

DEPTH OF BIOLOGY

B. PHARMACY

3 SEM IMPORTANT QUESTIONS

PHYSICAL PHARMACEUTICS

UNIT-I

10 Hours

Solubility of drugs: Solubility expressions, mechanisms of solute solvent interactions, ideal solubility parameters, solvation & association, quantitative approach to the factors influencing solubility of drugs, diffusion principles in biological systems. Solubility of gas in liquids, solubility of liquids in liquids, (Binary solutions, ideal solutions) Raoult's law, real solutions. Partially miscible liquids, Critical solution temperature and applications. Distribution law, its limitations and applications

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10 MARKS

1. Describe solubility expression

5 MARKS

1. What are the factor that influence solubility of drugs?
2. Describe raoult law?
3. Explain distribution it's limitation and application.

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2 MARKS

1. Define solution
2. Define association
3. Define diffusion
4. Explain binary solution
5. Explain ideal solution
6. Explain real solution
7. Define critical solution temperature

UNIT-II

10Hours

States of Matter and properties of matter: State of matter, changes in the state of matter, latent heats, vapour pressure, sublimation critical point, eutectic mixtures, gases, aerosols – inhalers, relative humidity, liquid complexes, liquid crystals, glassy states, solid-crystalline, amorphous & polymorphism.

Physicochemical properties of drug molecules: Refractive index, optical rotation, dielectric constant, dipole moment, dissociation constant, determinations and applications

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10 MARKS

1. Write a short note on physiochemical properties of drug molecule

5 MARKS

1. Explain sublimation and critical point
2. Write short note on eutectic mixture
3. Define liquid complex
4. Explain relative humidity

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2 MARKS

1. Define vapour pressure
2. Explain polymorphism

UNIT-III

08 Hours

Surface and interfacial phenomenon: Liquid interface, surface & interfacial tensions,

surface free energy, measurement of surface & interfacial tensions, spreading coefficient, adsorption at liquid interfaces, surface active agents, HLB Scale, solubilisation, detergency, adsorption at solid interface.

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10 MARKS

1. Explain the methods for measurement of surface and interfacial tension

5 MARKS

1. Explain surface free energy
2. Define spread in coefficient
3. Write a short note on surface active agent
4. Explain HLB value

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2 MARKS

1. Explain solubilization
2. Define detergency

UNIT-IV

08Hours

Complexation and protein binding: Introduction, Classification of Complexation, Applications, methods of analysis, protein binding, Complexation and drug action, crystalline structures of complexes and thermodynamic treatment of stability constants.

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10 MARKS

1. Explain and classify complexation and write down its application
2. Explain protein binding (reversible and irreversible)

5 MARKS

1. Explain and describe the thermodynamical treatment of stability constant

2 MARKS

1. Define protein binding
2. Define chelates
3. Define complexation

UNIT-V

07 Hours

pH, buffers and Isotonic solutions: Sorensen's pH scale, pH determination (electrometric and calorimetric), applications of buffers, buffer equation, buffer capacity, buffers in pharmaceutical and biological systems, buffered isotonic solutions.

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10 MARKS

1. Explain the role of buffer in pharmaceutical and biological system

5 MARKS

1. Define buffer isotonic solution
2. Explain buffer capacity
3. PH determination

2 MARKS

1. Define Ph
2. Buffer equation
3. Explain isotonic solution with example