CHEMISTRY

(Major)

(6th Semester)

Course No.:**CHM-DSC-354**

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. Qualitative Inorganic Analysis **30 Marks**

i) Qualitative analysis of mixtures containing 3 anions and 3 cations. Mixtures should preferably contain one interfering anion or insoluble component or combination of anions.

Section-B (Organic Chemistry)

2. Chromatographic separation **20 Marks**

i) Separation and identification of the monosaccharides present in the given mixture (glucose & fructose) by paper chromatography. Reporting the Rf values.

ii) Separate a mixture of o-nitrophenol and p-nitrophenol by TLC technique and identify them on the basis of their Rf values.

iii) Chromatographic separation of the active ingredients of plants, flowers and juices by TLC/ Paper chromatography.

iv) Separation of 2,4-Dinitrophenyl hydrazones of any two carbonyl compounds (e.g., benzophenone and benzyl; p-nitrobenzaldehyde and benzaldehyde) from their mixture and determination of Rf values (By Paper/ Thin layer chromatography)

v) Paper chromatographic separation and determination of Rf values of mixture of any three amino acids from their mixture (alanine, glycine and leucine or any other set). Spray reagent: Ninhydrin.

Section-C (Physical Chemistry)

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

i) Determine the rate constant of hydrolysis of methyl acetate in presence HCl.

ii) To study saponification of ethyl acetate by sodium hydroxide

iii) Conductometric titration of a mixture of strong and weak acid vs strong base.

iv) Determination of equivalent conductances of a strong electrolyte at various dilutions and verification of Onsagar equation.

v) Potentiometric titration of ferrous ammonium sulphate against standard K2Cr2O7/KMnO4 and determination of redox potential of Fe(II)- Fe(III) 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.