Exam Date & Time: 10-Jun-2022 (10:00 AM - 01:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

BPharm Semester IV - End Semester Examination, June 2022

Physical Pharmaceutics-II [PCE-BP403T]

Marks: 75 **Duration: 180 mins.**

I Multiple Choice Questions (MCQs)

Answer all the questions. Section Duration: 30 mins

1) Rabbit erythrocytes are commonly used for the standardization of .....

1)	Light microscope		2)	Spectrometer		3)	Electrophoresis		4)	None of the above		(1)

2) An example for colloidal systems is

1)	Clays and gel		2)	Ointments and pastes		3)	Solutions of soaps and proteins		4)	Suspension and emulsion		(1)

3) Flocculated suspensions exhibit the flow of type

1)	Dilatant		2)	Newtonian		3)	Plastic		4)	Pseudoplastic		(1)

4) A limitation that is not related to the falling sphere viscometer

1)	Applicable to only less viscous liquids		2)	Large volume of sample is required		3)	Needs the sample to be transparent		4)	Plug flow		(1)

5) Fluidity is a term associated with Newtonian fluids. An equivalent term in plastic flow fluids is

1)	Apparent viscosity		2)	Flexibility		3)	Mobility		4)	Plastic viscosity		(1)

6) Dilatant flow is characterized as a reverse phenomenon of

1)	Newtonian flow		2)	Plastic flow		3)	Pseudoplastic flow		4)	Rheopexy		(1)

7) Deflocculated suspensions with high concentrations of the dispersed solids exhibits the flow of type:

1)	Dilatant		2)	Newtonian		3)	Plastic		4)	Pseudoplastic		(1)

8) A wetting agent is included in the formulation of a suspension, particularly when the suspended particles are

1)	Hydrophobic		2)	Denser than the vehicle		3)	Water soluble		4)	Lesser interfacial tension		(1)

9) For a flocculated suspension, one of the following criterions is satisfied or established

												(1)
1)	High inter particle repulsions		2)	Strong inter particle attractions		3)	Weak inter particle attractions		4)	Weak inter particle repulsions		

10) Methyl cellulose is a polymer of ..... type

												(1)
1)	Anionic		2)	Amphilytic		3)	Cationic		4)	Non ionic		

11) For a stable emulsion, the phase volume ratio is generally about

												(1)
1)	26/74		2)	52/48		3)	74/26		4)	74/100		

12) The HLB range of an emulsifier employed in the preparation of water in oil emulsion is

												(1)
1)	3 to 6		2)	7 to 12		3)	13 to 15		4)	More than 15		

13) On commercial scale, emulsions are prepared by

												(1)
1)	Centrifugation		2)	Dialysis		3)	Freezing		4)	Homogenization		

14) For design and development of new dosage forms, ... distribution is important.

												(1)
1)	Normal		2)	Weight		3)	Number		4)	None of the above		

15) ..... diameter is preferred for the design and development of emulsions.

												(1)
1)	Martin diameter		2)	Sieve diameter		3)	Stokes' diameter		4)	Surface diameter		

16) Gas displacement method is used for the determination of .....

												(1)
1)	True density of porous powder		2)	True density of non-porous powder		3)	Both A and B		4)	None of the above		

17) In which type of powder flow, addition of glidant is preferred

												(1)
1)	Very poor flow		2)	Passable flow		3)	Good flow		4)	Excellent flow		

18) Polydisperse powders are the powders having .....

												(1)
1)	Same size of particles		2)	Same volume of particles		3)	Different size of particles		4)	Different volume of particles		

19) ..... is a diameter of a circle with the same area as that of particle observed to the surface on which the particles rest

												(1)
1)	Projected diameter		2)	Surface diameter		3)	Martin diameter		4)	Feret diameter		

20) The optimal pH of buffers to avoid the degradation of pharmaceutical dosage forms is

												(1)
1)	1.0 to 2.5		2)	2.5 to 3.5		3)	3.5 to 5.0		4)	5.0 to 6.5		

II Long Answers

Answer all the questions.

1) Define thixotropy. Explain in detail different types of thixotropic curve with suitable (10)

example

2) Write the pharmaceutical and biological applications of first order kinetics. Derive the units for specific rate constant, half-life and shelf life of first order reaction. (10)

III Short Answers

Answer all the questions.

1) Define and classify colloids. Differentiate different types of colloids. (5)

2) Explain the concept of DLVO theory with energy curve (5)

3) Define and explain the factors affecting sedimentation volume (5)

4) Define emulsion. Write the mechanism of action of emulsifying agents (5)

5) Explain the effect of electrical charge, moisture content and particle size on the flowability of particles (5)

6) Describe Andreasen pipette method for analysis of particle size (5)

7) Explain the methodology of accelerated stability studies (5)

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