Lesson Plan

Name of Assistasnt/Associate Professor: Arun Soni

Class &Section: B. Sc III, N.M. & Med., (Sem -6th)

Inorganic Chemistry : (From FEB 2023 to May 2023)

Chapter 1 Organometallic Chemistry	**Dates**
1.1 Definition 1.2 Nomenclature and classification of Organo metallic compounds	Feb , Week3rd
1.3 Preparation , properties and bonding of alkyls of lithium	Feb , Week 3rd
1.4 Preparation , properties and bonding of alkyls of Aluminium	Feb , Week 4th
1.5 Preparation, properties and bonding of alkyls of Mercury	Feb , Week 4th
1.6 Preparation, properties and bonding of alkyls of Sn 1.7 Nature of bonding in Metal Carbonyls	March, Week Ist
1.8 A brief account of metal Ethylenic complexes 1.9 Mononuclear Carbonyls	March, Week Ist
Chapter 2 Acid & Bases , HSAB Concept	
2.1 Arrhenius concept of Acid & Bases 2.2 Advantages & Limitations of Arrhenius concept	March , Week 2nd
2.3 Bronsted Lowry concept of Acid and Bases 2.4 Lux – flood concept of Acid and Bases	March , Week 2nd
2.5 Solvent system concept of Acid and Bases 2.6 Lewis system concept of Acid and Bases	March, Week 3rd
2.7 Relative strength of Acid and Bases 2.8 Concept of Hard and soft Acids and Bases	March, Week 3rd
Problems from chapter 1	Marchl, Week 4th
Problems from chapter 2 and test Problems from chapter 2	April,Week Ist
Test of chapter 2	April,Week Ist
Week 9 Chapter 3 Bio Inorganic Chemistry	April,Week 2nd
3.1 Essential and Trace elements in biological processes 3.2 Metallopophyrins with special reference to haemoglobin and myoglobin	April, Week 2nd
3.5 Biological role of alkali & alkalis earth metals Ions	April, Week 3rd

with special reference to Ca2+	
3.6 Nitrogen Fixation Metalloproteins	April, Week 4th
,Problems of Chapter – 3	April Week 4th
Assignment I	May, Week Ist
Chapter -4Silicons & Phosphazenes	
4.1 Silicons as an examble of Inorganic polymers	May, Week Ist
4.2Silicons fluids & oils , siliconselastoma	May , Week 2nd
4.3 Silicon Resins , Polysiloxane copolymers	May, Week 2nd
4.4 Introduction to Phosphazene0,s method of preparation of phosphazenes	May, Week 3rd
4.5 Structure and bonding in Phosphazenes	May , Week 3rd
4.6 Bonding in Triphosphazenes 4.7 Uses of Phosphazenes	May , Week 3rd
Assignment – II	May , Week 3rd

Lesson Plan

Name of Assistant/Associate Professor: Seema kashyap

Class and section: B.Sc III N.M & Med. . (Sem -6th))

Physical Chemistry -(From FEB 2023 to May 2023)

Chapter 1 Photochemistry	**Dates**
○ Interaction of radiation with matter, difference between thermal and	Feb , Week3rd
○ photochemical processes. Laws of photochemistry:	Feb , Week 3rd
○ Grotthus-Drapper law, StarkEinstein law (law of photochemical equivalence),	Feb , Week 4th
○ Jablonski diagram depiciting various processes occurring in the excited state,	Feb , Week 4th
○ qualitative description of fluorescence,	March, Week Ist
○ phosphorescence, quantum yield,	March, Week Ist
○ phosphorescence, quantum yield,	
○ non-radiative processes (internal conversion, intersystem crossing),	March , Week 2nd
○ photosensitized reactions-energy transfer processes (simple examples)	March , Week 2nd
Chapter 2 Solutions, Dilute Solutions and Colligative Properties	
○ Ideal and non-ideal solutions, methods of	March, Week 3rd
○ expressing concentrations of solutions,	March, Week 3rd
○ Dilute solutions, Raoult's law.	Marchl, Week 4th
○ Colligative properties: (i) relative lowering of vapour pressure (ii) Elevation in boiling point	April,Week Ist
○ (iii)) depression in freezing point (iv) osmotic pressure.	April,Week Ist
○ Thermodynamic derivation of relation between amount of solute and elevation in boiling point and depression in freezing point..	April,Week 2nd
○ Applications in calculating molar masses of normal, dissociated and associated solutes in solution.	April, Week 2nd
Chapter 3 Phase Equillibrium	
○ Statement and meaning of the terms – phase,	April, Week 3rd
○ component and degree of freedom,	April, Week 4th
○ thermodynamic derivation of Gibbs phase rule,	April Week 4th
○ phase equilibria of one component system – Example – water system	May, Week Ist
○ Phase equilibria of two component systems solid-liquid equilibria,	
○ simple eutectic Example Pb-Ag system,	May, Week Ist

