**[CHEMISTRY](http://www.result.pk)**

[For Class X (marks 65)](http://www.result.pk)

**[1. Chemical Equilibrium](http://www.result.pk)**

[Introduction](http://www.result.pk)

[9.1 Reversible Reaction and Dynamic Equilibrium](http://www.result.pk)

[9.2 Law of Mass Action and Derivation of the Expression for the Equilibrium Constant](http://www.result.pk)

[9.3 Equilibrium Constant and Its Units](http://www.result.pk)

[9.4 Importance of Equilibrium Constant](http://www.result.pk)

**[2. Acids, Bases, and Salts](http://www.result.pk)**

[Introduction](http://www.result.pk)

[10.1 Concepts of Acids and Bases](http://www.result.pk)

[10.1.1 Arrhenius Concept of Acids and Bases](http://www.result.pk)

[10.1.2 Bronsted Concept of Acids, and Bases](http://www.result.pk)

[10.1.3 Lewis Concept of Acids and Bases](http://www.result.pk)

[10.2 pH Scale](http://www.result.pk)

[10.3 Salts](http://www.result.pk)

[10.3.1 Preparation](http://www.result.pk)

[10.3.2 Types of](http://www.result.pk)

[10.3.3 Uses of some Salts](http://www.result.pk)

**[3. Organic Chemistry](http://www.result.pk)**

[Introduction](http://www.result.pk)

[11.1 Organic Compounds](http://www.result.pk)

[11.2 Sources of Organic Compounds](http://www.result.pk)

[11.2.1 Coal](http://www.result.pk)

[11.2.2 Petroleum](http://www.result.pk)

[11.2.3 Natural Gas](http://www.result.pk)

[11.2.4 Plants](http://www.result.pk)

[11.2.5 Synthesis in the Lab](http://www.result.pk)

[11.3 Uses of Organic Compounds](http://www.result.pk)

[11.4 Alkanes and Alkyl Radicals](http://www.result.pk)

[11.5 Functional Groups](http://www.result.pk)

[11.5.1 Functional Groups Containing Carbon, Hydrogen and Oxygen](http://www.result.pk)

[11.5.2 Functional Groups Containing Carbon, Hydrogen and Nitrogen](http://www.result.pk)

[11.5.3 Functional Groups Containing Carbon, Hydrogen and Halogens](http://www.result.pk)

[11.5.4 Double and Triple Bond](http://www.result.pk)

**[4. Hydrocarbons](http://www.result.pk)**

[Introduction](http://www.result.pk)

[12.1 Alkanes](http://www.result.pk)

[12.1.1 Preparation](http://www.result.pk)

[12.1.1.1 Hydrogenation of Alkenes and Alkynes](http://www.result.pk)

[12.1.1.2 Reduction of Alkyl Halides](http://www.result.pk)

[12.1.2 Important Reactions](http://www.result.pk)

[12.1.2.1 Halogenation](http://www.result.pk)

[12.1.2.2 Combustion](http://www.result.pk)

[12.2 Alkenes](http://www.result.pk)

[12.2.1 Preparation](http://www.result.pk)

[12.2.1.1 Dehydration of Alcohols](http://www.result.pk)

[12.2.1.2 Dehydrohalogenation of Alkyl Halides](http://www.result.pk)

[12.2.2 Important Reactions](http://www.result.pk)

[12.2.2.1 Addition of Halogens](http://www.result.pk)

[12.2.2.2 Addition of Hydrogen Halides](http://www.result.pk)

[12.2.2.3 Oxidation with KMnO4](http://www.result.pk)

[12.3 Alkynes](http://www.result.pk)

[12.3.1 Preparation](http://www.result.pk)

[12.3.1.1 Dehalogenation of Adjacent Dihalides](http://www.result.pk)

[12.3.1.2 Dehalogenation of Tetrahalides](http://www.result.pk)

[12.3.2 Important Reactions](http://www.result.pk)

[12.3.2.1 Addition of Halogens](http://www.result.pk)

[12.3.2.2 Oxidation with KMnO4](http://www.result.pk)

**[5. Biochemistry](http://www.result.pk)**

[Introduction](http://www.result.pk)

[13.1 Carbohydrates](http://www.result.pk)

[13.1.1 Monosaccharides](http://www.result.pk)

[13.1.2 Oligosaccharides](http://www.result.pk)

