M.Sc. Chemistry **2019-2020**

Semester - II

19CHP212 INORGANIC CHEMISTRY PRACTICAL –II 4H 2C
(QUANTITATIVE ANALYSIS AND COMPLEX PREPARATIONS)

Instruction Hours/week:L: 0 T:0 P:4 Marks: Internal:40 External: 60 Total:100
External Semester Exam: 6 Hrs

Course Objectives

On successful completion of the course the students should have

1. Learnt about the quantitative analyses and chromatography.
2. Learnt the estimation metals in a mixture by volumetric and gravimetric analysis.

Course outcomes (CO's)

1. Learned about the volumetric and gravimetric analysis of cations and anions.

2. The communication of the results of scientific experiments in oral reports and written reports

3. Known to read and understood technical literature related to the experiments

4. Gained the knowledge about maintain high standards of professional and scientific ethics

5. Known about the chromatographic separation techniques

6. Known about the preparation of coordination complexes and their mechanisms.

Contents

Analysis of mixture of ions – volumetry and gravimetry. Any four Complexometric titration- estimation of zinc, nickel, magnesium and calcium ions using Eriochrome black-T or muroxide indicator.

Titrimetry: Oxidation using ceric and vanadium salts.
Chromatography: Column, Paper and Thin layer chromatography.
Titrations in non aqueous solvents.

Preparation, analysis and study of co-ordination complexes (any 5).

SUGGESTED READINGS

1. Lepse, P. A., & Peter, L. B. (1986). *Lab Manual for Lingren's Essentials of Chemistry*. New Delhi: Prentice Hall.
2. Mendham, J. R., Denney, C., Barnes, J. D., & Thomas, M. (2002). *Vogel's Textbook of Quantitative Chemical Analysis* (VI Edition). Singapore: Pearson Education Ltd.
3. Ramanujam, V. V. (2004). *Inorganic Semi-micro Qualitative Analysis* (III Edition). Chennai: The National Publishing Company.
4. Siddhiqui, Z. N. (2002). *Practical Industrial Chemistry* (I Edition). New Delhi: Anmol Publications Pvt. Ltd.
5. Venkateswaran, V., Veeraswamy, R., & Kulandaivelu, A. R. (2004). *Basic Principles of Practical Chemistry* (II Edition). New Delhi: S. Chand Publications.

ESE Marks Allocation

Category	**Marks**
Experiment	40
Viva-Voce	10
Record	10
Total	**60**

KARPAGAM ACADEMY OF HIGHER EDUCATION
(Deemed to be University Established Under Section 3 of UGC Act 1956)
Coimbatore – 641 021.

LECTURE PLAN

DEPARTMENT OF CHEMISTRY

Staff Name : Dr. M. Makeswari
Subject Name : Inorganic Chemistry Practical-II
Sub.Code : 19CHP212
Semester : II
Class : I M.Sc Chemistry

S.No.	Lecture Duration Period	Topics to be Covered	Support Material
1	4	**Complexometric titrations** Estimation of Zinc	R1
2	4	Estimation of Calcium	R1
3	4	Estimation of Magnesium	R1
4	4	**Analysis of mixture of ions** Estimation of Copper and Nickel in a mixture	R1
5	4	Oxidation using Ceric salts	R1
6	4	Thin layer Chromatography	R1
7	4	Preparation analysis and study of inorganic complex -I	R1
8	4	Preparation analysis and study of inorganic complex	R1
9	4	Preparation analysis and study of inorganic complex	R1
10	4	Model Practical Examination	
	Total No. of Hours Planned For Practical's = 40		

References:

R1. T.N.Srivastava, PC.Kamboj, University Practical Chemistry, Milestone publishers, New Delhi.

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