction rate |
|  | Transition state theory of bimolecular reaction |
|  | Problem of chapter of 1 & 2 |
|  | Assignment I |
|  | Test of chapter 1 |
|  | Chapter 3 Electrochemistry 1 |
|  | Electrolytic conduction and factor effecting |
|  | Specific conductance, equivalent conductance, molar conductance |
|  | Relation between different conductance  |
|  | Effect of concentration on various conductance |
| June | Numerical related to previous topic |
|  | Arrhenius theory of ionization, Ostwald dilution law |
|  | Debye-Hucke-Onsager equation, transpot number |
|  | Definition and determination by Hittoirfs method |
|  | Problems From Chapter 3 |
|  |  CHAPTER-4 Electrochemistry 2 |
|  | Kohlrausch law and its numerical |
|  | Calculation of molar ionic conductance and effect of viscosity, temperature* And pressure on it
 |
|  | Application of Kohlrausch law in calculation of weak electrochemistry at infinite dilution |
|  | Application of conductivity measurement* Determination of degree of dissociation
 |
| July | Determination of pH, Ka and pKa |
|  | Determination of solubility product and numerical based on it |
|  | Conductometric titration |
|  | Henderson-Hazelbalch equation |
|  | Buffer solution and buffer action* Mechanism of buffer action
 |
|  | Problems from Chapter 3 |
|  | Assignment II |
|  | Revision |

**Name of Extension Lecturer: Sandeep**

**Class and section: B.Sc I Non-Med Sec- A**

**Chemistry Lesson Plan: (From April 2022 to July 2022)**

|  |  |
| --- | --- |
| April | Chapter 1 KINETICS |
|  | Rate of reaction, rate equation |
|  | Factor effecting the rate of reaction, order of reaction |
|  | Integrated rate equation of zero and first order reaction  |
|  | Integrated rate equation of second and third order reaction |
|  | Method of determination of order of reaction  |
|  | Chapter 2 Kinetics |
|  | Arrhenius equation and effect of temperature |
| May | Simple collision theory of reaction rate |
|  | Bimolecular collision theory of reaction rate |
|  | Transition state theory of bimolecular reaction |
|  | Problem of chapter of 1 & 2 |
|  | Assignment I |
|  | Test of chapter 1 |
|  | Chapter 3 Electrochemistry 1 |
|  | Electrolytic conduction and factor effecting |
|  | Specific conductance, equivalent conductance, molar conductance |
|  | Relation between different conductance  |
|  | Effect of concentration on various conductance |
| June | Numerical related to previous topic |
|  | Arrhenius theory of ionization, Ostwald dilution law |
|  | Debye-Hucke-Onsager equation, transpot number |
|  | Definition and determination by Hittoirfs method |
|  | Problems From Chapter 3 |
|  |  CHAPTER-4 Electrochemistry 2 |
|  | Kohlrausch law and its numerical |
|  | Calculation of molar ionic conductance and effect of viscosity, temperature* And pressure on it
 |
|  | Application of Kohlrausch law in calculation of weak electrochemistry at infinite dilution |
|  | Application of conductivity measurement* Determination of degree of dissociation
 |
| July | Determination of pH, Ka and pKa |
|  | Determination of solubility product and numerical based on it |
|  | Conductometric titration |
|  | Henderson-Hazelbalch equation |
|  | Buffer solution and buffer action* Mechanism of buffer action
 |
|  | Problems from Chapter 3 |
|  | Assignment II |
|  | Revision |