BRAINWARE UNIVERSITY

Term End Examination 2022
Programme – B.Pharm-2020/B.Pharm-2021
Course Name – Physical Pharmaceutics I
Course Code - BP302T
(Semester III)

Full Marks : 75   **Time : 3:0 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)   1 x 20=20

1.   *Choose the correct alternative from the following :*

(i)   Tell the Adhesive force present in

    a) unlike molecule   b) real solution
    c) same molecule   d) both a & b

(ii) Predict the force per unit length existing at the interface between two immiscible liquids known as

    a) Surface tension   b) Interfacial tension
    c) Conjugate base   d) None of these

(iii) The concentration at which micelle formation occurs is termed

    a) CMC   b) CCM
    c) MCC   d) Chelate

(iv) Tell Vapour pressure is exerted by

    a) saturated vapour   b) unsaturated vapour
    c) condensed liquid   d) All

(v)   Partition coefficient states

    a) state of unionized drug   b) state of ionized drug
    c) Both a & b   d) none

(vi) Predict the Which surfactants used as antimicrobials

    a) Anionic   b) Ionic
    c) Non-Ionic   d) Cationic

(vii) Select the Preparation of solutions is possible on account of one of the following type of interactions

    a) Solute-solute   b) Solute-solvent
    c) Solvent-solvent   d) None of the above

(viii) Identify Surface tension also decreases because of

a) Addition of salt
b) Addition of surfactant
c) Addition of co-solvent
d) All of the above

(ix) Name of the process in which ions are surrounded by water molecules

a) Solvation
b) Hydration
c) Association
d) None of the above

(x) Predict which type of shaped particles have the minimum surface area per unit volume.

a) Square
b) Rectangular
c) Spherical
d) Oblong

(xi) Select Mesophase also known as

a) Supercritical fluid
b) Liquid crystals
c) Both a and b
d) None of these

(xii) P+F = C + 2 where P and F means

a) Number of phases in equilibrium and Number of degrees of freedom
b) Number of degrees of freedom and Number of components in the system
c) Number of components in the system and Number of phases in equilibrium
d) None of these

(xiii) Birefringent property is observed in

a) crystalline solid
b) liquid crystal
c) fluid
d) both a & b

(xiv) Choose the correct statement that interfacial tensions are .

a) greater than surface tension
b) lesser than surface tension
c) Both a & b
d) Does not depend to each other

(xv) Show the Sublimation curve represent conversion of

a) liquid to solid
b) liquid to vapour
c) solid to liquid
d) solid to vapour

(xvi) State according to phase rule, if phase number is increased degree of freedom will

a) Increase
b) Decrease
c) No change
d) No relation is present.

(xvii) Predict the Pentobarbitol binds with

a) alpha-1 acid glycoprotein
b) Lipoprotein
c) alpha-1 globulin
d) Haemoglobin

(xviii) Predict the HLB value of oleic acid is

a) 1
b) 3
c) 2
d) 4

(xix) Identify from the followings are the unidentate ligand except

a) NH3
b) Ethylenediamine
c) Cl-
d) NO2-

(xx) In vapour pressure curve x axis define as

a) vapour pressure
b) temperature
c) mole fraction
d) molecular weight

Group-B
(Short Answer Type Questions)

5 x 7=35

2. Write an short note on isosmotic and isotonic solution. (5)
3. Write passive diffusion in biological system. (5)

OR

Write a note on buffer equation and buffer capacity. (5)
4. Define Critical Solution Temperature with label diagram. (5)

OR

State the importance of Surface Tension & Interfacial Tension in Pharmacy (5)

5. Discuss surface tension by capillary rise method? (5)

OR

Explain HLB value of a compound with HLB scale. (5)

6. Illustrate short notes on factors affecting complexation and protein binding (5)

OR

Explain phase diagram for three phase system of ice, water and vapour. (5)

7. Explain Active transport and its classification with diagram (5)

OR

Differentiate between Unsaturated, saturated & supersaturated solution. (5)

8. Write notes on crystalline solid and amorphous solid. (5)

OR

Explain the relation between surface free energy and surface tension. (5)

Group-C
(Long Answer Type Questions)

10 x 2=20

9. Briefly explain about solubility, importance of solubility along with differentiate between ideal (10) and real solution.

OR

Classify miscibility with example and briefly explain the derivation of Henderson-Hasselbalch (10) Equation

10. Summarize in detail about determination of pH by electrometric method (10)

OR

Summarize liquefaction of gas with critical temperature and critical pressure. Describe (10) method of liquefaction and its significance in aerosol formulation

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