



# ARSD College, University of Delhi

## Lesson Plan

Course Name : B.Sc. (Hons) Lab						
Semester	Course Code	Course Title	Lecture (L)	Tutorial (T)	Practical (P)	Credit (C)
III	32171301	Inorganic Chemistry II			8	2
Teacher/Instructor(s)		Dr. Anil Kumar and Dr. Neeta Azad				
Session		Odd Semester (August -December-2022)				

### Course objective:

The objective of this paper is to develop basic understanding of the different types of volumetric titration such as complexometric titration, iodometric titration and preparation of different type of inorganic compounds. Volumetric analysis is a quantitative analytical method which is used widely. As the name suggests, this method involves measurement of the volume of a solution whose concentration is known and applied to determine the concentration of the analyte. In other words, measuring the volume of a second substance that combines with the first in known proportions is known as Volumetric analysis or titration. It is this method of quantitative analysis that allows us to determine the concentration of the analyte. Second part to synthesis of inorganic compounds such as double salt and mixed inorganic salt.

### Outcome of the course:

- ❖ An unknown number of chemicals must be present in the solution which needs to be examined.
- ❖ To show the end-point, a reagent with an unknown concentration reacts with the chemical of an unknown amount in the presence of an indicator. The end-point is the point at which the reaction is finished.
- ❖ The reaction between the solution and the reagent is completed by titration which is used to measure the volumes.
- ❖ The amount of reagent and solution is shown by the volume and concentration of reagent used in the titration.
- ❖ The mole-fraction of the equation determines the amount of an unknown chemical in the specific volume of solution.
- ❖ Synthesis of Different inorganic compounds

**List of Experiments:**

<b>Details of the Lab Course</b>		
<b>Session</b>	<b>Name of Experiment</b>	<b>Contact Hours</b>
1	<b>Experiment 1:</b> Estimation of Cu (II) and K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> using sodium thiosulphate solution (Iodometrically).	4
2	<b>Experiment 2:</b> Estimation of antimony in tartar-emetie iodimetrically	4
3	<b>Experiment 3:</b> Estimation of Zn <sup>2+</sup> using disodium salt of EDTA by complexometric titration	4
4	<b>Experiment 4:</b> Estimation of Mg <sup>2+</sup> using disodium salt of EDTA by complexometric titration	4
5	<b>Experiment 5:</b> Estimation of Ca <sup>2+</sup> using disodium salt of EDTA by substitution method	4
6	<b>Experiment 6:</b> Inorganic preparations (i) Cuprous Chloride, Cu <sub>2</sub> Cl <sub>2</sub>	4
7	<b>Experiment 7:</b> Manganese (III) phosphate, MnPO <sub>4</sub> .H <sub>2</sub> O	4
8	<b>Experiment 8:</b> Aluminium potassium sulphate KAl(SO <sub>4</sub> ) <sub>2</sub> .12H <sub>2</sub> O (Potash alum) or Chrome alum.	4
9	Mock test	4
<b>Total</b>		<b>36</b>

**Suggested Books:**

<b>Sl. No.</b>	<b>Name of Authors/Books/Publishers</b>	<b>Year of Publication/Reprint</b>
1.	Vogel, A.I. A Textbook of Quantitative Inorganic Analysis, ELBS.	2012
2.	Marr, G. and Rockett, R.W. Practical Inorganic Chemistry, Van Nostrand Reinhold.	2015
3.	Shikha gulati, JL Sharma, Shagun mancha: Practical Inorganic Chemistry	2017

**Evaluation Scheme:**

<b>No.</b>	<b>Component</b>	<b>Duration</b>	<b>Marks</b>
1.	Internal Assessment		25
	❖ Quiz/Viva		
	❖ Observation & Record		
	❖ Attendance		
2.	❖ Model Exam	5 hr	25
	End Semester Examination		



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