ANNUAL ACADEMIC PLAN 2022-23

CHEMISTRY **II YEAR**

Month & No. of working days/No.of periods	**Chapter and Topics to be covered /Assignments /Unit Tests /Examinations / EAMCET classes to be conducted**	**No. of periods** allotted **for each topic**
June 14	Syllabus dictation and discussion of IPE question paper – weightage of marks to each chapter	**01**
	1. SOLID STATE	
	1.1 General Characteristics of Solid State	
	1.2 Amorphous and Crystalline Solids	
	1.3 Classification of Crystalline Solids	
	1.4 Probing the structure of solids: X-ray crystallography	
	1.5 Crystal Lattices and Unit Cells	**13**
	1.6 Number of Atoms in a Unit Cell	
	1.7 Close Packed Structures	
	1.8 Packing Efficiency	
	1.9 Calculations Involving Unit Cell Dimensions	
	1.10 Imperfections in Solids	
	1.11 Electrical Properties	
	1.12 Magnetic Properties	
July 24	**2. SOLUTIONS**	
	2.1 Types of Solutions	
	2.2 Expressing Concentration of Solutions	
	2.3 Solubility	
	2.4 Vapour Pressure of Liquid Solutions	
	2.5 Ideal and Non-ideal Solutions	**15**
	2.6 Colligative Properties and Determination of Molar Mass	
	2.7 Abnormal Molar Masses	
	3. ELECTROCHEMISTRY AND CHEMICAL KINETICS	
	3.1 Electrochemical Cells	
	3.2 Galvanic Cells	**08**
	3.3 Nernst Equation	
	3.4 Conductance of Electrolytic Solutions	
	3.5 Electrolytic Cells and Electrolysis	
	ASSIGNMENT-I	**01**
	PRACTICALS : A.Surface Chemistry	
	(a) Preparation of one lyophilic and onelyophobsol	
	(b) Study of the role of emulsifying agents in	

	stabilizing the emulsions of different oils	
August 22	3.6 Batteries 3.7 Fuel Cells 3.8 Corrosion **CHEMICAL KINETICS** 3.9 Rate of a Chemical Reaction 3.10 Factors Influencing Rate of a Reaction 3.11 Integrated Rate Equations 3.12 Pseudo First Order Reaction 3.13 Temperature Dependence of the Rate of a Reaction 3.14 Collision Theory of Chemical Reaction Rates **4. SURFACE CHEMISTRY** 4.1 Adsorption 4.2 Catalysis 4.3 Colloids 4.4 Classification of Colloids 4.5 Emulsions 4.6 Colloids Around Us **ASSIGNMENT-II** **UNIT TEST-I** **EAMCET** **PRACTICALS: B.** Chemical Kinetics **C.** Solutions	**05** **06** **08** **01** **01** **01**
September 25	**5. GENERAL PRINCIPLES OF METALLURGY** 5.1 Occurance of Metals 5.2 Concentration of Ores 5.3 Extraction of Crude Metal from Concentrated Ore 5.4 Thermodynamic Principles of Metallurgy 5.5 Electrochemical Principles of Metallurgy 5.6 Oxidation and Reduction 5.7 Refining of Crude Metal 5.8 Uses of Aluminium, Copper, Zinc and Iron **6. p-BLOCK ELEMENTS GROUP-15 ELEMENTS** 6.1 Introduction 6.2 Dinitrogen 6.3 Ammonia 6.4 Oxides of nitrogen 6.5 Nitric acid 6.6 Phosphorous-allotropic forms 6.7 Phosphine 6.8 Phosphorous halides	**06** **06**

	6.9 Oxoacids of phosphorous **GROUP-16 ELEMENTS** 6.10 Introduction 6.11 Dioxygen 6.12 Simple Oxides 6.13 Ozone 6.14 Sulphur-Allotropic forms 6.15 Sulphur dioxide 6.16 Oxoacids of Sulphur 6.17 Sulphuric Acid **GROUP-17 ELEMENTS** 6.18 Introduction 6.19 Chlorine 6.20 Hydrogen Chloride 6.21 Oxoacids of Halogens 6.22 Interhalogen Compounds **GROUP-18 ELEMENTS** 6.23 Introduction- Occurance, Electronic configuration Ionisation Enthalpy,Atomic radii, Electron Gain Enthalpy Physical and Chemical properties **ASSIGNMENT-III** **UNIT TEST-II** **PRACTICALS :** **D. Electrochemistry E. Chromatography** **F. Preparation of Inorganic Compounds**	**04** **04** **03** **01** **01**
October 19	**7. d AND f BLOCK ELEMENTS & COORDINATION COMPOUNDS** 7.1 Position in the Periodic Table 7.2 Electronic Configuration 7.3 General Properties of Transition Elements (d-Block) 7.4 Some Important Compounds of Transition Elements 7.5 Inner Transition Elements(f-Block) 7.6 Actinoids 7.7 Some Applications of d and f Block Elements 7.8 Werner's Theory of Coordination Compounds 7.9 Definitions of Some Terms used in Coordination Compounds 7.10 Nomenclature of Coordination Compounds 7.11 Isomerism in Coordination Compounds 7.12 Bonding in Coordination Compounds 7.13 Bonding in Metal Carbonyls 7.14 Stability of Coordination Compounds 7.15 Importance and Applications of Coordination Compounds	**12**

