

CH203 APPLIED CHEMISTRY – III

CREDITS: 5 (L=4,P=2)

(Pre-requisite: None)

Course Details:

Liquid state: Measurement of vapour pressure; effect of temperature on vapour pressure; Clausius-Clapeyron equation; Trouton's rule; Craft's rule. Viscosity & surface tension of liquids and their measurements.

Ionic equilibrium: Solutions of weak electrolytes; ionic equilibrium; ionization constant; precipitation; selective precipitation.

Conductometry: Measurement of conductance; specific and molar conductance; Kohlrausch's law; effect of dilution on conductance of solution. Applications of conductance measurement – solubility determination; acid – base titration.

Electrochemistry: Classification of cells; measurement of cell potential; types of reversible electrodes. Application of cell potential measurements to the determination of (i) activity coefficient of electrolyte, (ii) solubility of sparingly soluble salts. (iii) Equilibrium constant of a cell-reaction, and (iv) fugacity of a gas.

Corrosion: Mechanism and prevention of corrosion.

Colloids: Types of colloidal systems; preparation, purification, properties and applications of colloids.

Spectroscopy: UV, visible, IR and NMR spectroscopy. Basic principles underlying each technique; their applications in the structure determination of organic compounds.

Chromatography: Types of chromatographic separation; principles involved in column-chromatography; GLC; ion-exchange resins.

Reference Books:

S Glasstone and D Lewis
Elements of physical chemistry
D Van Nostrand Co

B D Khosla
Physical chemistry
R Chand & company

Gurdeep Raj
Advance physical chemistry
Goel Publishing House, Meerut

B K Sharma
Chromatography
Goel Publishing House, Meerut

Morrison and Boyd
Organic Chemistry – 6th Ed.
Prentice Hall of India