PHARMACEUTICS-II

(Physical Pharmaceutics - I)

THEORY 3 hours/week

UNIT -I

1. Matter, Properties of Matter: State of matter, properties of matter, latent heats, vapour pressure, sublimation, critical point, eutectic mixtures, relative humidity, liquid complexes, liquid crystals, glassy state, crystalline, amorphous, polymorphism, phase equilibrium and phase rule.

UNIT –II

2. Thermodynamics: Zeroth, first, second and third laws, concept on enthalpy, entropy, absolute temperature scale, Free energy function and applications, Clausius-clapeyron Equation, Van't Hoff equation.

UNIT -III

3. Solutions : Ideal and real solutions, solution of gases in liquids, colligative properties, partition coefficient, conductance and its measurement. Debye Huckel theory.

4. Buffers: Buffer equations and buffer capacity, buffers in pharmaceutical systems, preparation, buffered isotonic solutions, measurements of tonicity, calculations and methods of adjusting isotonicity.

UNIT -IV

5. Solubility & related phenomenon : Solubility expression, Determination of solubility, Solubility of gases in liquids, Solubility of liquids in liquids, Solubility of solids in liquids.

6. Complexation: Classification of complexes, methods of preparation, analysis and applications.

UNIT –V

7. Kinetics and Drug Stability: General considerations & concepts, half-life determination, Influence of temperature, light, solvent, catalytic species, Accelerated stability study, determination of expiry date.