[13.1.3 Polysaccharides](http://www.result.pk)

[13.1.4 Sources and Uses](http://www.result.pk)

[13.2 Proteins](http://www.result.pk)

[13.2.1 Amino Acids as Building Blocks of Proteins](http://www.result.pk)

[13.2.2 Sources and Uses](http://www.result.pk)

[13.3 Lipids](http://www.result.pk)

[13.3.1 Fatty Acids](http://www.result.pk)

[13.3.2 Sources and Uses](http://www.result.pk)

[13.4 Vitamins](http://www.result.pk)

[13.4.1 Types of Vitamins](http://www.result.pk)

[13.4.2 Importance of Vitamins](http://www.result.pk)

**[6. Environmental Chemistry I: The Atmosphere](http://www.result.pk)**

[Introduction](http://www.result.pk)

[14.1 Composition of Atmosphere](http://www.result.pk)

[14.2 Layers of Atmosphere](http://www.result.pk)

[14.2.1 Troposphere](http://www.result.pk)

[14.2.2 Stratosphere](http://www.result.pk)

[14.3 Pollutants](http://www.result.pk)

[14.3.1 Major Air Pollutants](http://www.result.pk)

[14.3.2 Sources of Air Pollutants](http://www.result.pk)

[14.4 Acid Rain and Its Effects](http://www.result.pk)

[14.5 Ozone Depletion and Its Effects](http://www.result.pk)

**[7. Environmental Chemistry II: Water](http://www.result.pk)**

[Introduction](http://www.result.pk)

[15.1 Water](http://www.result.pk)

[15.1.1 Properties of Water](http://www.result.pk)

[15.1.2 Water as Solvent](http://www.result.pk)

[15.2 Soft and Hard Water](http://www.result.pk)

[15.2.1 Types of Hardness of Water](http://www.result.pk)

[15.2.2 Methods of Removing Hardness](http://www.result.pk)

[15.2.3 Disadvantages of Water Hardness](http://www.result.pk)

[15.3 Water Pollution](http://www.result.pk)

[15.3.1 Industrial Wastes](http://www.result.pk)

[15.3.2 Household Wastes](http://www.result.pk)

[15.3.3 Agricultural Waste](http://www.result.pk)

[15.4 Water Borne Diseases](http://www.result.pk)

**[8. Chemical Industries](http://www.result.pk)**

[Introduction](http://www.result.pk)

[16.1 Basic Metallurgical Operations with Reference to Copper](http://www.result.pk)

[16.1.1 Concentration](http://www.result.pk)

[16.1.2 Extraction](http://www.result.pk)

[16.1.3 Electro-Refining](http://www.result.pk)

[16.2 Manufacture of Sodium Carbonate by Solvay’s Process](http://www.result.pk)

[16.2.1 Raw Materials](http://www.result.pk)

[16.2.2 Basic Reactions](http://www.result.pk)

[16.2.3 Flow Sheet Diagram](http://www.result.pk)

[16.3 Manufacture of Urea](http://www.result.pk)

[16.3.1 Raw Materials](http://www.result.pk)

[16.3.2 Reaction](http://www.result.pk)

[16.3.3 Flow Sheet Diagram](http://www.result.pk)

[16.4 Petroleum Industry](http://www.result.pk)

[16.4.1 Petroleum](http://www.result.pk)

[16.4.2 Origin of Petroleum](http://www.result.pk)

[16.4.3 Mining of Petroleum](http://www.result.pk)

[16.4.4 Important Fractions of Petroleum](http://www.result.pk)

