

Books Recommended

1. Environmental Chemistry, S.E. Manahan, Lewis Pub.
2. Environmental Chemistry, Sharma and Kaur, Krishna Pub.
3. Environmental Chemistry, A.K. De, Wiley, Eastern.
4. Environmental Chemistry, C. Baird, W.H. Freeman
5. Concepts of Inorganic Photochemistry, A.W. Adamson and P.D Fleischauer, Wiley.
6. Photochemistry of Coordination Compounds, V. Balzani and Carassiti, Academic Press.
7. Elements of Inorganic Photochemistry, G.J. Ferraudi, Wiley.
8. Inorganic Polymers - Grahm and Stone.
9. Development in Inorganic Polymer Chemistry, M.F. Lappert and G.J. Leigh.
10. Inorganic and Organometallic Polymers, M. Zeldon, K.J. Wynne and H.R. Allcock.

M.Sc. (FINAL) CHEMISTRY, 2008-2009

PRACTICALS, GROUP-A

Duration: 18 Hrs. (Spread over three days) M.M. 200

Distribution of Marks

1. Exercise 1 is compulsory	50 Marks
2. Out of unit 2-9, three exercise would be given selecting not more than one from each unit :	25 x 3 = 75 Marks
3. Seminar	20 Marks
4. Report on Industrial Tour	15 Marks
3. Viva-voce	20 Marks
4. Sessional/Record	20 Marks
Total	200 Marks

Exercises

1. Volumetric estimation of two or three component in a mixture (cations as well as anions) from (i) Synthetic mixture (ii) Ores and minerals (iii) Alloys (iv) Water/Industrial effluent samples
2. Preparation of selected inorganic compounds and their physico-chemical studies. (atleast 15 preparations)

3. Spectrophotometric Determinations

- (i) Manganese/Chromium/Vanadium in steel sample
- (ii) Nickel/Molybdenum/Tungsten/Vanadium/Uranium by extractive spectrophotometric method.
- (iii) Fluoride/Nitrite/Phosphate.
- (iv) Iron-phenanthroline complex by Job's method of continuous variations.
- (v) Zirconium-alizarin Red-S complex by mole ratio method
- (vi) Copper-ethylenediamine complex by slope-ratio method.
- (vii) Stability constant by Bjerrum's method.
- (viii) Stability constant by Turner-Anderson method

4. Flame photometric determinations

- (i) Sodium and potassium, when present together
- (ii) Lithium/Calcium/Barium/Strontium
- (iii) Cadmium and magnesium in tap water

5. Nephelometric determinations

- (i) Sulphate
- (ii) Phosphate
- (iii) Silver

6. Chromatographic separations

- (i) Cadmium and zinc
- (ii) Zinc and magnesium
- (iii) Thin layer chromatography; Separation of nickel, manganese, cobalt and zinc, Determinations of R_f values.
- (iv) Separation and identification of the sugars present in the given mixture of glucose, fructose and sucrose by the paper chromatography and determination of R_f values

7. Solvent extraction (any one)

- a. Uranyl nitrate from thorium nitrate with the help of tributyl phosphate
- b. Separation of metal from a mixture
- c. Study of the solvent extraction of Hg and Al with 8-hydroxyquinoline.

8. Magnetochemistry (one exercise) -

Determination of magnetic susceptibility and moment by Gouy's method.

9. Polarography - Determination of cadmium, lead, etc.