

## BS23MJ1CH2

### **B. Sc. Semester –I Chemistry Practical (Major -2)**

#### **(a) Volumetric Analysis (Acid and Base):**

Preparation of standard solution of Succinic Acid, Oxalic Acid (Hydrous & Anhydrous)

- (1) Succinic Acid/Oxalic Acid  $\rightarrow$  NaOH
- (2) Succinic Acid/Oxalic Acid  $\rightarrow$  KOH
- (3) Oxalic Acid (Hydrated & Anhydrous)-----  $\rightarrow$  NaOH
- (4) Oxalic Acid (Hydrated & Anhydrous)  $\rightarrow$  KOH
- (5) Determination of the amount of calcium carbonate in chalk using standard HCl and NaOH solutions (back-titration)

#### **(b) Inorganic Qualitative Analysis (Two Radicals) (Minimum Ten Salts)** Water Soluble and Insoluble Inorganic salts of following

cations and anions: (All  $\text{PO}_4^{-3}$  Soluble)

**Cations:**  $\text{Na}^+$ ,  $\text{K}^+$ ,  $\text{NH}_4^+$ ,  $\text{Mg}^{+2}$ ,  $\text{Ba}^{+2}$ ,  $\text{Ca}^{+2}$ ,  $\text{Sr}^{+2}$ ,  $\text{Fe}^{+2}$ ,  $\text{Fe}^{+3}$ ,  $\text{Al}^{+3}$ ,  $\text{Cr}^{+3}$ ,

$\text{Zn}^{+2}$ ,  $\text{Mn}^{+2}$ ,  $\text{Co}^{+2}$ ,  $\text{Pb}^{+2}$ ,  $\text{Cu}^{+2}$

**Anions:**  $\text{S}^{-2}$ ,  $\text{SO}_4^{-2}$ ,  $\text{CO}_3^{-2}$ ,  $\text{PO}_4^{-3}$ ,  $\text{CrO}_4^{-2}$ ,  $\text{NO}_3^{-2}$ ,  $\text{Cl}^{-1}$ ,  $\text{Br}^{-1}$ ,  $\text{I}^{-1}$ ,  $\text{O}_2^{-2}$

#### **Reference Books**

1. 'Vogel's Textbook of Macro and Semi Micro Qualitative Inorganic Analysis', Orient Longman Ltd. 5<sup>th</sup> Ed.
2. 'Vogel's Textbook of Quantitative Chemical analysis' Revised by G. H. Jeffery, J. Bassett, J. Mendham & R. C. Denney, ELBS (English Language Book Society) Longman. 5<sup>th</sup> Ed.
3. 'Analytical Chemistry' by Dhruba Charan Dash, PHI Learning Private Ltd, New Delhi, 2011.
4. 'Analytical Chemistry' by Gary D. Christian, 4<sup>th</sup> Ed., John Wiley & Sons.
5. 'Advanced Practical Inorganic Chemistry' by Gurdeep Raj, Goel Publishing House, Meerut, 9<sup>th</sup> Ed.