

CHEMISTRY LABORATORY

Practicals : 3 periods / week

Sessional Marks : 40

Semester End Exam Marks : 60

Semester End Exam : 3 hrs

Credits : 2

Course Objectives :

To learn concepts of equivalent weight, molecular weight, normality, molarity, weight and volume percent and to prepare molar solutions of different compounds.

- 1) To know the methods of determining alkalinity, hardness and chloride ion content of water sample.
- 2) To know the methods to determine purity of washing soda, percentage of available chlorine in bleaching powder.
- 3) To know principles and methods involved in using instruments like conductivity bridge, spectrophotometer, pH meter and potentiometer.

Course Outcomes :

- 1) Students acquire knowledge on equivalent weight, molecular weight, normality, molarity, oxidants and reductants.
- 2) Students can prepare solutions of different concentrations.
- 3) Students can analyze water for its hardness, alkalinity, chloride ion and iron content.
- 4) Student understands the principles behind the development of the instruments suitable for chemical analysis. Later he can use the knowledge in modifying the instruments.

List of Experiments:

1. Estimation of total alkalinity of water sample.
2. Determination of purity of washing soda.
3. Estimation of Chlorides in water sample.
4. Determination of Total Hardness of water sample by EDTA method.
5. Estimation of Mohr's salt-Permanganometry.
6. Estimation of Mohr's salt –Dichrometry.
7. Determination of available chlorine in bleaching powder-Iodometry.
8. Estimation of magnesium using EDTA.
9. Conductometric titration of a strong acid vs strong base.
10. Potentiometric titrations: Ferrous vs. Dichromate.

Demonstration Experiments:

11. pH metric titrations of an acid vs base.

12. Spectrophotometry: Estimation of Mn/Fe.