

## CHEMISTRY 360 ANALYSIS

CHAPTER NAME	24th JAN S-01	24th JAN S-02	25JANUARY Shift-01	25 JANUARY Shift-02	29 JANUARY Shift-01	29 JANUARY Shift-02	30 January s-01	30 Jan s-02	31st January Shift-01	31st January shift-02	1 Feb S-01	1-Feb S-02	
1. SOME BASIC CONCEPTS IN CHEMISTRY	1. Concentration term 2. %Composition 3. Stoichiometry	1. Concentration terms	1.% Composition 2. Stoichiometry	1. Concentration term		1. Empirical & Molecular formula	1. Concentration Term	1. Stoichiometry 2. Concentration term	1.%Composition 2. Stoichiometry	1. Empirical & Molecular Formula 2. Stoichiometry	1. Concentration term	1. Concentration Term	
2. STATES OF MATTER		1. Andrew's isotherm		1. Liquid Properties	1. Real Gas		1. Partial pressure		1. Dalton Law of Partial Pressure		1. Eudiometry and Critical Constant		
3. ATOMIC STRUCTURE	1. Electronic Configuration and Magnetic Moment 2. Bohr's Atomic Structure	1. Electronic Configuration 2. Block-body Radiation.	1. Bohr's Atomic Model 2. Electronic Configuration (Magnetic Moment)	1. Structure of Orbital	1. Hydrogen Spectrum	1. Bohr's Atomic Model	1. Quantum Theory 1. Solubility order. 2. V.S.E.P.R (2 Question) 3. No. and types of Bond (VBT).	1. Schrodinger Equation 1. Bond dissociation Energy order 2. Molecular Force of Attraction.	1. Hydrogen Spectrum	1. Quantum No.	1. Discovery of Electron	1. Isoelectronic Species	
4. CHEMICAL BONDING AND MOLECULAR STRUCTURE	1. Fajan's Rule	1. MOT 2. Structure	1. Structure	1. Dipole Moment	1. B.D.E (Bond dissociation energy) 2. M.O.T 3. Odd electron Species	1. M.O.T	1. Relationship between Gibb's free Energy and equilibrium constant	1. Mixed Problem	1. Work Done (Isothermal)	1. Work done (Adiabatic)	1. Thermochemistry (Enthorpy of Reaction)	1. Resonance 1. Thermochemistry ( $\Delta H$ reaction)	1. Bond Enthalpy 2. Bond Length
5. CHEMICAL THERMODYNAMICS	1. Gibb's free Energy	1. Work		1. Thermochemistry	1. Relationship between Gibb's free Energy and equilibrium constant	1. Mixed Problem	1. Work Done (Isothermal)	1. Work done (Adiabatic)	1. Thermochemistry	1. Thermochemistry (Enthorpy of Reaction)	1. Thermochemistry ( $\Delta H$ reaction)	1. Bomb Calorimeter	
6. SOLUTIONS	1. Colligative Property	1. Raoult's Law	1. Colligative Property	1. Colligative Property		1. Colligative Property	1. Colligative Property	1. Colligative Property	1. Colligative Property	1. Colligative Properties	1. Colligative Properties	1. Colligative Properties	
7. EQUILIBRIUM	1. Ionic Equilibrium (Buffer Solution)	1. Ionic Equilibrium (Buffer Solution)	1. Ionic Equilibrium (i) Buffer Solution	1. Ionic Equilibrium (i) pH Calculation	1. Calculation of PKa. 2. Calculation of pH. 3. Solubility Product. 4. Equilibrium Concentration	1. Indicators 2. Equilibrium Constant	1. Ionic Equilibrium (pH Calculation of Acid's Mixture)	1. Le-Chatelier Principle	1. Relationship between "Kp" and "Kc"	1. Ionic Equilibrium (Titration and indicator) 2. Solubility product	1. Equilibrium Constant	1. Le-chatelier's principle	
8. REDOX REACTIONS	1. Redox Reaction 2. Chemical properties	1. Redox Reaction	(i) Equivalent Concept	1. Redox Reaction	1. Electrode Potential	1. Equivalent Concept	1. Balancing of Redox Reaction		1. Oxidising and Reducing Agent 2. Oxidation Number		1. Oxidation State and Oxidation Number		
9. ELECTROCHEMISTRY	1. Nernst Equation	Conductometric titration	1. Nernst Equation	1. Nernst Equation	1. Doby - Onsagar Equation	1. Electrode Potential	1. Nernst Equation	1. Nernst Equation	1. Electrolysis	1. Molar Conductivity	1. Electrode Potential	1. Kohlrausch Law	
