

II - SEMESTER

Course Code 4: INORGANIC CHEMISTRY- I

Credits: 03

Course outcomes:

At the end of the course, the student will be able to:

1. Understand the basic concepts of p-block elements.
2. Explain the concepts of d-block elements
3. Distinguish lanthanides and actinides.
4. Describe the importance of radioactivity.

Syllabus:

UNIT –I Chemistry of p-block elements – I 9 h

Group 13: Preparation & structure of Diborane, Borazine and (BN)_x Group14: Preparation, classification and uses of silicones and Silanes. Group 15: Preparation & structure of Phosphonitric Chloride P₃N₃Cl₆

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. Pseudohalogens,

UNIT-III Chemistry of d-block elements: 9 h

Characteristics of d-block elements with special reference to electronic configuration, variable valence, colour, 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, colour, magnetic properties.

Separation of lathanides by ion exchange method.

Chemistry of actinides - electronic configuration, oxidation states, actinide contraction, comparison of lanthanides and actinides.

Unit – V Radioactivity 9 h

Definition, Isotopes, n/p ratio, binding energy, types of radioactivity, Soddy-Fajan's displacement law, Law of Radioactivity, Radioactive decay series, Nuclear Reactions- fission and fusion, Applications of radioactivity.

List of Reference books:

1. Basic Inorganic Chemistry by Cotton and Wilkinson
2. Advance Inorganic chemistry vol-I by Satya Prakash
3. Inorganic chemistry by Puri and Sharma
4. Concise Inorganic Chemistry by J D Lee
5. Nuclear Chemistry by Maheshwar Sharon, 2009

II -SEMESTER

Course Code 4: INORGANIC CHEMISTRY- I

Credits: 01

Course outcomes:

At the end of the course, the student will be able to:

1. Understand the basic concepts of inorganic preparations.
2. Use glassware, equipment and chemicals and follow experimental procedures in the laboratory
3. Apply the properties of various elements for the preparation of inorganic compounds.

Syllabus:

Preparation of Inorganic compounds:

4. Crystallization of compounds and determination of melting point.
5. Preparation of Cuprous chloride.
6. Preparation of Potash Alum.
7. Preparation of Chrome Alum.
8. Preparation of Ferrous oxalate
9. Preparation of Ferrous ammonium sulphate.

Co-curricular activities and Assessment Methods

10. Continuous Evaluation: Monitoring the progress of student's learning
11. Class Tests, Worksheets and Quizzes
12. Presentations, Projects and Assignments and Group Discussions:
Enhances critical thinking skills and personality
13. SEMESTER -End Examination: critical indicator of student's learning
and teaching methods adopted by teachers throughout the
SEMESTER .

Reference books:

1. Vogel's Quantitative Inorganic Analysis, Seventh edition, Pearson.