Prasad V. Potluri Siddhartha Institute of Technology, Kanuru, Vijayawada.

1/4 B.Tech. FIRST SEMESTER- CIVIL

CE1L1

ENGINEERING CHEMISTRY LAB

Lecture: -- Lab: 3 periods/week

Internal assessment: 25 marks

Semester end examination: 50 marks

Course Overview:

This laboratory give practical exposure to water parameters, preparation of different standard solutions with different concentration units and qualitative analysis using volumetric titrations and also properties of lubricant oils which are useful in industries.

Course outcomes:

At the end of this course , the students will be able to

1.Gain knowledge of hardness , alkalinity, turbidity, Dissolved oxygen of Water sample, students can understand different methods of water treatment.

2.Analyze the nature of the soil from pH values the types of fertilizers and pesticides to be used cab be decided.

3.Apply the knowledge of preparation of Bakelite in industries.

4.Assess the Viscosity, flash and fire point saponification value and acid number of different lubricants , these parameters are useful in avoiding fire hazards in industries.

LIST OF EXPERIMENTS:

1. Determination of Total Hardness of water sample using EDTA.
2. Determination of Total alkalinity of water sample.
3. Determination of D.O in water.
4. Measurement of Turbidity of water sample.
5. Conductometric titration of Acid Vs Base.
6. PH of Soil and fruits.
7. Preparation of Phenol-Formaldehyde resin.
8. Determination of Corrosion rate of mild steel in the absence and presence of an inhibitor.
9. Determination of viscosity of heavy oil by RED WOOD Viscometer
10. Determination of Flash and fire point of a lubricating oil by Pensky-Martens apparatus.

11. Determination of Saponification value of Vegetable oil.
12. Determination of Acid number of a lubricant Oil.

NOTE: Any Ten practical's from chemistry lab experiments.

Learning resources

Text books:

1. Chemistry Pre-lab manual by Dr.Jayaveera, K.N. and Chandra Sekhar K.B., S.M.
Enterprizes Ltd.,2007.
2. Quantitative Inorganic Analysis by Vogels, ELBS Edition,1980.