**[LIST OF PRACTICALS](http://www.result.pk)**

**[­­­­](http://www.result.pk)**

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| --- | --- | --- |
| **[S #](http://www.result.pk)** | **[PRACTICAL](http://www.result.pk)** | **[STATUS](http://www.result.pk)** |
| [1. Fundamentals of Chemistry](http://www.result.pk) | | |
| [1.](http://www.result.pk) | [Separate the given mixture by physical method.](http://www.result.pk) | [Minor](http://www.result.pk) |
| [5. Physical States of Matter](http://www.result.pk) | | |
| [2.](http://www.result.pk) | [Determine the Melting Point of Naphthalene.](http://www.result.pk) | [Major](http://www.result.pk) |
| [3.](http://www.result.pk) | [Determine the Boiling Point of Ethyl Alcohol.](http://www.result.pk) | [Major](http://www.result.pk) |
| [4.](http://www.result.pk) | [Separate naphthalene from the given mixture of sand and naphthalene by sublimation.](http://www.result.pk) | [Major](http://www.result.pk) |
| [5.](http://www.result.pk) | [Separate the given mixture of alcohol and water by distillation.](http://www.result.pk) | [Major](http://www.result.pk) |
| [6.](http://www.result.pk) | [Demonstrate that a chemical reaction release energy in the form of heat.](http://www.result.pk) | [Minor](http://www.result.pk) |
| [6. Solutions](http://www.result.pk) | | |
| [7.](http://www.result.pk) | [Prepare 100 cm­](http://www.result.pk)[3](http://www.result.pk) [of 0.1M NaOH solution.](http://www.result.pk) | [Major](http://www.result.pk) |
| [8.](http://www.result.pk) | [Prepare 100 cm­](http://www.result.pk)[3](http://www.result.pk) [of 0.1M Na](http://www.result.pk)[2](http://www.result.pk)[CO](http://www.result.pk)[3](http://www.result.pk) [solution.](http://www.result.pk) | [Major](http://www.result.pk) |
| [9.](http://www.result.pk) | [Prepare 250 cm­](http://www.result.pk)[3](http://www.result.pk) [of 0.1M HCl solution.](http://www.result.pk) | [Major](http://www.result.pk) |
| [10.](http://www.result.pk) | [Prepare 250 cm](http://www.result.pk)[3](http://www.result.pk) [of 0.1M of oxalic acid solution.](http://www.result.pk) | [Major](http://www.result.pk) |
| [11.](http://www.result.pk) | [Prepare 100 cm](http://www.result.pk)[3](http://www.result.pk) [of 0.1M NaOH solution from the given 1M solution.](http://www.result.pk) | [Major](http://www.result.pk) |
| [12.](http://www.result.pk) | [Prepare 100 cm](http://www.result.pk)[3](http://www.result.pk) [of 0.01M Na](http://www.result.pk)[2](http://www.result.pk)[CO](http://www.result.pk)[3](http://www.result.pk) [solution from the given 0.1M solution.](http://www.result.pk) | [Major](http://www.result.pk) |
| [13.](http://www.result.pk) | [Prepare 100 cm](http://www.result.pk)[3](http://www.result.pk) [of 0.01M HCl solution from the given 0.1M solution.](http://www.result.pk) | [Major](http://www.result.pk) |
| [14.](http://www.result.pk) | [Prepare 100 cm](http://www.result.pk)[3](http://www.result.pk) [of 0.01M oxalic acid solution from the given 0.1M solution.](http://www.result.pk) | [Major](http://www.result.pk) |
| [15.](http://www.result.pk) | [Prepare pure copper sulphate crystals from the given impure sample.](http://www.result.pk) | [Minor](http://www.result.pk) |
| [16.](http://www.result.pk) | [Demonstrate that miscible liquids dissolve in each other and immiscible liquids do not.](http://www.result.pk) | [Minor](http://www.result.pk) |
| [17.](http://www.result.pk) | [Demonstrate that temperature affects solubility.](http://www.result.pk) | [Minor](http://www.result.pk) |
| [7. Electrochemistry](http://www.result.pk) | | |
| [18.](http://www.result.pk) | [Demonstrate the conductivity of different given solutions.](http://www.result.pk) | [Minor](http://www.result.pk) |
| [19.](http://www.result.pk) | [Demonstrate a metal displacement reaction in aqueous medium.](http://www.result.pk) | [Minor](http://www.result.pk) |
| [8. Chemical Reactivity](http://www.result.pk) | | |
| [20.](http://www.result.pk) | [Demonstrate that two elements combine to form a binary compound.](http://www.result.pk) | [Major](http://www.result.pk) |
| [21.](http://www.result.pk) | [Demonstrate that compounds can be products of a decomposition reaction.](http://www.result.pk) | [Minor](http://www.result.pk) |
| [22.](http://www.result.pk) | [Demonstrate that an element and a compound can react to form a different element and a different compound.](http://www.result.pk) | [Minor](http://www.result.pk) |
| [23.](http://www.result.pk) | [Demonstrate that some chemical reactions absorb energy.](http://www.result.pk) | [Minor](http://www.result.pk) |
| [10. Acids, Bases and Salts](http://www.result.pk) | | |
| [24.](http://www.result.pk) | [Identify sodium, calcium, strontium, barium, copper, potassium radicals by flame test.](http://www.result.pk) | [Minor](http://www.result.pk) |
| [25.](http://www.result.pk) | [Standardize the given NaOH solution volumetrically.](http://www.result.pk) | [Major](http://www.result.pk) |
| [26.](http://www.result.pk) | [Standardize the given HCl solution volumetrically.](http://www.result.pk) | [Major](http://www.result.pk) |
| [27.](http://www.result.pk) | [Determine the exact molarity of the Na](http://www.result.pk)[2](http://www.result.pk)[CO](http://www.result.pk)[3](http://www.result.pk) [solution volumetrically.](http://www.result.pk) | [Major](http://www.result.pk) |
| [28.](http://www.result.pk) | [Determine the exact molarity of a solution of oxalic acid volumetrically.](http://www.result.pk) | [Major](http://www.result.pk) |
| [29.](http://www.result.pk) | [Demonstrate that some natural substances are weak acids.](http://www.result.pk) | [Minor](http://www.result.pk) |
| [30.](http://www.result.pk) | [Classify substances as acidic, basic or neutral](http://www.result.pk) | [Minor](http://www.result.pk) |
| [11. Organic Chemistry](http://www.result.pk) | | |
| [31.](http://www.result.pk) | [Identify aldehydes using Fehling’s test and Tollen’s test.](http://www.result.pk) | [Major](http://www.result.pk) |
| [32.](http://www.result.pk) | [Identify ketones using 2, 4-dinitrophenyl hydrazine test.](http://www.result.pk) | [Major](http://www.result.pk) |
| [33.](http://www.result.pk) | [Identify carboxylic acids using sodium carbonate test.](http://www.result.pk) | [Major](http://www.result.pk) |
| [34.](http://www.result.pk) | [Identify phenol using Ferric Chloride test.](http://www.result.pk) | [Major](http://www.result.pk) |
| [12. Hydrocarbons](http://www.result.pk) | | |
| [35.](http://www.result.pk) | [Identify saturated and unsaturated organic compounds by KMnO](http://www.result.pk)[4](http://www.result.pk) [test.](http://www.result.pk) | [Minor](http://www.result.pk) |
| [13. Biochemistry](http://www.result.pk) | | |
| [36.](http://www.result.pk) | [Demonstrate that sugar decomposes into elements or other compounds.](http://www.result.pk) | [Minor](http://www.result.pk) |
| [15. Water](http://www.result.pk) | | |
| [37.](http://www.result.pk) | [Demonstrate the softening of water by removal of calcium ions from hard water.](http://www.result.pk) | [Major](http://www.result.pk) |

