

Syllabus:

UNIT –I Chemistry of p-block elements – I

9 h

Group 13: Preparation & structure of Diborane, Borazine and $(\text{BN})_x$

Group 14: Preparation, classification and uses of silicones and Silanes.

Group 15: Preparation & structure of Phosphonitrilic Chloride $\text{P}_3\text{N}_3\text{Cl}_6$

Unit II Chemistry of p-block elements – II

9 h

Group 16: Classification of Oxides, structures of oxides and Oxoacids of Sulphur

Group 17: Preparation and Structures of Interhalogen compounds. Pseudo halogens.

UNIT-III Chemistry of d-block elements:

9 h

Characteristics of d-block elements with special reference to electronic configuration, variable valence, color, magnetic properties, catalytic properties and ability to form complexes. Stability of various oxidation states of 3d series-Latimer diagrams.

UNIT-IV Chemistry of f-block elements:

9 h

Chemistry of lanthanides - electronic configuration, oxidation states, lanthanide contraction, consequences of lanthanide contraction, color, magnetic properties. Separation of lanthanides by ion exchange method. Chemistry of actinides - electronic configuration, oxidation states, actinide contraction, comparison of lanthanides and actinides.

UNIT-V: ORGANOMETALLIC CHEMISTRY

Definition - classification of Organometallic compounds - nomenclature, preparation, properties and applications of alkyls of Li and Mg.

List of Reference Books:

1. Inorganic Chemistry by J.E.Huheey
2. Basic Inorganic Chemistry by Cotton and Wilkinson
3. A textbook of qualitative inorganic analysis by A.I. Vogel
4. Concise Inorganic Chemistry by J.D.Lee