1/31/22, 11:29 AM PCE-BP302T - S2

Exam Date & Time: 31-Jan-2022 (10:00 AM - 01:00 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

Physical Pharmaceutics I [PCE-BP302T - S2]

Marks: 7	Duration: 180 mins.
	I Multiple Choice Questions (MCQs)
Answer a	all the questions. Section Duration: 30 mins
1)	Buffers used to determine the solubility from the bio-pharmaceutics view are
	(1)
	1) pH 1 to 14 2) 0.1 N HCl and 0.1 N NaOH 3) pH 1 to 7 4) pH 1.2, 6.8, 7 and 8
2)	Solubility of all gases as the temperature of the solution increases
	. (1)
	1) Increases 2) decreases 3) Increases and decreases 4) Decreases and increases
3)	Which of the following is an example for an ideal solution?
	Chloroform and benzene and Benzene and Water and (1)
	1) 2) 3) 4) ethanol acetone mixture toluene mixture acetone mixture mixture
	mature
4)	Partially miscible liquids are influenced by
	1) pressure 2) pH 3) time 4) temperature
5)	The miscibility of nicotine in water is governed by
	(1)
	1) Molecular state 2) Temperature 3) Equilibrium condition 4) Partition law
6)	Sodium chloride in water-benzene system exists as (1)
	dissociated form in monomer in 3) benzene layer dimer in dissociated form 4) in aqueous layer
7)	Micelles assume shape near cmc

(1)

	1) laminar 2) rectangular 3) spherical 4) oval	
8)	Increase in surface area of the liquid results in	
9)	increase in decrease in  1) 2) surface free 3) 4) surface free surface tension surface tension energy energy  'Tweens' are hydrophilic and 'Spans' are lipophilic in nature: the sorbitan ring in these represents	(1)
10)	1) hydrophilic group 2) lipophilic group 3) ionic group 4) neutral group The pH of the drug solutions is maintained by addition of	(1)
	1) acid 2) base 3) salt 4) buffers	(1)
11)	Enzyme Pepsin shows maximum activity at	
	1) pH 1.5 2) At physiological pH 3) At isoelectric pH4) All the above	(1)
12)	At pH 6.5 Methyl red showscolour	
	1) orange 2) pink 3) yellow 4) red	(1)
13)	is also known as Mesophase.	-
	1) Liquid crystal 2) Solvate 3) Hydrate 4) Polymorph	(1)
14)	is the process of conversion of a solid state of a substance to its gaseous state.	(1)
	1) Boiling 2) Evaporation 3) Condensation 4) Sublimation	
15)	Clathrates belong to the class of complexes	
	1) Metal 2) Inclusion 3) Organic molecular 4) None of the above	(1)
16)	Ligand and metal ion in a complex representrespectively.	
	1) Lewis acid and 2)Lewis base and 3)Nucleophile and 4)Donor and	1)

base acid electrophile acceptor

17)	Administration of solution produces haemolysis.
	1) Hypotonic 2) Isotonic 3) Hypertonic 4) All of the above
	1) 12) potome 2) isotome 3) Trypertome 4) An of the above
18)	When pH can be equal to pKa for a weak acid?
	1) [Acid]/[Salt] = 0 2) [Acid]/[Salt] < 1 3) [Acid]/[Salt] > 1 4) [Acid]/[Salt] = 1
19)	Buffer solutions of a solution.
	Either increase or increase the (1)
	decrease the decrease the resist changes in 1) 2) 3) 4) decrease pH pH pH the pH
20)	Which buffer system is mainly a biological buffer in blood plasma?
ĺ	
1	1) Boric acid 2) Carbonic acid 3) Acetic acid 4) Citric acid (1)
	II Long Answers
Answe	er all the questions.
1)	Discuss Phenol-Water system with neat labelled phase diagram.
	(10)
2)	Discuss the concepts of optical rotation and dipole moment and their applications.
,	(10)
Answer	all the questions.
1)	Explain the micelle formation with neat diagram.
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2)	Define adsorption isotherm and mention the four Langmuir adsorption isotherm assumptions.
2)	
")	Discuss the concepts of polymorphism and pseudopolymorphism.

- 4) Write about the pharmaceutical applications of monomolecular inclusion complexes.
- 5) Explain the kinetics of protein binding of drugs using double reciprocal plot.
- 6) Briefly write on specific features of indicators.
- 7) Discuss the derivation of buffer equation for a buffer system containing weak base and its salt.

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