M.Sc.Sem. II (Inorganic Practical)

1. Analysis of Solder and Type metal (Alloy Analysis)

2. Determine the amount of Ca^{+2} as $CaC_2O_4H_2O$ or as $CaCO_3$ in limestone

3. Estimation of Cu^{+2} as CuSCN.

4. Estimation of Iron in Iron ore.

5. Estimation of available chlorine in bleaching powder.

6. Estimation of Ca^{+2} and Pb^{+2} in Admixture.

7. Determine the amount of Fe^{+3} and Cr^{+3} Present in given Admixture.

8. Determine the percentage purity of the given sample of Manganese salt.

9.Estimation of Aluminium by back titration.

Reference Book:

1. A textbook of practical inorganic chemistry – A.I.Vogel

2. Practical Chemistry by Dr.O.P.Pandey, D.N.Bajpai, Dr.S.Giri

3.Advance inorganic analysis by Agarwal, Keemti lal

4. Qualitative Inorganic analysis – Vogel

5.Inorganic practical by Chatwal and Anand

M.Sc. - Semester – II (ORGANIC PRACTICALS)

Preparation of organic compounds : (Minimum six)

(i) Nitration : m-dinitrobenzene from Nitrobenzene
(ii) Bromination: p-bromoacetanilide from acetanilide
(iii) Reduction: m-phenylenediamine from m-dinitrobenzene
(iv) Oxidation : p-nitrobenzoic acid from p-nitrotoluene
(v) Diazotization reaction: Orange-I
(vi) Friedl-Craft's reaction: Resacetophenone from Resocinol
(vii) Cannizzaro reaction: Benzoic acid from Benzaldehyde via KOH
(viii) Aldol condensation: Chalcone from Benzaldehyde + Acetophenone (Claisen Schmidt reaction)

Quantitative Estimations: (Minimum three)

a. Estimation of ester + acid
b. Estimation of formaldehyde
c. Estimation of glycine
d. Estimation of amide + acid

References:

1. A text book of practical organic chemistry – A. I. Vogel
2. Practical organic Chemistry – Mann and Saunders
3. A handbook of quantitative and qualitative analysis – H. T. Clarke
4. Comprehensive Practical Organic Chemistry : Qualitative Analysis V K Ahluwalia& S. Dhingra.
5. Comprehensive Practical Organic Chemistry : Preparations and Quantitative Analysis V K Ahluwalia & R. Aggarwal Universities Press.
6. An Advance Course in practical Chemistry, A K. Nad, B. Mahapatra and A. Ghoshal.

SEMESTER -II

GROUP – C PHYSICAL PRACTICAL (Any Six)

1. Determine the dissociation constant and strength of borax solution pH-metrically.
2. Determine the velocity constant of the hydrolysis of ethyl acetate with sodium hydroxide at room temperature by conductance measurements.
3. Determine the solubility of silver chloride in water potentiometrically.
4. To determine the concentration of given components in a mixture colorimetrically.
5. Determine the equilibrium constant of the reaction $I^- + I_2 = I_3^-$ by distribution method.
6. Investigation the reaction between H_2O_2 and HI at two different temperatures and calculate the energy of activation for the reaction
7. Determine the formula of a complex between $Cu^{+2}$and NH_3 by distribution method.
8. Determine CST of Phenol -Water system
9. Determine CST of Phenol –NaCl system

Note: For instrumental analysis, solution should be prepared by the candidate.