Seat Number

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W-18

BP 302 T
Physical Pharmaceutics - I
(731102)

P. Pages : 2

Time : Three Hours **Max. Marks : 75**

Instructions to Candidates :

1. Do not write anything on question paper except Seat No.
2. Graph or diagram should be drawn with the black ink pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. All questions are compulsory.
5. Figure to right indicate full marks.
6. Draw well labelled diagram when necessary.

1. a) Choose the correct answer of following. **1x10 =10**

1) Which of the following is ideal gas equation.
   a) PV = nRT b) Z = PV/RT
   c) D = M/V d) PV = K

2) Capillary rise method is used to determine.
   a) Dielectric constant b) Partition coefficient
   c) Surface tension d) Zeta potential

3) Ability of substance to rotate plane polarized light is known as.
   a) Refractive index b) Optical activity
   c) Dipole moment d) Dissociation constant

4) The pH of pharmaceutical buffers can be calculated using.
   a) Michaelis Menten equation b) pH portion theory
   c) Noyes Whitney equation d) Henderson Hassel Balch equation

5) Surfactant are recognized by presence of ---------.
   a) Only hydrophilic group b) Only lipophilic group
   c) Both hydrophilic and lipophilic group d) None of above

6) The phenomenon in which substance exist in more than one crystalline form is known as---------.
   a) Amorphism b) Crystallinity
   c) Polymorphism d) Anisotropy

7) HLB scale is given by ---------.
   a) Du Noyes b) Griffin
   c) Faraday d) Avogadro

8) Process of conversion of solids directly into gases is known as -------.
   a) Sublimation b) Evaporation
   c) Fusion d) condensation

9) One of the following is used to create pressure within aerosol container -----.
   a) Surfactant b) Solubilizing agent
   c) Stabilizer d) Propellant

10) Adsorption is a ---------.
   a) Bulk phenomenon b) Surface phenomenon
   c) Critical phenomenon d) All of above

b) Answer following question **2x5 =10**

1) State Raoult's law.

2) Define sublimation with suitable example.

3) What is refractive index? Write its formula.

4) Define surface free energy. Write its equation.

5) Classify complexes in detail.

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

1) What are solvents, Classify them and explain various solute-solvent interaction in detail.

2) Define Aerosols, Write their pharmaceutical applications and explain principle and mechanism of aerosol action.

3) Define polymorphism, Classify polymorphs and write pharmaceutical applications of polymorphism.

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

1) Explain various factors affecting solubility of gases in liquids.

2) Define sublimation, Explain principles of sublimation in details.

3) What is HLB. Explain various methods to determine HLB of surfactant.

4) Define optical rotation, Explain measurement method for optical rotation.

5) Explain concept of wetting and detergency with their applications.

6) What is protein binding, Explain kinetics of it.

7) Explain buffers in pharmaceutical and biological systems.

8) Explain distribution law write its applications.

9) Discuss various shapes and types of crystals.

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