Bachelor of Pharmacy (B.Pharm) IInd Year (CBCS Pattern) Third Semester

BP 302T - Physical Pharmaceutics -I

P. Pages : 3 **GUG/W/18/10885**

Time : Three Hours * 3 0 2 2 * Max. Marks : 75

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

1. Multiple choice questions. **20**

1) Gegenion's means.
   a) Amphiphiles
   b) Ions having a charge opposite to potential determining ions.
   c) Potential determining ions.
   d) Ions having same charge as that of potential determining ions.

2) Solid | solid interfaces are important in.
   a) Emulsions b) Pastes
   c) Suspension d) Tablets

3) Complex stability constant is increased, of the ligand is having.
   a) Bulky group b) High electron density on donor
   c) High solubility d) Less ionization potential

4) Paracher is a ----------
   a) Additive b) Additive & constitutive
   c) Colligative d) Constitutive

5) Surface tension is a
   a) Capacity factor b) Extensive property
   c) Intensive property d) Tolerance

6) The relationship between the rate of diffusion of drug across the biological membrane and the concentration gradient is ----------
   a) Directly Proportional b) Exponential
   c) Inversely Proportional d) Log Linear.

7) Surface tension is defined as the change in surface free energy per unit change in
   a) Area b) Density
   c) Length d) Volume

8) One of the following is NOT multidentate ligand. Identify.
   a) Ammonia b) Dimethylglyoxime
   c) EDTA d) 1,10 phenanthroline

9) Solubility of drug will be high when it is ints
   a) Stable form b) Metastable form
   c) Unstable form d) None of above

10) Solubility curve is a curve drawn between
a) Solubility and temperature. b) Solubility & Pressure
c) Solubility and Mole fraction d) None of the above

11) Which of following is not a system of measure of solubility.
a) Mass per volume b) Molarity
c) Milliequivalents d) Enthalpy

12) Ability of drug substance to exist in more than one crystalline phase is Known as ----------
a) Polymorphism b) Polycrystallinity
c) Fusion d) Crystallinity

13) The Mass transfer of molecules in a substance from higher concentration to lower concentration is --------
a) Diffusion b) Osmosis
c) Active transport d) Passive transport

14) Pressure required to bring about liquefaction at the critical temperature is called.
a) Vapour Pressure b) Critical Pressure
c) Atmospheric Pressure d) None of above

15) Liquid is ---------
a) A state of matter with a define volume, but can change shape
b) A state of matter with a definite shape & 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

16) The refractive index of a material depends upon
a) Wavelength of light b) Temperature
c) Nature of Material d) All of the above

17) Dipole moment is used
a) For predicting the nature of molecules
b) Degree of polarity
c) Shape of molecules
d) All of the above

18) HLB scale was introduced by
a) Griffin b) Brunauer
c) Emmette d) Teller

19) Interfacial tensions are --------- than surface tensions.
a) Less b) More
c) Double d) Equal to

20) Cryoscopic method for adjusting tonicity & pH comes under.
a) Class I method b) Class II method
c) Class III method d) Class IV method

2. Solve **any two.** **20**

a) What are the different methods used for measurement of pH? How pH is affected by temperature?

b) What are the significance of protein binding? Explain methods for measuring the unbound drug concentration.

c) Derive the equation for Freundlich isotherm and Langmuir adsorption.

3. Solve **any seven.** **35**

a) Define solubility. Explain in details about solvation and association.

b) Draw & Explain phase diagram of phenol water system.

c) Write short note on

i) Fick's first law of diffusion.

ii) Franz diffusion cell.

d) What are liquid crystals? Explain different types of liquid crystals.

e) Explain the principle & working of Abbe's Refractometer.

f) Define dielectric constant. How it is measured? Give its application.

g) Describe in detail capillary rise method to determine surface Tension of liquid.

h) Define complexation. What are types of complexes? Write in detail about inclusion complexes.

i) Explain in detail methods of adjustment of toxicity.

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