

Part-II (Class-X)	Marks: 60	Time: 2:00 Hours
Unit-9 :	CHEMICAL EQUILIBRIUM	
9.1	Reversible Reaction and Dynamic Equilibrium	
9.2	Law of Mass Action	
9.3	Equilibrium Constant and its Units	
9.4	Importance of Equilibrium Constant	
Unit-10 :	ACIDS, BASES AND SALTS	
10.1	Concepts of Acids and Bases	
	10.1.1 Arrhenius Concept of Acids and Bases	
	10.1.2 Limitation of Arrhenius Concept	
	10.1.3 Lewis Concept of Acids and Bases	
	10.1.4 General Properties of Acids	
	10.1.5 General Properties of Bases	
10.2	pH Scale	
10.3	Salts	
	10.3.1 Preparation	10.3.2 Types of Salts
	10.3.3 Uses of Salts	
Unit-11 :	ORGANIC CHEMISTRY	
11.1	Organic Compounds	
	11.1.1 Classification of Organic Compounds	
	11.1.2 Diversity and Magnitude of Organic Compounds	
	11.1.3 General Characteristics of Organic Compounds	
11.2	Sources of Organic Compounds	
	11.2.1 Coal	11.2.2 Petroleum
	11.2.3 Natural Gas	11.2.4 Plants
	11.2.5 Synthesis in Laboratory	
11.3	Uses of Organic Compounds	
11.4	Alkenes and Alky Radicals	
11.5	Functional Groups	
	11.5.1 Functional Groups depend on Carbon, Hydrogen and Oxygen	
	11.5.2 Functional Groups depend on Carbon, Hydrogen and Nitrogen	
	11.5.3 Functional Groups depends on Carbon, Hydrogen and Halogen	
	11.5.4 Double and Triple Bond	
11.6	Tests of functional groups	
	11.6.1 Test for unsaturation	11.6.2 Test for Alcoholic group
	11.6.3 Test for Carboxylic group	11.6.4 Test for Aldehydic group
	11.6.5 Test for Ketonic group	11.6.6 Test for Primary Amino group
	11.6.7 Test for ester	
Unit-12 :	HYDROCARBONS	
12.1	Alkanes	
	12.1.1 Preparation of Alkenes	
	(Hydrogenation of alkenes and alkynes, Reduction of alkyl halides)	
	12.1.2 Chemical reactions (Halogenation, Combustion)	
12.2	Alkenes	
	12.2.1 Preparation of Alkenes	
	(Dehydration of Alcohols, Dehydrohalogenation of alkyl halides)	
	12.2.2 Chemical reactions	
	(Hydrogenation of alkenes, Halogenation of alkenes, Hydro	
	Halogenation of Alkenes, Oxidation of alkenes with KMnO_4)	
12.3	Alkynes	
	12.3.1 Preparation of Alkynes (Dehydro Halogenation of vicinal dihalides,	
	Dehalogenation of terahalides)	
	12.3.2 Chemical Reactions (Addition of halogen, Oxidation with KMnO_4)	

Unit-13 : BIOCHEMISTRY

- 13.1 Carbohydrates
 - 13.1.1 Monosaccharides
 - 13.1.2 Oligosaccharides
 - 13.1.3 Polysaccharides
 - 13.1.4 Sources and uses of carbohydrates
- 13.2 Protein
 - 13.2.1 Amino Acids are building blocks of proteins
 - 13.2.2 Sources and uses of proteins
- 13.3 Lipids
 - 13.3.1 Fatty acids
 - 13.3.2 Sources and uses of lipids
- 13.4 Nucleic Acids
 - 13.4.1 Deoxyribonucleic acid (DNA)
 - 13.4.2 Ribonucleic acid RNA
- 13.5 Vitamins
 - 13.5.1 Types of Vitamins (Fat soluble vitamins, Water soluble vitamins)
 - 13.5.2 Importance of vitamins

Unit-14 : THE ATMOSPHERE

- 14.1 Composition of Atmosphere
- 14.2 Layers of Atmosphere
 - 14.2.1 Troposphere
 - 14.2.2 Stratosphere
- 14.3 Pollutants
 - 14.3.1 Types of pollutants
 - 14.3.2 Sources of air pollutants
- 14.4 Acid Rain and its Effects
- 14.5 Ozone Depletion and its Effects

