

Question Paper

MaKey

Exam Date & Time: 14-Jun-2019 (09:30 AM - 12:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

BPharm Semester IV End Semester Examination June 2019

PCE-BP403T: Physical Pharmaceutics II (Theory)

Date: 14 June 2019

Physical Pharmaceutics-II [PCE-BP403T]

Marks: 75

Duration: 180 mins.

I Multiple Choice Questions (MCQs)

Answer all the questions.

Section Duration: 30 mins

Instructions: Answer ALL questions.

- 1) Surfactant solutions are termed as association colloids when their concentrations are (1)
 - Insufficient to saturate the bulk phase
 - Insufficient to saturate the interface
 - Less than critical micellar concentration
 - More than critical micellar concentration

- 2) Apparent viscosity for non-Newtonian fluid is----- (1)
 - Constant
 - Depends on shear rate
 - Depends on viscometer
 - Depends on shear stress

- 3) Kinematic viscosity is----- (1)
 - 1/Absolute viscosity
 - 1/ (fluidity x density)
 - 1/ fluidity
 - 1/ shear rate

- 4) Falling sphere viscometer can measure the viscosity over a range of ----- (1)
 - 0.5 to 2,00,000 poise
 - 0.5 to 2,00,000 milli poise
 - 0.5 to 2,000 poise
 - 0.5 to 2,000 milli poise

- 5) Flow behaviour of dilute flocculated suspension represent ----- (1)
 - Newtonian system
 - Plastic system
 - Pseudo-plastic system
 - Dilatant system

6) ----- obey the Stoke's law of sedimentation. (1)

Dilute and flocculated dispersions

Concentrated and flocculated dispersions

Concentrated and deflocculated dispersions

Dilute and deflocculated dispersions

7) Polymers are used in the formulation of -----suspension. (1)

Deflocculated

Flocculated

Flocculated and deflocculated

None of the above

8) Vanishing cream is an example for ----- (1)

O/W emulsion

W/O emulsion

Multiple emulsion

Suspension

9) Creaming in emulsion can be controlled by regulating ----- (1)

Density of dispersed phase

Density of dispersion medium

Globule size

Volume of dispersion medium

10) ----- flow behaviour is shown by pharmaceutical Lotions (1)

Plastic

Pseudo-plastic

Newtonian

Dilatant

11) Which diameter is important for the development of emulsions and suspensions? (1)

Projected diameter

Stoke's diameter

Sieve diameter

Surface diameter

12) Polydisperse powders are the powders having (1)

Same size of particles

Same volume of particles

Different size of particles

Different volume of particles

13) is a diameter of a circle with the same area as that of particle observed to the surface on which the particles rest. (1)

Projected diameter

Surface diameter

Sieve diameter

Feret diameter

In which type of flow of powder addition of glidant is preferable

(1)

Excellent flow

Good flow

Passable flow

Very poor
flow

15) Gas displacement method is used for the determination of

(1)

True density of porous powder

True density of non-porous
powder

Both A and B

None of the above

16) The units of first order rate constant is

(1)

Moles Liter⁻¹ Min⁻¹
1

Liter Moles⁻¹ Min⁻¹

Moles Liter⁻¹

Min⁻¹

17) Ionic reactions are in solutions and reactions between covalent molecules are

(1)

Fast, slow

Slow, fast

Fast, fast

Slow, slow

18) Catalyst is a substance

(1)

Which controls the rate of reaction with partial change

Which changes the rate of reaction with itself completely undergoing a permanent chemical
change

Which controls the rate of reaction without itself undergoing a permanent chemical change

None of the above

19) During storage, crystal growth is observed in suspension due to

(1)

Absorption of water

Fluctuation in the ambient
temperature

Presence of suspending agent

Volatilization of solids

- 20) Which of the following expression is correct for the determination of shelf-life for a first order decomposition? (1)

$$t_{1/2} = \frac{0.105}{K}$$

$$t_{90} = \frac{0.105}{K}$$

$$t_{90} = \frac{0.693}{K}$$

$$t_{1/2} = \frac{0.693}{K}$$

II Long Answers

Answer all the questions.

- 1) Explain the thixotropy measurement for plastic fluid at 'constant rate' and 'varying rate' of shear. (10)
- 2) Explain in detail the coulter counter method for determination of particles volume. (10)

III Short Answers

Answer all the questions.

- 1) Write any five salient features of lyophobic colloids. (5)
- 2) Discuss on surfactant as an emulsifier. (5)
- 3) Write short note on wetting agent in the dispersion of solids in water. (5)
- 4) Discuss on different factors affecting the viscosity of a liquid. (5)
- 5) Explain DLVO theory with potential energy versus particle distance curve. (5)
- 6) Deduce the units for specific zero order rate constant. (5)
- 7) Explain effect of hydrolysis on the stability of drugs with their preventive methods. (5)

-----End-----