Veer-Narmad South Gujarat University , Surat
B.Sc.
Chemistry Practical
C.B.C.S. (Semester-IV)

60 Marks (External) **Uni. Exam. 2 days**
30 Marks (Internal)

INORGANIC QUALITATIVE ANALYSIS

LIST OF INORGANIC CHEMICALS USED FOR INORGANIC QUALITATIVE ANALYSIS

CHLORIDES - Bi^{+3}, Cu^{+2}, Cd^{+2}, Fe^{+3}, Mn^{+2}, Co^{+2}, Ni^{+2}, Ca^{+2}, Ba^{+2}, Sr^{+2}, Na^{+1}, K^{+1}, NH_4^{+1}.

BROMIDES - Sr^{+2}, Na^{+1}, K^{+1}, NH_4^{+1}

IODIDE - K^{+1}

NITRITE - Na^{+1}, K^{+1}

NITRATE - Pb^{+2}, Bi^{+3}, Co^{+2}, Ni^{+2}, Ba^{+2}, Sr^{+2}, Na^{+1}, K^{+1}, NH_4^{+1}

SULPHITE - Na^{+1}

SULPHIDE - Zn^{+2}, Sb^{+3}

SULPHATE - Cu^{+2}, Cd^{+2}, Al^{+3}, Fe^{+2}, Zn^{+2}, Mn^{+2}, Co^{+2}, Ni^{+2}, Mg^{+2}, Na^{+1}, K^{+} NH_4^{+1}

CARBONATE - Pb^{+2}, Bi^{+3}, Cu^{+2}, Zn^{+2}, Mn^{+2}, Co^{+2}, Ni^{+2}, Ca^{+2}, Ba^{+2}, Sr^{+2}, Mg^{+2}, Na^{+1}, K^{+1}, NH_4^{+1}

PHOSPHATE - Cu^{+2}, Al^{+3}, Fe^{+3}, Zn^{+2}, Mn^{+2}, Co^{+2}, Ni^{+2}, Ca^{+2}, Ba^{+2}, Sr^{+2}, Mg^{+2}, Na^{+1}, K^{+1}, NH_4^{+1}

OXIDE - As^{+3}, 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 <u>at least 8</u> 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 3 estimations shold 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

ORGANIC PREPARATIONS : (Minimum 3 should be done)

1. Anthraquinone from Anthracene
2. m –dinitro benzene from Benzene
3. p-Bromo acetanilide from Acetanilide
4. Benzoic acid from Benzamide
5. Glucosazone from Glucose
6. Salicylic acid from Salol
7. Naphthalene picrate from Naphthalene

PHYSICAL PRACTICALS :

1.pH metry :

To determine the normality of given acid in (HAc + HCl) pH metrically using strong base.

2.Conductometric Titration :

To determine the normality of the given mixture (HCl + HAc) solution by the conductometric titration with the given 0·1N NaOH solution.

3.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.

4.Surface Tension :

Determine the parachor of $-CH_2$ group of Liquid : [Benzene, Toluene, Xylene]

5.Partition Coefficient :

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

6.Relative Strength

To determine the relative strength of H_2SO_4 and HCl acids.