Unit-15 : WATER

- 15.1 Properties of Water
- 15.2 Water as Solvent
- 15.3 Soft and Hard Water
 - 15.3.1 Types of Hardness of Water
 - 15.3.2 Methods of Removing Hardness
- 15.4 Water Pollution
 - 15.4.1 Industrial effluents
 - 15.4.2 Domestic effluents
 - 15.4.3 Agricultural effluents
- 15.5 Waterborne infectious diseases (Dysentery, Cholera, Cryptosporidium, Fluorosis, Hepatitis, Hookworm, Jaundice, Typhoid)

Unit-16 : CHEMICAL INDUSTRIES

- 16.1 Basic Metallurgical Operations
- 16.2 Manufacture of Sodium Carbonate by Solvay's Process
 - 16.2.1 Materials
 - 16.2.2 Basic reactions
- 16.3 Manufacture of Urea
 - 16.3.1 Raw materials
 - 16.3.2 Process
- 16.4 Petroleum Industry
 - 16.4.1 Petroleum
 - 16.4.2 Origin of Petroleum
 - 16.4.3 Important fractions of Petroleum

LIST OF PRACTICALS FOR CLASS-IX (PART-I)

1. Separate the given mixture of iron fillings and sand by physical method.
2. Determine the melting point of given compounds Naphthalene.
3. Determine the melting point of given compounds Biphenyl.
4. Determine the boiling point of given liquids (Acetone).
5. Determine the boiling point of given liquids (Toluene).
6. Determine the boiling point of given liquids (Ethyl alcohol).
7. Demonstrate sublimation using ammonium chloride.
8. Separate naphthalene from given mixture of sand and naphthalene by sublimation.
9. Separate the given mixture of alcohol and water by distillation.

10. Demonstrate that a chemical reaction releases energy in the form of heat.
11. Prepare 100cm³ of 0.1M sodium hydroxide (NaOH solution).
12. Prepare 100cm³ of 0.1M sodium carbonate (Na₂CO₃ solution).
13. Prepare 250cm³ of 0.1M HCl solution.
14. Prepare 250cm³ of 0.1M oxalic acid (H₂C₂O₄.2H₂O solution).
15. Prepare 100cm³ of 0.1M sodium hydroxide (NaOH solution from the given 1M solution).
16. Prepare 100cm³ of 0.01M Na₂CO₃ solution from the given 0.1 M solution.
17. Prepare 100cm³ of 0.01M hydrochloric acid (HCl solution from the given 0.1M solution).
18. Prepare 100cm³ of 0.01M oxalic acid solution from the given 0.1M solution.
19. Prepare pure copper sulphate crystals from the given impure sample.
20. Demonstrate that miscible liquids dissolve in each other and immiscible liquids do not.
21. Demonstrate that temperature affects the solubility.
22. Demonstrate the conductivity of different given solution.
23. Demonstrate a metal displacement reaction in aqueous medium.
24. Demonstrate that two elements combine to form a binary compound.
25. Demonstrate that compounds can be products of a decomposition reaction.
26. Demonstrate that some processes absorb energy.

LIST OF PRACTICALS FOR CLASS-X (PART-II)

1. Identify sodium, calcium, strontium, barium, copper and potassium ions by flame test.
2. Standardize the given NaOH solution volumetrically.
3. Standardize the given HCl solution volumetrically.
4. Determine the exact molarity of the Na₂CO₃ solution volumetrically.
5. Determine the exact molarity of a solution of oxalic acid volumetrically.
6. Demonstrate that some natural substances are weak acids.
7. Classify substances as acidic, basic or neutral.
8. Identify aldehydes using Fehling's test and Tollen's test.
9. Identify ketones using 2,4-dinitrophenyl hydrazine test.
10. Identify carboxylic acids using sodium carbonate test.
11. Identify phenol using Ferric Chloride test.
12. Identify saturated and unsaturated organic compounds by KMnO₄ test.
13. Demonstrate that sugar decomposes into elements and other compounds.
14. Demonstrate the softening of water by removal of calcium and magnesium ions from hard water.

Prescribed Book: Chemistry for Part – II (Class – X)

Authors: Dr. Jalil Tariq , Dr. Irshad Ahmad Chatha

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