

III. Short answers (Answer seven out of the nine questions) (5x7=35)

1. Discuss about microscopic method of determining particle size. 5
2. Write notes on sedimentation volume and degree of flocculation. 2.5+2.5=5
3. Explain flocculation and creaming as instability problems of emulsion. 5
4. What do you mean by drug stability? Explain the different types of antioxidants used in prevention of oxidative degradation. 2+3=5
5. How will you evaluate the flow property of a powder sample? Discuss. 5
6. What are colloids? Discuss about lyophobic colloids and its preparation. 1+4=5
7. What is rheology? Discuss single-point and multi-point viscometers? 1+4=5
8. Explain the structured vehicle approach to maintain deflocculated particles in suspension. 5
9. Write a note on kinetic properties of colloids. 5

**B Pharm Even Semester Examination,
September, 2023**

PHARMACEUTICAL SCIENCES

(4th Semester)

Course No: BP-403T

(Physical Pharmaceutics-II- Theory)

FM: 75

Time: 3 Hours

The figures in the right margin indicate full marks for the question

I. A. Multiple Choice questions 1x10=10

1. The distance between two tangents at opposite sides of the particle is _____ diameter.
 - (a) Feret's
 - (b) Martin's
 - (c) Projected area
 - (d) tangential
2. _____ rule thus states that the precipitating power of an electrolyte increases rapidly with the valence or charge of the coagulating ions.
 - (a) DLVO
 - (b) Schulze-Hardy
 - (c) Hofmeister
 - (d) Tyndall
3. According to DLVO theory, the second energy minimum, which is the distance of separation of flocculated particles is at about _____.
 - (a) 100-200 Å
 - (b) 500-600 Å
 - (c) 1-100 Å
 - (d) 1000-2000 Å

4. Materials that exhibit _____ flow are also called Bingham bodies.
- (a) Plastic (b) Pseudoplastic
(c) Dilatant (d) Thixotropic
5. Consider the following statements:
- I. The nature or polarity of the solvent can influence the rate of reaction.
- II. A polar solvent tends to decrease the rate of those reactions where the product formed is more polar than the reactants.
- (a) Only I is true (b) Only II is true
(c) Both are true (d) Both are false
6. A deformation that does not recover completely after release of stress is known as ____
- (a) elastic deformation (b) plastic deformation
(c) true deformation (d) yield deformation
7. Glycerin at _____ % solution eliminates Brownian motion.
- (a) 5% (b) 20%
(c) 30% (d) 50%
8. The type of emulsion formed is a function of the solubility of the surfactant, the phase in which it is more soluble from the continuous phase. This statement comes from _____
- (a) DLVO theory (b) Stokes law
(c) Bancroft rule (d) Pickering law

9. Andreasen apparatus is related to which particle size determination method?
- (a) Microscopic (b) Sieving
(c) Surface charge (d) Sedimentation
10. The osmotic pressure, π of a dilute colloidal solution is given by _____ equation.
- (a) Faraday's (b) van't Hoff's
(c) Mark-Houwink's (d) Svedberg's

I. B. Objective type (2x5=10)

1. What is gold number of a protective colloid?
2. What are Pickering emulsions?
3. Mention two properties of an ideal suspending agent.
4. Define stress and strain in deformation of solids.
5. What is an angle of repose?

II. Long answers (Answer two out of the three questions) (10x2=20)

1. What are Newtonian and non-Newtonian systems? Discuss about plastic and pseudoplastic flow in detail. (2+4+4=10)
2. Discuss about monomolecular and multimolecular adsorption of emulsification theory. Mention four different applications of emulsion in pharmacy. (4+4+2=10)
3. Briefly discuss about the effect of dielectric constant and temperature on the rate of a reaction. How will you protect your product from hydrolytic degradation? (4+6=10)

Turn Over