



CHEMISTRY

(Minor)

(4th Semester)

Course No.:CHM-DSM-251

Practical

(Inorganic, Organic and Physical Chemistry)

Contact Hours: 45; Credits: 03

Full Marks = 100[End Semester Exam (70) Internal Assessment (30)]

Pass Marks = 40 [End Semester Exam (28) Internal Assessment(12)]

Examination Time: 12 hours (2 days)

Section-A (Inorganic Chemistry)

1. Qualitative Inorganic Analysis

25 Marks

Qualitative analysis of inorganic mixtures containing 2 anions and 2 cations without interfering radicals.

Section-B (Organic Chemistry)

2a. Systematic Qualitative Organic Analysis of Organic Compounds possessing mono-functional groups (-COOH, phenolic, aldehydic, ketonic, amide, nitro, amines). **15marks**

2b. Organic Preparation and purification:

10 marks

Organic preparation and reactions (any one)

- i) Nitration of acetanilide/ nitrobenzene/ salicylic acid
- ii) Bromination of phenol/ aniline
- iii) Oxime/ 2,4-dinitrophenylhydrazone of aldehyde/ ketone.
- iv) Benzil from benzoin
- v) Benzilic acid from benzil
- vi) Benzoylation of Phenol/ aniline
- vii) Iodoform from acetone

Purification of organic compounds

- i) Decolorization of crude sulphanilic acid (recrystallization using animal charcoal)
- ii) Recrystallization of benzoic acid from hot water/ ethanol.
- iii) Recrystallization of Acetanilide from boiling water
- iv) Purification of naphthalene/ camphor/phthalic acid (by sublimation)



Section-C (Physical Chemistry)

- 3. Any one experiment out of the following can set in examination 20Marks**
- To determine the surface tension of glycerol/acetic acid Solutions at different concentrations and construction of graph.
 - To determine the viscosity of glycerol/acetic acid Solutions at different concentrations and construction of graph.
 - pH-metric titration of strong acid vs strong base.
 - Conductometric titration of strong acid vs strong base.
 - To determine the solubility of benzoic acid at different temperature and to determine ΔH of the dissolution process.

Internal Assessment

- Viva-voce **15 Marks**
- Regularity in maintenance of Lab Note Book **5 marks**
- Attendance **10 Marks**

Reference Book

- Vogel, A. I., A Textbook of Quantitative Inorganic Analysis, ELBS. 1978
- Khosla, B. D.; Garg, V. C. & Gulati, A., Senior Practical Physical Chemistry, R. Chand & Co.: New Delhi (2011).
- Nad, A.K., Mahapatra, B., Ghoshal, A., An Advanced Course in Practical Chemistry, New Central Book Agency (P) Ltd., Kolkata, India.
- Ahluwalia, V. K. & Aggarwal, R. Comprehensive Practical Organic Chemistry, Universities Press.