te & Time: 31-Dec-2018 (09:30 AM - 12:30 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

BPharm Semester III End Semester Examination December 2018
PCE-BP302T: Physical Pharmaceutics I (Theory)
Date:31-12-2018

Physical Pharmaceutics I [PCE-BP 302T]

Marks: 75 **Duration: 180 mins.**

I Multiple Choice Questions (MCQs)

Answer all the questions. Section Duration: 30 mins

1) Who had invented pH scale? (1)

1) Davies 2) Sorensen 3) Griffin 4) Benjamin Franklin

2) Surfactant solubilises poorly soluble drug by ------- (1)

1) adsorbing at the surface 2) decreasing the interfacial tension between drug and solvent 3) forming micelle in the bulk of the liquid 4) increasing the cohesive force of the solvent

) Surfactants having HLB value of more than 16 are useful as ---------- (1)

1) solubilizing agent 2) detergents 3) antifoaming agents 4) o/w emulsifiers

) The difference in the work of adhesion and the work of cohesion of liquids on the surface of other liquid is known as---------- (1)

1) surface tension 2) spreading coefficient 3) surface free energy 4) surface adsorption

) When span 40 is dissolved in oil, at slightly above the critical micelle concentration, the arrangement of span molecule is : ---------- (1)

1) head face the center of micelle 2) laminar arrangement 3) tail face the air at the interface 4) tail face the center of the micelle

) ----------is the number of moles (gm molecular weight) of solute dissolved in one liter of solution. (1)

1) Normality 2) Molality 3) Molarity 4) Mole fraction

The upper critical solution temperature is defined as-------- (1)

1) maximum temperature at which two conjugate solutions are soluble
2) maximum temperature above which conjugate solutions are miscible
3) minimum temperature below which conjugate solutions are immiscible
4) maximum temperature below which conjugate solutions are miscible

8) Solubility is defined as the concentration of the substance in a saturated solution at ---------- (1)

1) lower temperature
2) critical solution temperature
3) higher temperature
4) specified temperature

9) Co-solvents enhance the solubility of poorly soluble drug by---------- (1)

1) decreasing the interfacial tension between solute and solvent
2) changing the pH of the system
3) common ion effect
4) increasing the cohesive forces of solute

10) Solubility is enhanced when there is: ---------- (1)

1) positive deviation from Raoult's law
2) negative deviation from Raoult's law
3) no deviation from Raoult's law
4) equal solute-solute, solute-solvent and solvent-solvent interactions.

11) Process in which heat is required to convert a liquid into the vapour state is known as ..... (1)

1) latent heat of vaporisation
2) sublimation
3) melting
4) condensation

12) Solid is different from liquid as liquids ..... (1)

1) have a definite shape and a definite volume
2) change shape with containers dimensions
3) expand or contract to fill the shape of the container
4) have a definite shape but not volume

13) In aerosols, regulation of dose is concerned with ..... (1)

1) Propellant
2) Actuator
3) Metered valve
4) Dip tube

14) ..... possess some of the properties of liquids and some of solids (1)

1) Polymorphs
2) Supercritical fluid
3) Liquid crystals
4) Amorphous

15) Clathrates are type of ..... (1)

1) metal complexes 2) inclusion complexes 3) organic molecular complexes 4) None of the above

What is the function of ligand in coordinated complexes?

1) Accepts one electron and share it 2) Accepts a pair of electrons 3) Donates a pair of electron 4) None of the above (1)

17) Iodine produces soluble complexes with .....

1) hexane 2) toluene 3) potassium iodide 4) picric acid (1)

18) Among the following all are metal complexes except .....

1) chelates 2) aromatic type 3) olefin type 4) layer type (1)

19) For a weak acid, under what conditions, pH = pKa

1) [Acid]/[Salt] > 1 2) [Acid]/[Salt] < 1 3) [Acid]/[Salt] = 1 4) [Acid]/[Salt] = 0 (1)

20) Haemolysis occurs in .....

1) hypertonic solution 2) hypotonic solution 3) isotonic solutio 4) none of the above (1)

II Long Answers

Answer all the questions.

1) Define and derive Nernst's distribution law. (10)

2) Enlist the methods for the analysis of complexes. Explain solubility methods in detail. (10)

III Short Answers

Answer all the questions.

1) Explain colourimetric estimation of pH determination. (5)

2) State and explain Freundlich adsorption isotherm. (5)

3) Define surface tension and explain the factors influencing surface tension. (5)

4) What are eutectic mixtures? Discuss briefly with an example. Write the pharmaceutical applications of eutectic mixtures. (5)

5) Write the notes on "dielectric constant" and "dissociation constant". (5)

6) Derive a buffer equation for an acid buffer with suitable example. (5)

7) Define aerosol. What are its uses? Give the advantages and disadvantages of this pharmaceutical dosage form. (5)