IV SEMESTER

PHYSICAL CHEMISTRY PRACTICAL II (60 HOURS)

Experiments in electrochemistry, conductometry and potentiometry

Experiments given to familiarise only the interpretation of spectra provided. Interpretation of simple UV-visible spectra of simple molecules for the calculation of molecular data and identification of functional groups (5 typical spectra will be provided).

IR and NMR spectral calculations of force constant –identification and interpretation of a spectra (5 each in IR and NMR will be provided).

List of experiments for physical chemistry practical - II

Conductometric experiments:

1. Determination of cell Constant.
2. Determination of the equivalent conductance of a weak acid at different concentrations and verification of Ostwald's dilution law and calculation of the dissociation constant of the acid.
3. Determination of equivalent conductance of a strong electrolyte at different concentrations and examination of the validity of the Onsager's theory as limiting law at high dilutions.
4. Conductometric titrations of a mixture of HCl, CH_3COOH and NaOH.
5. Determination of the dissociation constant of formic acid at different dilution.
6. Determination of the strength of strong acid using strong base.
7. Determination of strength of weak acid using strong base.
8. Determination of the strength of strong acid using weak base.
9. Determination of the strength of Barium chloride using Magnesium sulphate.

Potentiometric experiments

10. Determination of strength of strong acid using strong base and weak acid against strong base
11. Determination of dissociation constant of a weak acid.
12. Determination of the strength of $FeSO_4$ using $KMnO_4$
13. Determination of strength of KI using $KMnO_4$
14. Determination of pH of a given buffer solution
15. Determination of strength of a mixture of halides using $AgNO_3$ - Precipitation titration.

PHYSICAL PRACTICAL	**Max. Marks 60**
Experiment	30 Marks
Interpretation of spectra	10 Marks
Record	10 Marks
Viva-voce	10 Marks
Total	60 Marks

REFERENCE

1. Advanced Practical Chemistry, Chatterjee, Books & Allied (P) Ltd.,

SYLLABUS DESIGNERS:

Dr. T. Gomathi, Assistant Professor, Department of Chemistry