

BIHAR BOARD CHEMISTRY SYLLABUS WITH MARKS WEIGHTAGE

Unit-wise Distribution of Marks

Unit Name	Marks
Solid State	04
Solution	05
Electrochemistry	05
Chemical Kinetics	05
Surface Chemistry	03
General Principle & Processes of Isolation of Elements	03
p-block Elements	08
d and f-block Elements	05
Co-ordination compounds	03
Haloalkane & Haloarenes	04
Alcohols, Phenols & Ethers	04
Aldehyde, Ketone and Carboxylic Acid	06
Organic compounds containing Nitrogen	04
Biomolecules	04
Polymers	03
Chemistry in everyday life	03
TOTAL	70

Bihar Board 12th Chemistry Detailed Syllabus

Here is the detailed chapter wise Bihar Board 12 Chemistry syllabus below:

Unit 1: Solid State

- Classification based on different binding forces
- Crystalline and Amorphous Solid
- Unit cell: in two dimensional and three dimensional lattices, density of unit cell, packing in solids, voids, number of atoms per unit cell, point defects.
- Band theory: Metals, Conductors and Semiconductors and Insulators
- n and p-type semiconductors.

Unit 2: Solutions

- Types of solutions
- Expressing Concentration of solutions



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- Osmosis and Osmotic Pressure
- Colligative Properties & Determination of Molar mass
- Abnormal molecular mass
- Vapour Pressure of Liquid solutions
- Depression of Freezing point.

Unit 3: Electrochemistry

- Redox Reactions
- Electrolytic Cells and Electrolysis: Electrolytic Solutions
- Galvanic Cells, Dry Cells and electrolytic Cells: EMF of a cell.
- Nernst Equation and its applications.
- Kohlraush's Law
- Corrosion
- Fuel Cells

Unit 4: Chemical Kinetics

- Rate of Reaction: Integrated Rate of a reactions, factors affecting the rate of reaction, Temperature dependence.
- Order and molecularity of a reaction, rate law, specific rate constant, integrated rate equations and half life.
- Concept of collision theory.
- Activation energy
- Arrhenius equation.

Unit 5: Surface Chemistry

- Adsorption: factors affecting adsorption of gases on solids
- Catalysis, homogenous and heterogeneous activity and selectivity; enzyme catalysis colloidal state distinction between true solutions,
- Colloids: Preparation of colloids and suspensions
- Properties of Colloids: Tyndall effect, Brownian movement, electrophoresis, coagulation. Emulsion: types of emulsions.

Unit 6: General Principles and Processes of Isolation of Elements

- Principles and Methods of extraction
- Oxidation and Reduction
- Electrolytic method and refining
- Occurrence of extraction of aluminium, copper, zinc and iron.

Unit 7: p-block Elements

Group 15 Elements:

- Introduction, Configuration, Oxidation State, Occurrence, Physical & Chemical Properties.
- Nitrogen: Preparation properties, uses, compounds, properties of ammonia and nitric acid, oxides of nitrogen.
- Phosphorus – allotropic forms, compounds of phosphorus: preparation and properties of phosphine, halides PCl_3 , PCl_5 and oxoacids.

Group 16 Elements:

- Introduction, Configuration, Oxidation State, Occurrence, Physical & Chemical Properties.
- Dioxygen: Preparation properties and uses
- Oxides: Classification of Oxides, Ozone.
- Sulphur: Sulphur allotropic form, Compounds of sulphur, uses of Sulphur-di-oxide, Sulphuric acid, oxoacids of sulphur.

Group 17 Elements:

- Introduction, Configuration, Oxidation State, Occurrence, Physical & Chemical Properties.
- Halogen Compounds, uses of Chlorine and Hydrochloric Acid, interhalogen compounds, oxoacids of halogens.

Group 18 Elements:

- Introduction, Configuration, Oxidation State, Occurrence, Physical & Chemical Properties.

Unit 8: d and f-block Elements

- Introduction, Configuration, Oxidation State, Occurrence, Physical & Chemical Properties.
- Transition Metals: Characteristics and Occurrence
- Potassium Dichromate & Potassium Permanganate: Preparation and Properties
- **Lanthanoids** – Electronic configuration, oxidation states, and lanthanoid contraction.
- **Actinoids** – Electronic configuration, oxidation states.

Unit 9: Coordination Compounds

- IUPAC nomenclature of mononuclear coordination compounds.
- Bonding in Metal carbonyl's
- Introduction and Werner's theory of Coordination Compounds.
- Valence Bond theory and Crystal field Theory: structure and stereo isomerism, importance.

Unit 10: Haloalkanes and Haloarenes

- Haloalkanes: Classification, Applications, Nomenclature, nature of C-X bond.
- Haloarenes: Nature of C-X bond, substitution reactions
- Uses and environmental effects of – dichloromethane, trichloromethane, tetrachloromethane, iodoform freons, DDT.

Unit 11: Alcohols, Phenols, and Ethers

- Alcohols: Nomenclature, preparation methods, physical and chemical properties, identification of alcohols (Primary, Secondary, and Tertiary), mechanism of dehydration, Uses.
- Phenols: Nomenclature, methods of preparation, Properties, acidic nature of phenol, electrophilic substitution reactions, uses of phenols.
- Ethers: Nomenclature, Preparation Methods, Properties and Uses.

Unit 12: Aldehydes, Ketones, and Carboxylic Acids

- Aldehydes and Ketones: Nomenclature, Preparation Methods, Properties, Nucleophilic addition reaction.
- Carboxylic Acids: Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses.

Unit 13: Organic Compounds and Containing Nitrogen

- Amines: Structure, Classification, Nomenclature, Preparation Method, Properties, Uses, Identification of Amines (Primary, Secondary & Tertiary).
- Cyanides and Isocyanides: Structure, Classification, Nomenclature, Preparation Method, Properties and Uses
- Diazonium salts: Structure, Classification, Nomenclature, Preparation Method, Properties, and importance in synthetic organic chemistry.

Unit 14: Biomolecules

- Carbohydrates: Classification and Uses.
- Proteins: Structures, Elementary idea of α – amino acids, peptide bond, polypeptides, proteins. Denaturation of proteins and enzymes.
- Vitamins: Classification and functions.
- Nucleic Acids: DNA and RNA structures.

Unit 15: Polymers

- Classification, Polymerization Method, Copolymerization
- Natural and Synthetic Polymers.
- Biodegradable and non-biodegradable polymers.

Unit 16: Chemistry in Everyday Life

- Chemicals in Foods.
- Drugs and their Classification
- Chemicals in medicines: antiseptics, disinfectants, antifertility drugs, antibiotics, antacids, antihistamines etc.
- Chemicals in food: Preservatives, artificial sweetening agents.
- Cleansing agents: Soaps and detergents, cleansing action.

This information would be useful for those who are looking for Chemistry Class 12th Syllabus of Bihar Board.

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