(w.e.f. session 2017-2018)

Practical

Class: B.Sc. Semester III

Subject :Chemistry(BSC302P)

M.M. 50

Inorgnic Chemistry 1

1. Calibration of the fractional weights, pipettes and burettes.
2. Preparation of standard solutions. Dilution of 0.1 M to 0.01 M Solutions.

Quantitative analysis - Volumetric analysis.

(a) Determination of acetic acid in commercial vinegar using NaOH.

(b) Determination of alkali content- antacid tablet using HCl.

(c) Estimation of calcium content in chalk as calcium oxalate by permagnatometry. (d) Estimation of hardness of water by EDTA.

Complex Compound Preparation:

1. Diaquabis(methyl acetoacetato) nickel(II)
2. Diaquabis (nethyl acetoacetato) cobalt (II)
3. Bis(methl acetoacetato) copper (II) monohydrate
4. Potassium chlorochromate (IV)
5. Tetraamminecopper(II) sulphate monohydrate
6. Hexaamminenickel(II) chloride

Organic Chemistry Laboratory Techniques **18 marks**

A. Thin layer chromatography

Determination of R_f values and identification of organic compounds.

(a) Separation of green leaf pigments (spinach leaves may be used)

(b) Preparation and separation of 2, 4- dinitrophenylhydrazones of acetone, 2-butanone, hexane-2 and 3-one using toluene and light petroleum (40:6).

(c) Separation of a mixture of dyes using cyclohexane and ethylacetate. (8:5:1.5).

B. Paper chromatography : Ascending and Circular

Determination of R_f values and identification of organic compounds.

(a) Separation of a mixture of phenylalanine and glycine, alanine and aspartic acid. Spray reagent ninhydrin.

(b) Separation of mixture of DL-alanine, glycine and L-lucine using n-butanol: acetic acid : water (4:1:5). Spray reagent ninydrin.

(c) Separation of monosaccharides- a mixture of D-galactose and D-fructose using n-butanol : acetone : water (4:1:5). Spray reagent-aniline hyddrogen pthalate.

Viva **6 marks**

Sessional **8 marks**

(w.e.f. session 2017-2018)

Practical

Class : B.Sc. Semester IV
Subject : Chemistry (BSC402P)
Paper : Practical

M.M. 50

Organic Chemistry **12 Marks**

Qualitative analysis

Identification of an organic compound through the functional group analysis, determination of melting point and preparation of suitable derivatives.

Physical Chemistry **12 Marks**

A.Transition temperature

1. Determination of transition temperature of given substance by theromometric, dialometric method (e.g.) ($MnCl_2$, $4H_2O$/$SrBr_2$, $2H_2O$)

B.Phase equilbrium

1. To study the effect of solute (e.g. NaCl, succinic acid) on the critical solution temperature of two partially miscible liquid (e.g., phenol water system).
2. To construct the phase diagram of two component (e.g., diphenylamine benzopheone) by cooling curve method.

C.Thermochemistry

1. To determine the enthalpy of neutralization of weak acid/weak base versus strong acid/strong base and determine the enthalpy of ionization of the weak acid/base.

Inorganic chemistry-Quantitative Volumetric Analysis **12 Marks**

1. Estimation of ferrous and ferric by dichromate method.
2. Estimation of copper using thiosulphate.

Viva **6 Marks**
Record **8 Marks**