

Paper-VI CHN-405
Laboratory Course-I
270 Hours (18 Hours/week)

Inorganic Chemistry

I Preparations (Minimum 5)

Preparation of selected inorganic compounds and their studies by I.R., electronic spectra, Mossbaure, E.S.R. and magnetic susceptibility measurements. Handling of air and moistuer sensitive compounds.

- (1) cis-K[Cr(C₂O₄)₂(H₂O)₂]
- (2) Na[Cr(NH₃)₂(SCN)₄]
- (3) Mn(acac)₃
- (4) K₃[Fe(C₂O₄)₃]
- (5) [Co(NH₃)₆][Co(NO₂)₆]
- (6) Hg[Co(SCN)₄]
- (7) [Ni(NH₃)₆]Cl₂

II Qualitative Analysis (A mixture containing total six radicals) (Minimum 4)

- (a) Less common metal ions – TI, Mo, W, Ti, Zr, Th, V, U (one metal ion in cationic/ anionic form)
- (b) Insoluble – oxides, sulphates and halides

III Chromatography (Separation of cations and anions)

Paper Chromatography

Organic Chemistry

I Qualitative Analysis (Minimum 4)

Mixture of 3 compounds – liquid mixture to be separated by distillation only
(only all solids or all liquids)

II Organic Synthesis (Minimum 3)

Acetylation : Acetylation of cholesterol and separation of cholesteryl acetate by column chromatography

Oxidation : Adipic acid by chromic acid oxidation of cyclohexanol

Grignard reaction : Synthesis of triphenylmethanol from benzoic acid

Aldol condensation : Dibenzal acetone from benzaldehyde

The products may be characterized by spectral techniques.