

B. Sc. (Hons.) Part II

Section A : *Quantitative Analysis (Physical and Volumetric)*

Marks : 25

1. Critical Solution Temperature.
2. Effect of impurity on Critical Solution Temperature.
3. Distribution of solute in two immisible solvents (without association).
4. Distribution of solute in two immisible solvents (with association in one solvent).
5. Determination of pH of a given buffer.
6. Coagulation of a sol.
7. Determination of Surface Tension of liquids.
8. Determination of viscosity coefficients of liquids.
9. Complexometric titrations : Zn^{2+} , Mg^{2+} , Ca^{2+} , Fe^{2+} with EDTA; Hardness of water.
10. Iodimetric titration.

Section B : *Qualitative Analysis & Preparation (Organic and Inorganic)*

Marks : 25

1. Organic :

(a) Preparation of following compounds :

- (i) m-dinitrobenzene
- (ii) Acetanilide
- (iii) Tribromophenol
- (iv) Sulphanilic acid
- (v) Oxidation of primary alcohols-Benzoic acid from benzylalcohol

(b) Identification of simple organic compounds (derivatives not included)

2. Inorganic :

Preparation of following complexes :

- (i) Potassium trioxalato chromate(III)
- (ii) $CoHg(SCN)_4$
- (iii) Cu(I) thiourea complex
- (iv) Double salts (Chrome alum/ Mohr's salt)
- (v) Bis (2, 4-pentanedionate) zinc hydrate

Note : Experiments may be added/deleted subject to availability of time and facilities.
