

## **Syllabus:**

### **UNIT –I Chemistry of p-block elements – I**

**9 h**

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

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

Group 15: Preparation & structure of Phosphonitrilic Chloride  $P_3N_3Cl_6$

### **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