**[RECOMMENDED REFERENCE BOOKS FOR CLASS X](http://www.result.pk)**

[The question papers will be syllabus oriented. However, the following book is recommended for reference and supplementary reading:](http://www.result.pk)

[An interactive approach to Chemistry 10](http://www.result.pk)

[National Book Foundation, Islamabad.](http://www.result.pk)

|  |  |
| --- | --- |
| [LOGO](http://www.result.pk) |  |
| [Federal Board SSC Examination](http://www.result.pk)  [Chemistry Practical Model Question Paper](http://www.result.pk) |  |

[Time allowed: 2 hours Total Marks: 20](http://www.result.pk)

**[Note:](http://www.result.pk)** [Write procedure, equation, observation and calculation for Q.1 & Q.2.](http://www.result.pk)

**[Major Experiments:](http://www.result.pk)**

[Q.1](http://www.result.pk)[Preparation of standard solution. (5)](http://www.result.pk)

[Q.2](http://www.result.pk)[Identification of functional group. (5)](http://www.result.pk)

**[(OR)](http://www.result.pk)**

[Identification hardness of water. (5)](http://www.result.pk)

**[Miner Experiments](http://www.result.pk)** [(only performance)](http://www.result.pk)**[:](http://www.result.pk)**

[Q.3 Identify the acid, base and salt. (2)](http://www.result.pk)

[Q.4 Identification of saturated and unsaturated substances. (2)](http://www.result.pk)

[Note Book (4)](http://www.result.pk)

[Viva Voce (2)](http://www.result.pk)

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