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CLASS 12th - CHEMISTRY

1. The Solid State

- General Characteristics of Solid State
- Amorphous and Crystalline Solids
- Classification of Crystalline Solids
- Crystal Lattices and Unit Cells
- Number of Atoms in a Unit Cell
- Close Packed Structures
- Packing Efficiency
- Calculations Involving Unit Cell Dimensions
- Imperfections in Solids
- Electrical Properties
- Magnetic Properties

2. Solutions

- Types of Solutions
- Expressing Concentration of Solutions
- Solubility
- Vapour Pressure of Liquid Solutions
- Ideal and Non-ideal Solutions
- Colligative Properties and Determination of Molar Mass
- Abnormal Molar Masses

3. Electrochemistry

- Electrochemical Cells

- Galvanic Cells
- Nernst Equation
- Conductance of Electrolytic Solutions
- Electrolytic Cells and Electrolysis
- Batteries
- Fuel Cells
- Corrosion

4. Chemical Kinetics

- Rate of a Chemical Reaction
- Factors Influencing Rate of a Reaction
- Integrated Rate Equations
- Temperature Dependence of the Rate of a Reaction
- Collision Theory of Chemical Reactions

5. Surface Chemistry

- Adsorption
- Catalysis
- Colloids
- Classification of Colloids
- Emulsions
- Colloids Around Us

6. General Principles and Processes of Isolation of Elements

- Occurrence of Metals
- Concentration of Ores
- Extraction of Crude Metal from Concentrated Ore
- Thermodynamic Principles of Metallurgy

- Electrochemical Principles of Metallurgy
- Oxidation Reduction
- Refining
- Uses of Aluminium, Copper, Zinc and Iron

7. The p-Block Elements

- Group 15 Elements
- Dinitrogen
- Ammonia
- Oxides of Nitrogen
- Nitric Acid
- Phosphorus – Allotropic Forms
- Phosphine
- Phosphorus Halides
- Oxoacids of Phosphorus
- Group 16 Elements
- Dioxygen
- Simple Oxides
- Ozone
- Sulphur – Allotropic Forms
- Sulphur Dioxide
- Oxoacids of Sulphur
- Sulphuric Acid
- Group 17 Elements
- Chlorine
- Hydrogen Chloride
- Oxoacids of Halogens
- Interhalogen Compounds
- Group 18 Elements

8. The d-and f-Block Elements

- Position in the Periodic Table
- Electronic Configurations of the d-Block Elements
- General Properties of the Transition Elements (d-Block)
- Some Important Compounds of Transition Elements
- The Lanthanoids
- The Actinoids
- Some Applications of d- and f-Block Elements

9. Coordination Compounds

- Werner's Theory of Coordination Compounds
- Definitions of Some Important Terms Pertaining to
- Coordination Compounds
- Nomenclature of Coordination Compounds
- Isomerism in Coordination Compounds
- Bonding in Coordination Compounds
- Bonding in Metal Carbonyls
- Importance and Applications of Coordination
- Compounds

10. Haloalkanes and Haloarenes

- Classification
- Nomenclature
- Nature of C–X Bond
- Methods of Preparation of Haloalkanes
- Preparation of Haloarenes

- Physical Properties
- Chemical Reactions

11. Alcohols, Phenols and Ethers

- Classification
- Nomenclature
- Structures of Functional Groups
- Alcohols and Phenols
- Some Commercially Important Alcohols
- Ethers

12. Aldehydes, Ketones and Carboxylic Acids

- Nomenclature and Structure of Carbonyl Group
- Preparation of Aldehydes and Ketones
- Physical Properties
- Chemical Reactions
- Uses of Aldehydes and Ketones
- Nomenclature and Structure of Carboxyl Group
- Methods of Preparation of Carboxylic Acids
- Physical Properties
- Chemical Reactions
- Uses of Carboxylic Acids

13. Amines

- Structure of Amines
- Classification
- Nomenclature
- Preparation of Amines
- Physical Properties

- Chemical Reactions
- Method of Preparation of Diazonium Salts
- Physical Properties
- Chemical Reactions
- Importance of Diazonium Salts in Synthesis of Aromatic Compounds

14. Biomolecules

- Carbohydrates
- Proteins
- Enzymes
- Vitamins
- Nucleic Acids
- Hormones

15. Polymers

- Classification of Polymers
- Types of Polymerisation Reactions
- Molecular Mass of Polymers
- Biodegradable Polymers
- Polymers of Commercial Importance

16. Chemistry in Everyday Life

- Drugs and their Classification
- Drug-Target Interaction
- Therapeutic Action of Different Classes of Drugs
- Chemicals in Food
- Cleansing Agents