

PARUL UNIVERSITY
FACULTY OF PHARMACY
B. Pharm. Summer 2018 - 19 Examination

Semester: 3
Subject Code: BP302T
Subject Name: Physical Pharmaceutics-I

Date: 06/05/2019
Time: 10:00am to 1:00pm
Total Marks: 75

Instructions:

1. Figures to the right indicate maximum marks.
2. Make suitable assumptions wherever necessary.

Q.1 Multiple Choice Questions (MCQs) (1 Mark Each)

1. Which of the following has higher solubility?
a) Methyl Alcohol
b) Ethyl Alcohol
c) Propyl Alcohol
d) Butyl Alcohol
2. The pH of pharmaceutical buffer system can be calculated by
a) pH partition theory
b) Noyes whitney law
c) Henderson-Hasselbatch equation
d) Michalis Menten Equations
3. For 1 part of sparingly soluble solute, how many parts of solvent are required
a) 10-30
b) 1-10
c) 30-100
d) 10-100
4. All of the following physicochemical constants are useful in predicting the solubility of a drug except
a) Dielectric constant
b) Valency
c) pH of solution
d) pKa of drug
5. Two solutions are said to be isotonic if they exert same.....
a) Viscosity
b) surface tension
c) Osmotic pressure
d) none of above
6. Ethanol increases solubility of poorly soluble drug by
a) acting as solvent
b) acting as surface acting agent
c) acting as co-solvent
d) none of above
7. The blood plasma has a freezing point of
a) -52 °C
b) -25 °C
c) 52 °C
d) 25 °C
8. Rain drops are spherical because of
a) gravitational force
b) surface tension
c) air resistance
d) low viscosity of water
9. Following is the value of gas constant
a) 1.987 joules/mol k
b) 0.8314 joules/mol k
c) 8.314 cal/mol deg
d) 8.314 joules/mol k
10. The pH value is calculated mathematically as the
a) Negative log to base 10 OH- ion concentration
b) Negative log to base 10 H+ ion concentration
c) log to base 10 OH- ion concentration
d) log to base 10 H+ ion concentration
11. Solubility depends upon
a) Temperature
b) Solute
c) Solvent
d) All of above
12. The human plasma contains..... as buffer
a) Carbonates
b) Carbonic acid
c) a & b
d) None of above
13. Solution which can hold no more solute is called
a) dilute solution
b) saturated solution
c) aqueous solution
d) concentrated solution

- 14 If the solution causes shrinkage of RBC, it is said to be
 a) Hypotonic
 c) Hypertonic
 b) Osmotic pressure
 d) None of above
- 15 Process in which solid changes directly into vapors without changing in liquid state is called
 a) condensation
 c) boiling
 b) evaporation
 d) sublimation
- 16 Mathematical expression that describes Boyle's law is
 a) $PV = \text{constant}$
 c) $P * \text{constant} = V$
 b) $V * \text{constant} = P$
 d) $V/P = \text{constant}$
- 17 On increasing temperature of amorphous solid they
 a) melt at specific temperature
 c) break at specific temperature
 b) boil at specific temperature
 d) soften gradually
- 18 Melting and freezing of a substance occurs as
 a) same temperature
 c) more than freezing point
 b) less than boiling point
 d) more than melting point
- 19 Process in which vapor molecules are recaptured by molecules at liquid surface is called
 a) evaporation
 c) boiling
 b) condensation
 d) sublimation
- 20 As molecular mass of gasses increases their density
 a) decreases
 c) increases
 b) remains unchanged
 d) none of above

Q.2 Long Answers (any 2 out of 3) (10 Mark Each)

1. Write a short note on different types of solvents. Write in detail about solubility of liquids in liquids.
2. Define Optical rotation. Explain in detail about Polarimeter.
3. Enlist different methods for measurement of surface and Interfacial tension. Explain any two methods in detail.

Q.3 Short Answers (any 7 out of 9) (5 Mark Each)

1. Write a short note on aerosols.
2. Enlist method used for evaluation of complexes. Explain any two methods in detail.
3. Write a short note on HLB.
4. Write a short note on buffers in pharmaceutical and biologic system.
5. Write a short note on Polymorphism.
6. Describe the factors affecting solubility of gases in liquid.
7. Explain different methods of adjusting tonicity and pH.
8. Write a short note on phase rule.
9. Write a short note on Refractive index.