

**20CY215 INORGANIC CHEMISTRY LAB - 2**

Hours Per Week :

L	T	P	C
-	-	4	2

**COURSE DESCRIPTION AND OBJECTIVES:**

The main objectives of this course are to get skills on quantitative analysis of various inorganic compounds by volumetric and gravimetric methods.

**COURSE OUTCOMES:**

Upon completion of the course, the student will be able to achieve the following outcomes:

COs	Course Outcomes
1.	Perform the qualitative analysis of various inorganic compound mixtures including less familiar cations and interfering anions.
2.	Synthesize various inorganic metal complexes and record their percentage of yields.
3.	Characterize various inorganic metal complexes and analyse them using required spectroscopic techniques.

**Qualitative Analysis:**

Qualitative analysis of an inorganic mixture containing three cations (one less familiar cation) and three anions (one interfering anion)

**Less familiar cations:** Tl, Mo, Th, Zr, V and U.

**Interfering anions:** Oxalate, tartrate, phosphate and chromate.

**Preparations of Inorganic complexes and Characterization by spectral techniques (UV – visible, TGA and IR):**

1. Hexaamine Cobalt(III) chloride.
2. Tris – Thiourea copper(I)Sulphate
3. Cis - Potassium di aqua bis oxalato Chromate(III)
4. Potassium tris oxalato Ferrate(III).
5. Estimation of metal ions from the above complexes using TGA and UV-vis
6. Determination of stoichiometry of metal complex by spectrophotometry

**Test Books**

1. Vogel's qualitative inorganic analysis, by Svehla, G. Publisher: Harlow : Longman, 1996. 4.
2. Vogel's textbook of quantitative inorganic analysis: including elementary instrumental analysis. By: Arthur Israel Vogel; John Bassett Publisher: London; New York: Longman, 1978.