

B.Sc. Forensic Science; Semester-II	
FST 203: Chemistry-II	
Teaching Scheme	Examination Scheme
Lectures: 3 hrs/Week	Class Test - 12 Marks
Tutorials: 1 hr/Week	Teachers Assessment - 6 Marks
Credits: 4	Attendance - 12 Marks
	End Semester Exam - 70 marks

Course Objective:

- On the completion of this course the students will be able to understand the properties of transition elements.
- The student will be able to describe and understand the characteristics of the periodic table, metal complexes, bioinorganic chemistry, and organometallic chemistry.

Unit 1: Magnetic Properties of Transition Metal Complexes

Types of magnetic behavior, methods of determining magnetic susceptibility, L-S and J-J coupling, orbital contribution to magnetic moments. Correlation of magnetic moment data and stereochemistry of Co(II) and Ni(II) complexes; anomalous magnetic moments.

Unit 2: Electronic Spectra of Transition Metal Complexes

Types of electronic transitions, selection rule for dd transitions, spectroscopic ground states. Explanation of electronic spectra on the basis of Orgel energy level diagrams for d1, d4, d6 and d9 states.

Unit 3: Chemistry of f-block Elements

Comparative study of actinide elements with respect to electronic configuration, atomic and ionic radii, oxidation states and complex formation; occurrence and principles of separation. General features and chemistry of actinides, principles of separation of Np, Pu and Am from U. Trans-Uranium elements.

Unit 4: Bioinorganic Chemistry

Essential and trace element in biological process, oxygen transport with reference to hemoglobin; synthetic models of O₂ carriers., Biological role of alkali metals ions. Vitamin B-12

Unit 5: Organometallic Chemistry

Definition, nomenclature and classification of organometallic compounds. Preparation, properties, bonding and applications of alkyl and aryls of Li, Al, Hg, Sn, Ti. A brief account of metal-ethylene complexes and homogeneous hydrogenation



Head

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