10. CHEMICAL KINETICS	1. Arrhenius Equation	1. First Order (half-life period) Reaction	1. First order Reaction	1. First Order Reaction	1. Rate Vs time Curve	1. Rate Constant	1. First-Order Reaction	1. First-Order Reaction	1. Arrhenius Equation	1. First Order Reaction	1. first Order Reaction (Nuclear Chemistry)	1. Zero-Order Reaction 2. Properties of KOH	
11. SURFACE CHEMISTRY	1. Colloidal System	1. Physisorption	1. Enzyme Catalysis	1. Adsorption	1. Coagulation Power	1. Retardation Factor		1. Freundlich Adsorption isotherm		1. Physisorption and Chemisorption		1. Freundlich Adsorption Isotherm	
12. CLASSIFICATION OF ELEMENTS AND PERIODICITY IN PROPERTIES			1. Electron gain Enthalpy	1. Reducing Nature Order		1. Ionization Enthalpy 2. Acidic Nature	1. Position of Elements in Periodic Table		1. Acidic and Basic nature of oxides & hydroxide. 2. Atomic & Ionic Size	1. Order of Lewis Acid		1. Hydration Enthalpy 2. Electron gain Enthalpy	
13. GENERAL PRINCIPLES AND PROCESSES OF ISOLATION OF METALS	1. Mixed Topic Problem	1. Extraction of Ag.	1. Extraction of Copper		1. Mond's Process	1. Name of Ore	1. Extraction of Copper	1. Extraction of Aluminium	1. Concentration and Purification of Ore	1. Purification Method	1. Ellingham Diagram	1. Extraction of Copper	
14. HYDROGEN	1. Water		1. H <sub>2</sub> O <sub>2</sub> (Properties & it's strength)		1. Uses of Hydrogen			1. Hydride Compound		1. H <sub>2</sub> O <sub>2</sub> (properties & uses)	1. Uses and Properties of Hydrogen	1. Heavy Water (D <sub>2</sub> O)	
15. SOLID STATE	1. Defect					1. No. of Void.				1. Non-Stoichiometric Defect	1. Defects	1. Densities of Solid	
16. S-BLOCK ELEMENTS (ALKALI AND ALKALINE EARTH METALS)	1. s-block element Uses.	1. Physical properties. 2. Physical properties	1. Flame test 2. S-block important N.C.E.R.T Reaction	1. Some Important Reaction 2. Physical properties of s-block Element		1. S-block Nitrate decomposition		1. Decomposition of Nitrate 2. Solubility of chlorides of group-I and group-II.		1. Uses of Alkaline Earth metal. 2. alkali Metal (physical & chemical properties)	1. Properties of Alkaline Earth Metal 2. Important Compound of "Na" and "Ca"	1. Properties of "Ca" and it's Compound. 2. Properties of KOH	
17. p-BLOCK ELEMENTS			1. Group - 15 (P4 reaction)	1. Gr-14 (Oxides of Carbon)	1. Ostwald Method		1. Gr-14 (Si and it's Compound)	1. Nessler's Reagent	1. Gr-17 (Chemical Properties)	1. Gr-13 (Borax Bead Test)	1. Gr-17 (Chemical Properties)	1. Detection of Ammonia (Nessler's Reagent)	
18. d- and f-BLOCK ELEMENTS		1. Oxidizing Agent Based Question.				1. Physical Properties (Oxidation Nature) 2. Colour of important Solution.	1. K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub>	1. KMnO <sub>4</sub> (Reaction)	1. Electronic Configuration	1. Electronic Configuration 2. Physical Properties (Ionization Energy)	1. "Mn" Compound Structure		
19. CO-ORDINATION COMPOUNDS	1. Werner's Theory 2. C.F.T (Crystal field Theory)	1. C.F.T V.B.T	2. 1. Magnetic Nature of Complex compound	1. Colour of Compound 2. Werner's Theory	1. Optical Isomerism	1. Magnetic Moment 2. Denticity 3. Werner's Theory	1. Ligand field Strength	1. V.B.T (Structure) 2. V.B.T (hybridisation)	1. V.B.T (Structure)	1. C.F.S.E	1. Double Salt 2. C.F.T (Crystal Field Theory)	1. Isomerism. 2. Magnetic Moment (C.F.T)	
20. ENVIRONMENTAL CHEMISTRY	1. Global Warming. (Freons)	1. Miscellaneous Problem	1. Photochemical Smog	1. Ozone Depletion	1. Smog	1. B.O.D	1. Smog	1. B.O.D (Biochemical Oxygen demand)		1. Rain Water	1. Smog	1. Global Warming	
21. PURIFICATION AND CHARACTERISATION OF ORGANIC COMPOUNDS								1. Separation Techniques for different compounds	1. Separation techniques on the basis of polarity of Compound	1. Dumas Method	1. Identification of Organic compound and molecular formula on the basis of given informations.		
