Gujarat Technological University

B.Pharm Semester-II

Pharmaceutical Chemistry – II
(3 hours/week; 3 credits, 45 hours)

1. **The liquid state:** **06**
   Physical properties surface tension, parachor, viscosity, refractive index, optical rotation, dipole moment of chemical constituents.
2. **Solutions:** **07**
   Ideal and real solutions, solutions of gases in liquids, colligative properties, partition co-efficient, conductance and its measurement, Debye-Huckel theory.
3. **Thermodynamics:** **08**
   Basic principles, First, Second and third laws, Zeroth Law, absolute temperature scale, thermochemical equations, phase equilibria and phase rule, One and two component systems.
4. **Adsorption:** **04**
   Basic principles, Freundlich and Gibbs adsorption isotherms, Langmuir theory of adsorption.
5. **Photochemistry:** **06**
   Basic principles, Consequence of light adsorption, Jablonski diagram, Lambert-Beer Law, Quantum efficiency.
6. **Chemical kinetics:** **10**
   Zero, first and second orders reactions, complex reaction, theories of reaction kinetics, characteristics of homogeneous and heterogeneous catalysts, acid-base enzyme catalysis.
7. **Radioactivity:** **04**
   Basic principles of Radioactivity, Radioactivity Rays and Measurements of Radioactivity, Applications.

Pharmaceutical Chemistry-II
PRACTICALS
(3 hours/week, 3 credits, 45 hours)

Experiments on surface tension and viscosity, partition coefficient, adsorption, order of reaction (First and Second), refractive index and molar refraction.

Books Recommended:

1. Text book of Physical Chemistry: Semuel Glasstone, Macmillan India Limited, 2nd Ed. 1995.
2. Elements of physical chemistry; Peter Atkins, Julio de paula, Oxford University Press, 4th Ed. 2007.