PS 1202 PHARMACEUTICAL CHEMISTRY - II
(Physical Chemistry)

1. Behavior of Gases: Kinetic theory of gases, deviation from behaviors and explanation.
2. The Liquid State: Physical properties (surface tension, parachor, viscosity, refractive index, optical rotation, dipole moments and chemical constituents).
3. Solutions: Ideal and real solutions, solutions of gases in liquids, colligative properties, partition coefficient, conductance and its measurement, Debye Huckel theory.
4. There dynamics: First, second and third laws, Zeroth law, absolute temperature scale, thermochemical equations, phase equilibria and phase rule.
5. Adsorption: Freudlich and Gibbs adsorption, isotherms, Langmuir theory of adsorption.
6. Photochemistry: Consequences of light absorption, Jablenski diagram, Lambert-Beer Law, Quantum efficiency.
7. Chemical Kincties: Zero, first and second order reactions, complex reactions, theories of reaction kinetics, characteristics of homogeneous and heterogeneous catalysis, acid base and enzyme catalysis.
8. Quantum Mechanics: Postulates of quantum mechanics, operators in quantum mechanics, the Schrodinger wave equation.

PS 1202P PHARMACEUTICAL CHEMISTRY - II (LAB)

1. To determine molar mass by Rast method and cryoscopic method.
2. To determine refractive index of given liquids and find out the contribution of carbon, hydrogen and oxygen in molar refraction of a compound.
3. To determine molar mass of volatile liquids by Victor-Meyer method.
4. To determine the specific rotation of sucrose at various concentrations and determine the intrinsic rotation.
5. To determine the heat of solution, heat of hydration and heat of neutralization.
6. To determine the cell constant, verify Ostwald dilution law and perform conductometric titration.
7. To determine rate constant of simple reaction

Recommended Books:

1. Bahl & Tuli: “Essentials of Physical Chemistry” S. Chand & Co.
2. Atkins & de Poule, “Atkins Physical Chemistry” Oxford University Press.