

BS (4 Years) for Affiliated Colleges



Code	Subject Title	Cr. Hrs	Semester
CHEM-406	Inorganic Chemistry (Sp. Theory-I)	4	VII
Year	Discipline		
4	Chemistry		

SYLLABUS OUTLINE:

1. Stereochemistry and bonding in main group compounds:

Introduction, directed valence theory, three center bond model, correlation diagram approach, some qualitative failures of the simple theories criticism and comparison of simple models, $d\pi-P\pi$ bonds.

2. Periodicity:

First and second row anomalies. The use of d-orbitals by non-metals, reactivity and d-orbital participation. The use of p-orbitals in π -bonding, periodic anomalies of the non-metals and post-transition metals.

3. Organic Reagents used in Inorganic Analysis:

Classification of organic reagents, their selectivity and specificity, methods of preparation of specific compounds and their studies with UV, Visible and IR. Typical reagents used in complexometric titrations involving the use of EDTA. Chelates, classification, stability, preparation and properties. Role of organic Reagents in different analytical techniques.

RECOMMENDED BOOKS:

1. Organotransition metal Chemistry by Akin Yamamoto, 1996, A. Wiley Interscience Publication London.
2. Hand Book of Organic reagents in Inorganic Analysis by ZAVIX Holzbecher and other 1976 Ellis Hurwod Limited, London.
3. Structural Inorganic Chemistry by Wells, A.F. 1975, Charenden Press, London.
4. Stereochemistry and bonding in Inorganic Chemistry by by J.E. Ferguson 1974, Prentice Hall, New Jersey.
5. J H Huheey, Inorganic Chemistry - Principles, structure and reactivity, Harper and Row Publisher, Inc. New York (2008)
6. Cullen Dolphin and James, Biological aspects of Inorganic Chemistry, 2005.
7. Williams, An Introduction to Bioinorganic Chemistry, 2003.