

SEMESTE R-III
Paper S-3043-A
Coordination Chemistry

Time: 3 Hrs.

M.M. 75 marks

Note: The paper will be divided into two sections.

Section-A One question with 10 parts (short answer word limit 20) spread over whole syllabus. Each part will be of 1 mark and candidate is required to attempt all the ten parts

Total 10 marks

Section-B Five questions (answer not exceeding 500 words) are from each Unit with internal choice will be asked and the candidate is required to attempt all five questions. Each question will be of 13 marks **Total 65 marks**

UNIT-I

Isomerism of Coordination Compounds: Isomersms and stereochemistry, Classification of isomers. Study of constitutional and configurational isomerism.

UNIT-II

Optical activity of coordination compounds, symmetry requirements for optical activity, study of ORD, circular dichroism, cotton effect with special reference to complexes of Cr, Co, Ni and Pt .

UNIT-III

Magnetic properties of coordination compounds, paramagnetism, ferromagnetism and anti-ferromagnetism, effect of temperature, measurements of magnetic susceptibility.

UNIT-IV

Inorganic Photochemistry- Ligand field excited state, charge transfer excited state, ligand to metal, metal to ligand, charge transfer to solvent, tetraligand state, metal to metal state, thexi state and DOSENCO state.

Photochemical reactions of coordination compounds- Chromium (III) complex, Cobalt (III) complexes, Radium (III) complexes, complex of transition elements.

UNIT-V

Mixed ligand complexes: Stabilities of ternary complexes, Dyna—of formation of terneryu complexes Reaction of coordinated ligand in ternary complexes.

Books Recommended :

1. Principle and Applications of Organotransition Metal Chemsitry, J.P. Coliman, L.S Hedsdus, J.R. Norton and R.G. Finke, University Science Books.
2. The Organometallic Chemistry of the Transition Metals, R.H. Crabtree, John Wiley.
3. Metallo-Organic Chemistry, A.J. Pearson, Wiley
4. Principles of Bioinorganic Chemistry, S.J. Lippard and J.M. Berg, University Science Books

5. Bioinorganic Chemistry, I. Bertini, H.B. Gray, S.J. Lippard and J.S Valentine, University, Science Books
6. Inorganic Biochemistry Vols I and II. Ed G.L. Eichhorn, Elsevier
Progress in Inorganic Chemistry, Vols 18 and 38 Ed. J.J. Lippard