22. SOME BASIC PRINCIPLES OF ORGANIC CHEMISTRY	1. Stability of Resonating Structure.	1. Acidic Strength comparison	1. Basicity of Amines	1. Basicity of Amines 2. Concept of Structural Isomers 3. I.U.P.A.C nomenclature	1. pka order of Nitrobenzene derivative & and Phenol derivative.		1. Acidic Strength Order	1. Acidic Strength Comparison 2. Stability of carbocation			1. Stability of Carbocations. 2. Concept of Resonance. 3. Concept of Chirality	1. Counting the number of chiral carbon	
23. HYDROCARBONS	1. Reaction of Alkene with Polar reagent.	1. Structure of Benzene and cyclohexene 2. Hydroboration and Oxidation and Oxymercuration and demercuration. 3. Calculation of monochloro derivatives	1. Conformational Analysis of n-butane	1. Stability of Alkene Major Product	1. Physical Properties of Alkyl Halides		1. Reaction of alkene with hot and cold H <sub>2</sub> SO <sub>4</sub>	1. Electrophilic Substitution Reaction of Nitrobenzene	1. Reaction of Alkenes & Alkyne Application of Lindlar Catalyst and Birch Reduction	1. Hydrogenation of Alkene and ozonolysis	1. Reduction of Alkynes and Physical Properties of Alkenes	1. Electrophilic Substitution Reaction of Benzene	

24. Salt Analysis	1. Testing of Ni <sup>2+</sup> ion		1. Cationic detection	1. Ag <sup>+</sup> ion detection	1. Borax Bead Test		1. Wet test (Cationic detection)		1. Cationic Analysis		1. Cationic Analysis	
25. ALKYL HALIDES	1. Name Reaction based on halide exchange					1. Dehydro halogenation of alkyl bromide	1. Name reaction based on arylhalide	1. Unimolecular Substitution reaction comparison 2. Name reaction of Aryl halides	1. Physical Properties of Aryl halides. (Melting Point)	1. Structure of Gammaxene		1. Characteristic Features of Unimolecular Substitution reaction
26. ALCOHOLS, PHENOLS, AND ETHERS	1. Hydrolysis of ether		1. Miscellaneous Problem of Nucleophilic Substitution. 2. Reaction on Aromatic species. 3. Preparation of phenol with Cumene	1. Test of Ferric Ammonium Nitrate (CAN) and iodoform test		1. Dehydration of Alcohol	1. Identification of phenol derivative compound based on given information	1. Reaction of phenol derivatives with NaHCO <sub>3</sub> , cold NaOH and hot NaOH		1. Haloform test	1. Miscellaneous Problem on product formation	1. Reaction of Salicylic acid (Esterification)
27. ORGANIC COMPOUNDS CONTAINING NITROGEN		1. Properties of Aniline and aryl amine	1. Miscellaneous Problem and sequence Reaction of nitrobenzene derivatives			1. Hoffmann Bromide degradation reaction	1. Miscellaneous reaction and formation of benzyl isocyanide		1. Reaction of Nitrobenzene and Aniline with Acetic anhydride 2. Miscellaneous reaction of Organic Compound Containing Nitrogen	1. Reaction of Amine with HNO <sub>2</sub> and PhSO <sub>2</sub> Cl	1. Miscellaneous Reaction of amine and ester	
28. POLYMERS				1. Polymers and their Application		1. Polymers and their synthetic route	1. Polymerization of Caprolactum to form nylon-6					
29. BIOMOLECULES	1. Structure of Uracil	1. Calculation of tripeptides	1. Structure of different anomers of Glucopyranose and fructose		1. Calculation of cyclic tripeptides	1. Structure of Amino acids, and peptide formation	1. Test of Ketones and Aldoses (Seliwanoff's test)	1. Hydrolysis of peptides	1. Hydrolysis of Protein (Amino Acid)	1. Reaction of given Carbohydrate with AC <sub>2</sub> O, Br <sub>2</sub> -H <sub>2</sub> O and HI	1. Cyclic Structure of given carbohydrate	1. Synthesis of amino acid
30. CHEMISTRY IN EVERYDAY LIFE	1. Application of drug	1. Types drugs and their applications	1. Definition of Antibiotics	1. Chemicals in food (Preservatives)	1. Application of drugs	1. Application of drugs	1. Examples of Antacids 2. Drugs	1. Application of antihistamines and Antacids	1. Soap and detergent. Structure of Micelle/foam. 2. Sweetening Agent (Artificial Sugars)	1. Example of disinfectants	1. Identification of drugs and their activity	1. Structure of Vitamin C 2. Stability of Structures 2. No. of Tranquilizers drug.
31. PRINCIPLES RELATED TO PRACTICAL CHEMISTRY		1. Colour optimization of diazocompound			1. Lassaigne's Test		1. Fehling's test and lassaigne test		1. Identification of Compounds by Sooty Flame		1. Various test of peptide, Aldehyde carbohydrate and Amines	1. Lassaigne's test and Test of carboxylic acid
32. Aldehydes Ketones and carboxylic acids	1. Miscellaneous problem based on lactone formation 2. Reaction of ketone with grignard reagent	1. Clemmensen and wolf kishner reduction	1. Structural Stability of Acetal & Ketal 2. Cannizaro Reaction and Role of Reagent	1. Reaction of Alcohol & Carboxylic Acid	1. Combined question on Hoffmann degradation, Clemmenson, Cannizaro and Reimer-tiemann reaction. 2. Reduction of Carbonyl and amid F. G. 3. Ozonolysis	1. Nucleophilic addition reaction on carboxyl compound		1. Clemmenson Reduction	1. Aldol condensation	1. Miscellaneous Reaction based on Aldol Condensation		1. Miscellaneous reaction of Ketone, Hydrolysis of cyanide and reaction of Li AlH <sub>4</sub>