○ desilverisation of lead.	May , Week 2nd
○ Revision and Practical	May, Week 2nd
○ Revision and Practical	May, Week 3rd
○	
Chapter 3: Introduction to statistical mechanics	
○ Need for statistical thermodynamics,	May , Week 3rd
○ thermodynamic probability, Maxwell Boltzmann distribution statistics, Born oppenheimer approximation,	May , Week 3rd
○ partition function and its physical significance. Factorization of partition function.	May , Week 3rd
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Lesson Plan

Name of Assistant/Associate Professor:

Class and section: B.Sc III N.M & Med. (Sem -6th)

Organic Chemistry : Week (From FEB 2023 to May 2023)

Chapter 1 Organosulphur Compound	**Dates**
○ Nomenclature Structural feature, M.O.P	Feb , Week3rd
○ Chemical rxn of thiols, thioether, sulphonic acid,	Feb , Week 3rd
○ Sulphonamides &sulphaguanidine	Feb , Week 4th
○ Synthetic detergents ,alkyl & aryl sulphonates	Feb , Week 4th
Chapter 2: Heterocyclic compound	
○ Molecular orbital str ,Aromatic characterstics of pyrrole,furan	March, Week Ist
○ Aromatic characterstics of thiophene & pyridine	March, Week Ist
○ M.O.P ,& Chemical Rxn with mechanism of electrophilic substitution	
○ Mech. Of Nucleophilic substitution Reaction in Pyridine derivatives ○ Comparison of basicity of pyridine piperidine & pyrrole	March , Week 2nd
○ Introduction of condensed 5-6 membered heterocycles	March , Week 2nd
○ Preparation & reaction of indole	March, Week 3rd
○ Rxn of quinolone & isoquinoline	March, Week 3rd
○ Fischer Indole synthesis & skraup synthesis	Marchl, Week 4th
○ Bischler napieralski synthesis, Mech. of Electrophilic substitution of indole	April,Week Ist
○ Mech. Of electrophilic substitution Rxn. Of Quinoline & Isoquinoline	April,Week Ist
CHAPTER-3 Organic synthesis via enolates	
○ Acidity of hydrogen, alkylation of diethylmalonate &Ethyl acetoacetate	April,Week 2nd
○ Synthesis of Ethylacetoacetate,claisen condensation Keto-enol tautomerism of ethyl acetoacetate	April, Week 2nd
○ Alkylation of 1-3 dithianes ○ Acylation of Enamines	April, Week 3rd
CHAPTER-4 Amino Acids,proteins & Nucleic Acids	
○ Classification,structure &stereochemistry of amino acids, Acid-base behavior	April, Week 4th
○ Isoelectric point & electrophoresis, Prp & reaction	April Week 4th

of Amino acids	
○ Structure & Nomenclature of peptides & proteins,	May, Week Ist
○ Peptide structure determination ,End group analysis, selective Hydrolysis of peptides	May, Week Ist
○ Classical peptide synthesis ,Solid phase peptide synthesis	May , Week 2nd
○ Structure of peptides & proteins , levels of proteins structure	May, Week 2nd
○ Problem of chapter heterocyclic compounds	May, Week 3rd
○ Test of Chapter 2	
○ Denaturation/Renaturation	
○ , nucleic acids introduction , constituents of nucleic acids	May , Week 3rd
○ Ribonucleosides , ribonucleotides ,double helical structure of D.N.A	May , Week 3rd
○ Revision And Practical	May , Week 3rd