



GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY

ENGINEERING CHEMISTRY LAB

Course Code: GR15A1030
I Year I Semester

L:0 T:0 P:2 C:2

Prerequisites: Fundamentals in Engineering Chemistry Laboratory

Course Objectives: This Engineering Chemistry Laboratory is common to first year branches of UG Engineering. At the end of the course the student is expected to

- Provide the students with a solid foundation in Chemistry laboratory required to solve engineering problems.
- Practical implementation of fundamental concepts.

Course Outcomes: At the end of the course

- Students are able to estimate the impurities present in water..
- Ability to select lubricants for various purposes.
- Ability to prepare advanced polymer materials.
- Ability to know the strength of an acid present in secondary batteries.
- Ability to find the Fe+2, Ca & Cl- present in unknown substances/ ores using titrimetric and instrumental methods.

List Of Experiments

1. Estimation of Total Hardness in sample water by complexometry
2. Estimation of percentage available chlorine in Bleaching Powder.
3. Estimation of Fe²⁺ by permanganometry.
4. Determination of strength of an acid by potentiometric titration method
5. Determination of strength of an acid using conductometry.
6. Determination of Strength of an acid in Pb-Acid battery titrimetric method
7. Determination of percentage of Iron in Cement sample by colorimetry..
8. Estimation of Calcium in port land cement.
9. Determination of Viscosity of the given unknown liquid by Oswald's viscometer.
10. Determination of surface tension of the given unknown liquid by stalagnometer.
11. Preparation of Thiokol rubber.
12. Determination of percentage Moisture content in a coal sample.



Reference Books

1. Laboratory Manual on Engineering Chemistry, by Dr Sudha Rani, Dhanpat Rai Publishing house.
2. A Text book on Experiments and calculations in Engineering Chemistry, by SS Dara, S Chand publications.
3. Laboratory Manual of Organic Chemistry, by Raj K Bansal, Wiley Eastern Limited, New age international limited.
4. Engineering Chemistry practical manual prepared by faculty of engineering chemistry, GRIET(A) - (for college circulation only)