B. Pharm. (CBCS Pattern) Semester - III

# BP302T - Physical Pharmaceutics-I

P. Pages : 3 **GUG/S/23/10885**

Time : Three Hours * 1 1 3 2 * Max. Marks : 75

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Notes : 1. Assume suitable data wherever necessary.
2. Diagrams and Chemical equation should be given wherever necessary.
3. Illustrate your answers wherever necessary with the help of neat sketches.
4. All questions are compulsory.

**1.** Multiple Choice Questions. **20**

1) The solubility of drug will be high when it is in its
   a) Stable form b) Metastable form
   b) Unstable form d) None of the above

2) The solubility of a substance depends on the
   a) Solvent used b) Temperature
   c) Pressure d) All of the above

3) The solubility of gas -------- with rising temperature.
   a) Increase b) Decrease
   c) Remain constant d) None of the above

4) According to USP, sparingly soluble means the parts of solvent required for one part of solute is
   a) 30 – 100 b) 10 – 30
   c) 100 – 1000 d) less than 1

5) Surface tension of liquid -------- with increase in temperature.
   a) decrease b) increase
   c) no change d) none of the above

6) Which of the following is also known as supercooled liquids.
   a) Amorphous solids b) Ionic solids
   c) Molecular solids d) Crystalline solids

7) Liquid is
   a) A state of matter with a definite volume, but can change shape.
   b) A state of matter with a definite shape and volume
   c) A state of matter with a definite shape, but a volume that can change
   d) A state of matter that does not have a fixed shape or volume

8) Stalagmometer is used to determine
   a) Viscosity b) Particle size
   c) Solubility d) Surface tension

9) Cetrimide is example of
   a) Anionic surfactants b) Cationic surfactants
   c) Non ionic surfactants d) Ampholytic surfactants

10) The difference between work of adhesion and work of cohesion is called
a) spreading coefficient b) Surface tension
c) Interfacial tension d) Viscosity

11) Surfactants with HLB value more than 16 indicates.
a) Wetting agent b) Detergents
c) Spreading agents d) Solubilizing agents

12) Ethylenediaminetetraacetic acid (EDTA) is ------- type of ligand.
a) unidentate b) Bidentate
c) Tetradentate d) Hexadentate

13) Which of the following organic solvent is used to form complex of Iodine.
a) Toluene b) Aniline
c) Hexane d) Cyclohexane

14) Which of the following is not classification of organic molecular complexes.
a) Quinhydrone type b) Caffeine complex
c) Acetic acid type d) Polymeric complex

15) The value of Association constant, ka and the number of binding sites N can be obtained by
a) Direct plot b) Scatchard plot
c) Klotz plot d) All of the above

16) Which of the following drug bind to $\alpha_1$-globulin.
a) steroids b) ferrous ion
c) carotenoid d) vitamin D

17) Which of the following methods are used to measure pH value?
a) pH paper b) Electrometric method
c) Colorimetric method d) All of the above

18) Maximum buffer capacity occur when
a) pH = pKa b) pH > pKa
c) pH < pKa d) All of the above

19) The number of osmoles of solute in a litre of solution is called
a) Osmolarity b) Osmolality
c) Buffer capacity d) Molarity

20) The term pH was first used by
a) Soren Peter Lauritz Sorensen b) Louis Pasteur
c) James Kelvin d) Alfred Columb

**2.** Long answer question solve **any two.** **20**

1) Write diffusion principle in biological system and law of diffusion.

2) Describe and discuss classification of complexes.

3) Elaborate method for measuring surface and interfacial tension.

**3.** Short answer questions solve **any seven.** **35**

1) What are the various states of matter and how can the various states of matter be changed.

2) Difference between Crystalline and Amorphous solids.

3) Explain organic molecular complexes with example.

4) What you mean by buffer capacity and buffer equation.

5) Write the calorimetric method of determination of pH.

6) Explain Fick's laws of diffusion.

7) Write a note on HLB scale and its applications.

8) Define and explain optical rotation and dipole moment. Write their applications.

9) What is protein binding? Write the importance of protein binding.

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