

## PRACTICALS

### INORGANIC CHEMISTRY

1. Inorganic preparations in aqueous and organic medium:
  - (i) Preparation and complete analysis of  $K_3[Fe(C_2O_4)_3] \cdot 3H_2O$
  - (ii) Preparation and separation of **cis** and **trans** –  $[Co(en)_2Cl_2]^+$
  - (iii) Preparation of  $CuCl_2 \cdot 2DMSO$  and Copper glycine complex.
  - (iv) Preparation of  $Ph_3P$  and its complexes.
  - (v) Preparation and reactions of ferrocene.
2. Colorimetric and Spectrophotometric analysis : Determination of iron, copper, ammonium, phosphate, fluoride and nitrite ions.
3. Seminar.

### ORGANIC CHEMISTRY

1. Identification of organic compounds by analysis of their spectral data (UV, IR,  $^1H$  &  $^{13}C$  NMR and Mass Spectroscopy)
2. Submission of Seminar report on a given topic followed by its presentation & viva-voce examination.

### PHYSICAL CHEMISTRY

#### Conductance Experiments:

1. Find out equivalent conductance of a given strong electrolyte at infinite dilution and at given temperature by conductance measurements.
2. Find out strength of a given acid or base by conductometric titration.
3. Study hydrolysis of aniline hydrochloride by conductance method.
4. Determine solubility of a given sparingly soluble salt at given temperature by conductance method.
5. Determine basicity of a given acid by conductance method.

#### E.M.F. Experiments:

6. Determine the pH values for given buffer systems using quinhydrone electrode.
7. Titrate given mixed acids pH-metrically and find out their strengths.
8. Find out pK values of given mineral acids pH-metrically.

#### Electronic Experiments:

9. Measure the resistance of the given ammeter.
10. Measure the given resistances with the help of multimeter and verify the relation  $[R = R_1 + R_2 + R_3 + R_4$  (joined in series)] and  $[1/R = 1/R_1 + 1/R_2 + 1/R_3 + 1/R_4$  (joined in parallel)].
9. Verify the law of series and parallel combination of resistances using meter bridge.
10. Study the voltage – current characteristics of a p-n junction diode.

**N.B.:** Seminar, Lectures will be held in Semester – IV.