CHEMISTRY

(Major)

(4th Semester)

Course No.:**CHM-DSC-253**

Practical

(Inorganic, Organic and Physical Chemistry)

Contact Hours: 60; Credits: 04

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

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

Examination Time: 18 hours (3 days)

Section-A (Inorganic Chemistry)

1. Volumetric Titration: (*any one*) **20 Marks**

i. Determination of oxalic acid using potassium permanganet solution.
ii. Determination of iron (II) using potassium permanganet solution.
iii. Determination of iron (II) using potassium dichromate solution.
iv. Determination of alkali present in soap / detergents
v. Determination of water crystalisation in Mohr's salt by titrating with permanganet solution.

Section-B (Organic Chemistry)

2(a) Organic preparation and reactions (*any one*) **15 marks**

i) Nitration of acetanilide/ nitrobenzene/ salicylic acid
ii) Bromination of phenol/ aniline
iii) Azomethyne
iv) Benzil from benzoin
v) Benzilic acid from benzil
vi) Methyl orange
vii) Iodoform

2(b). Purification of organic compounds (*any one*) **15 Marks**

i) Decolorization of crude sulphanilic acid (recrystallization using animal charcoal)

ii) Recrystallization of benzoic acid from hot water/ ethanol.
iii) Acetanilide from boiling water
iv) Naphthalene/ m-Dinitrobenzene from ethanol
v) Naphthalene/ camphor/phthalic acid (by sublimation)

Section-C (Physical Chemistry)

3. ***Any one experiment out of the following can set in examination*** **20 Marks**

i) To determine the solubility of benzoic acid at different temperature and to determine ΔH of the dissolution process.
ii) Preparation of Sodium acetate-acetic acid buffer of different pH.
iii) Preparation of Ammonium chloride-ammonium hydroxide buffer solutions of different pH.
iv) pH-metric titration of strong acid vs strong base.
v) Determination of Critical Solution Temperature (CST) of Phenol water system.

Internal Assessment

4. Viva-voce **15 Marks**

5. Regularity in maintenance of Lab Note Book **5 marks**

6. Attendance **10 Marks**

Reference Books:

- Vogel, A. I., A Textbook of Quantitative Inorganic Analysis, ELBS.
- Nad, A.K., Mahapatra, B., Ghoshal, A., An Advanced Course in Practical Chemistry, New Central Book Agency (P) Ltd., Kolkata, India.
- Das, Subhas C, Advanced Practical Chemistry for 3-Year Honours Course.
- Vogel, A. I., A Textbook of Qualitative Organic Analysis, ELBS.
- Khosla, B. D.; Garg, V. C. & Gulati, A., Senior Practical Physical Chemistry, R. Chand & Co.: New Delhi (2011).
- Athawale, V. D. & Mathur, P. Experimental Physical Chemistry, New Age International: New Delhi (2001).
- Jadav, J. B., Advance Physical Practical Chemistry, Goel Publishing House, New Delhi (1981)
- Ahluwalia, V. K. & Aggarwal, R. Comprehensive Practical Organic Chemistry, Universities Press.