COURSE XII BSCCH 304 LABORATORY COURSES III

(Inorganic, Organic and Physical)

Inorganic Chemistry

Unit 1: Introduction Lab Techniques: Inorganic Chemistry

1.1 Objectives

1.2 Introduction

Unit 2: Synthesis and Analysis (Any two)

2.1 Preparation of Sodium trioxilato ferrate (III), Na3 [C2O4] SO4 and determination of its composition by permaganometery.

2.2 Preparation of Ni-DMG complex, $[Ni(DMG)_2]$.

2.3 Preparation of copper tetraamine complex $[Cu(NH_3)_4]SO_4$.

2.4 Preparation of cis and trans-bioxilato diaque chromate (III) ion.

Unit 3: Solvent Extraction

• Separation and estimation of Mg (II) and Zn (II)

Organic Chemistry.

Unit 4: Qualitative Analysis

• Analysis of an organic mixture containing two solid components using water, $NaHCO_3$, NaOH for separation and preparation of suitable derivatives.

Unit 5: Synthesis of Organic Compounds (Any two)

5.1 Acetylation of salicylic acid, aniline, glucose and hydroquinine. Benzoylation of aniline and phenol.

5.2 Preparation of idoform from ethanol and acetone.

5.3 Nitration- Preparation of p – bromoacetanilide and Preparation of 2,4,6 – tribromophenol.

5.4 Preparation of benzoic acid from toluene.

5.5 Preparation of aniline from nitrobenzene.

5.6 Preparation of m- nitroaniline from m- dinitrobenzene.

Physical Chemistry

Unit 6: Molecular weight determination

6.1 Determination of molecular weight of a non-volatile solute by Rast method/ Backmann freezing point method.

6.2 Determination of the apparent degree of dissociation of an electrolyte (e.g. NaCl) in aqueous solution at different concentrations by ebullioscopy.

Unit 7: Electrochemistry

7.1 To determine the strength of the given acid conductometrically using standard alkali solution.

7.2 To study the saponification of ethyl acetate conductometrically.

7.3 To determination the ionization constant of weak acid conductometrically.