B. Pharm. Second Year (CBCS Pattern) Semester-III

BP302T - Physical Pharmaceutics-I

P. Pages : 3 **GUG/S/25/10885**

Time : Three Hours * 1 0 3 2 * Max. Marks : 75

Notes : 1. All questions are compulsory.

1. Multiple choice questions. **1x20 =20**

i) Which of the following is a metal complex?
   a) Inclusion complex b) Quinhydrone complex
   c) Aromatic complex d) All of these

ii) Which of the following method is/are used to measure unbound drug core?
   a) Dynamic dialysis b) Equilibrium dialysis
   c) Ultrafiltration d) All of the above

iii) EDTA is which type of ligand?
   a) Monodentate b) Tridentate
   c) Bidentate d) Hexadentate

iv) Which of the following electron acceptor is capable of forming organic molecule complex?
   a) Picric acid b) Carbon tetrachloride
   c) Toluene d) Benzene

v) Surface free energy is expressed in –
   a) Ergs b) N/m^2
   c) Newton / meter d) kg. cm

vi) Surfactants are characterized by pressure of –
   a) Only positive charge
   b) Negative charge
   c) Waer solubilizer & fat solubilizer group in same molecule
   d) None of the above

vii) Cryoscopic method for adjusting tonicity α pH comes under –
   a) Class I method b) Class II method
   c) Class III method d) Class IV method

viii) The maximum buffer capacity occurs when-
   a) pH = pKa b) pH > pKa
   c) pH < pKa d) All of these

ix) Which of the following method is/are used to measure pH value?
   a) pH paper b) Electrometric method
   c) Calorimetric method d) All of these

x) Maximum buffer capacity (βmax) equals to –

a) 0.576ºC b) 2.303ºC
c) 0.2303ºC d) 57.6ºC

xi) If osmotic pressure of a solution is equal to the osmotic pressure of plasma, then it is called as –

a) Isotonic solution b) Isobaric solution
c) Hypertonic solution d) None of these

xii) The value 14 on pH scale indicates –

a) Strongly alkaline b) Strongly acidic
c) Neutral d) None of the above

xiii) The term pH was first used by –

a) Soren peter Lauritz Sorensen
b) Louis Pasteur
c) James Kelvin
d) Alfred Comb

xiv) Which one of the following is equal to the pKa of a weak acid?

a) It's relative molecular mass
b) The pK_b of its conjugate base
c) The pH of a solution containing equal amount of the acid α its conjugate base
d) The equilibrium conc. of its conjugate base

xv) The solubility of substance depends on the –

a) Solvent used b) Temperature
c) Pressure d) All of these

xvi) Which of the following is not a measure of solubility?

a) Molality b) g/ml
c) Enthalpy d) Gram equivalents

xvii) The solution which Obey's the Raoults law is known as –

a) Real solution b) Ideal solution
c) Binary solution d) Supersaturated solution

xviii) Freely soluble means how many parts of solvent required for 1 part of solute?

a) 30-100 parts b) 100-1000 parts
c) 1-10 parts d) 1000-10000 parts

xix) Solubility of most gases usually ------- with increase in temperature.

a) Decrease b) Increase
c) Does not change d) First increase & then decrease

xx) What is critical solution temperature of phenol-water system?

a) 66.8ºC b) 20.8ºC
c) 61ºC d) 18.5ºC

2. Solve **any two** **2x10 =20**

a) Define optical rotation. Discuss a complete method of measurement of optical rotation by polarimeter.

b) Enumerate factors affecting solubility. Briefly discuss each one with suitable example.

c) Write a note on following method.

i) Electrometric method

ii) Colorimetric method

3. Solve **any seven.** **7x5 =35**

a) What is common ion effect? Describe it with suitable example. Give its significance.

b) What is dissociation constant? Discuss its significance.

c) Explain different law that are used to describe behaviour of gases.

d) Explain the significance of Protein binding.

e) What is Hemolytic method for the measurement of tonicity.

f) Find the conc. of sodium chloride to prepare 1% w/v solution of procaine hydrochloride iso-osmotic with blood plasma.

g) Explain the applications of chelates in pharmacy.

h) What is critical micelle concentration? What is its significance in pharmacy.

i) Describe drop formation method by stalagmometer.

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