	8. POLYMERS 8.1 Classification of Polymers 8.2 Types of Polymerization Reactions 8.3 Molecular Mass of Polymers 8.4 Biodegradable Polymers 8.5 Polymers of Commercial Importance **UNIT TEST-III** **EAMCET** **PRACTICALS : G.** Preparation of Organic Compounds **MID TERM HOLIDAYS** **FROM 02-10-2022 TO 09-10-2022**	**05** **01** **01**
November 24	**9. BIOMOLECULES** 9.1 Carbohydrates 9.2 Proteins 9.3 Enzymes 9.4 Vitamins 9.5. Nucleic acids 9.6 Hormones **10. CHEMISTRY IN EVERYDAY LIFE** 10.1 Drugs and their Classification 10.2 Drug-Target Interaction 10.3 Therapeutic Action of Different Classes of Drugs 10.4 Chemicals in Food 10.5 Cleansing Agents **ASSIGNMENT-IV** **EAMCET** **HALF YEARLY EXAMINATIONS** **FROM 21-11-2022 TO 26-11-2022** **PRACTICALS :** **H.** Tests for the functional groups present in organic compounds **I.** Characteristic tests of carbohydrates, fats and proteins	**09** **07** **01** **01** **06**
December 25	**11. HALO ALKANES AND HALOARENES** 11.1 Classification 11.2 Nature of C-X bond 11.3 Methods of Preparation 11.4 Physical Properties	**10**

	11.5 Chemical Reactions 11.6 Polyhalogen Compounds **12. ORGANIC COMPOUNDS CONTAINING C, H AND O (Alcohols, Phenols, Ethers, Aldehyd** **Alcohols, Phenols, Ethers** 12.1 Classification -Alcohols, Phenols and Ethers 12.2 Nomenclature- Alcohols, Phenols and Ethers 12.3 Structures of Hydroxy and Ether Functional Groups 12.4 Alcohols and Phenols 12.5 Physical Propertics 12.6 Chemical Reactions 12.7 Some Commercially Important Alcohols 12.8 Ethers **Aldehydes and Ketones** 12.9 Nomenclature and Structure of Carbonyl Group 12.10 Preparation of Aldehydes and ketones. 12.11 Physical Properties 12.12 Chemical Reactions 12.13 Uses of Aldehydes and Ketones **Carboxylic Acids** 12.14 Nomenclature and Structure of Carboxyl Group 12.15 Methods of Preparation of Carboxylic Acids 12.16 Physical Properties 12.17 Chemical Reactions 12.18 Uses of Carboxylic Acids **ASSIGNMENT-V** **UNIT TEST-IV** **EAMCET** **PRACTICALS : J.** Determination of concentration/molarity of $KMnO_4$ solution by titrating it against a standard solution of: **(i)** Oxalic acid, **(ii)** Ferrous ammonium sulphate **PRACTICALS : K.** Qualitative analysis Determination of one cation and one anion in a given salt containing anions and cations studied in I year (Salts : 1 to 6)	**12** **01** **01** **01**

January 23	**13. ORGANIC COMPOUNDS CONTAINING NITROGEN** **Amines** 13.1 Structure of Amines 13.2 Classification 13.3 Nomenclature 13.4 Preparation of Amines 13.5 Physical Properties 13.6 Chemical Reactions **Diazonium salts** 13.7 Methods of Preparation of Diazonium Salts 13.8 Physical Properties 13.9 Chemical Reactions 13.10 Importance of Diazonium Salts in Synthesis of Aromatic Compounds **Cyanides and Isocyanides** 13.11 Structure of cyanides and isocyanides 13.12 Preparation **ASSIGNMENT-VI** **EAMCET** **REVISION** **SANKRANTHI HOLIDAYS** **FROM 13-01-2023 TO 15-01-2023** **PRACTICALS : K.** Qualitative analysis Determination of one cation and one anion in a given salt containing anions and cationsstudied in I year (Salts : 7to12)	**06** **01** **01**
February 22	**PROJECT** **REVISION** **Model Practical Examination** **PRE-FINAL EXAMINATIONS** **FROM 06-02-2023 TO 13-02-2023** **I.P.E. PRACTICALS 2023** **(20-02-2023 TO 06-03-2023)**	
March 23	**REVISION** **I.P.E. THEORY EXAMINATIONS** **FROM 15-03-2023 TO 04-04-2023** **LAST WORKING DAY: 31.03.2023**	

	SUMMER VACATION **FROM 01-04-2023 TO 31-05-2023** **ADVANCED SUPPLIMENTARY EXAMINATIONS** **(IPASE)** **Last week of May 2023** **Re-Opening of Colleges : 01-06-2023**	
	Total	**161 Periods**

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