

Veer-Narmad South Gujarat University , Surat

B.Sc.

Chemistry Practical  
C.B.C.S. (Semester-IV)

60 Marks (External)

30 Marks (Internal)

Uni. Exam. 2 days

**INORGANIC QUALITATIVE ANALYSIS**

**LIST OF INORGANIC CHEMICALS USED FOR INORGANIC QUALITATIVE ANALYSIS**

CHLORIDES -  $\text{Bi}^{+3}$ ,  $\text{Cu}^{+2}$ ,  $\text{Cd}^{+2}$ ,  $\text{Fe}^{+3}$ ,  $\text{Mn}^{+2}$ ,  $\text{Co}^{+2}$ ,  $\text{Ni}^{+2}$ ,  $\text{Ca}^{+2}$ ,  $\text{Ba}^{+2}$ ,  $\text{Sr}^{+2}$ ,  $\text{Na}^{+1}$ ,  $\text{K}^{+1}$ ,  $\text{NH}_4^{+1}$ .

BROMIDES -  $\text{Sr}^{+2}$ ,  $\text{Na}^{+1}$ ,  $\text{K}^{+1}$ ,  $\text{NH}_4^{+1}$

IODIDE -  $\text{K}^{+1}$

NITRITE -  $\text{Na}^{+1}$ ,  $\text{K}^{+1}$

NITRATE -  $\text{Pb}^{+2}$ ,  $\text{Bi}^{+3}$ ,  $\text{Co}^{+2}$ ,  $\text{Ni}^{+2}$ ,  $\text{Ba}^{+2}$ ,  $\text{Sr}^{+2}$ ,  $\text{Na}^{+1}$ ,  $\text{K}^{+1}$ ,  $\text{NH}_4^{+1}$

SULPHITE -  $\text{Na}^{+1}$

SULPHIDE -  $\text{Zn}^{+2}$ ,  $\text{Sb}^{+3}$

SULPHATE -  $\text{Cu}^{+2}$ ,  $\text{Cd}^{+2}$ ,  $\text{Al}^{+3}$ ,  $\text{Fe}^{+2}$ ,  $\text{Zn}^{+2}$ ,  $\text{Mn}^{+2}$ ,  $\text{Co}^{+2}$ ,  $\text{Ni}^{+2}$ ,  $\text{Mg}^{+2}$ ,  $\text{Na}^{+1}$ ,  $\text{K}^{+1}$ ,  $\text{NH}_4^{+1}$

CARBONATE -  $\text{Pb}^{+2}$ ,  $\text{Bi}^{+3}$ ,  $\text{Cu}^{+2}$ ,  $\text{Zn}^{+2}$ ,  $\text{Mn}^{+2}$ ,  $\text{Co}^{+2}$ ,  $\text{Ni}^{+2}$ ,  $\text{Ca}^{+2}$ ,  $\text{Ba}^{+2}$ ,  $\text{Sr}^{+2}$ ,  $\text{Mg}^{+2}$ ,  $\text{Na}^{+1}$ ,  $\text{K}^{+1}$ ,  $\text{NH}_4^{+1}$

PHOSPHATE -  $\text{Cu}^{+2}$ ,  $\text{Al}^{+3}$ ,  $\text{Fe}^{+3}$ ,  $\text{Zn}^{+2}$ ,  $\text{Mn}^{+2}$ ,  $\text{Co}^{+2}$ ,  $\text{Ni}^{+2}$ ,  $\text{Ca}^{+2}$ ,  $\text{Ba}^{+2}$ ,  $\text{Sr}^{+2}$ ,  $\text{Mg}^{+2}$ ,  $\text{Na}^{+1}$ ,  $\text{K}^{+1}$ ,  $\text{NH}_4^{+1}$

OXIDE -  $\text{As}^{+3}$ ,  $\text{Sb}^{+3}$

Inorganic qualitative analysis of mixture containing **four radicals**. The mixture may be soluble in water or dilute hydrochloric acid or concentrated hydrochloric acid excluding Arsenite, Aresnate, Chromate and Borate.

**N.B. Candidate should perform the analysis of at least 8 mixtures.**

**The following exercises should not be asked in the university examination :**

1. Calibration of Burette 50 ml., Pipette 5 ml. & 25 ml., Measuring Flasks 100 ml. & 250 ml.

## **ORGANIC ESTIMATIONS (Any 2 estimations should be done)**

To determine the amount of Acetamide in the given solution - NaOH

To determine the amount of Glucose in the given solution by hypoiodite

To determine the amount of Aniline in the given solution - bromination

To determine the amount of Phenol in the given solution bromination

## **Type of Organic Mixture**

Determination of type of organic solid binary mixture (water insoluble) with separation. [ A+P, A+B, A+N, P+B, P+N, B+N ]

## **PHYSICAL PRACTICALS : (Any three)**

### **1 Heat of Solution :**

To determine the Heat of solution of organic acid (benzoic acid, phthalic acid) by finding the solubility of the acid at two different temp.

### **2. Partition Coefficient :**

To determine the molecular condition of Benzoic acid in its solution in Kerosene/Benzene by the method of partition coefficient.

### **3. Relative Strength**

To determine the relative strength of  $\text{H}_2\text{SO}_4$  and HCl acids.

### **4. pH metry :**

To determine the normality of weak acid pH metrically using strong base.

### **5 Surface Tension :**

Determine the parachor of  $-\text{CH}_2$  group of Liquid : [Benzene, Toluene, Xylene]