

Exam Date & Time: 22-Jul-2022 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

BPharm Semester IV - End Semester Examination, June 2021

Physical Pharmaceutics - II [PCE-BP403T-S1]

Marks: 75

Duration: 180 mins.

I Multiple Choice Questions (MCQs)

Answer all the questions.

Section Duration: 30 mins

- 1) When small amount of hydrophilic colloid is added to a hydrophobic sol then it, whereas when large amount of hydrophilic colloid is added to a hydrophobic sol then it
- | | | | | |
|---|---|---|---|-----|
| 1) Sensitizes the precipitation of latter, works as protective colloidal for latter | 2) Sensitizes the precipitation of former, works as protective colloidal for former | 3) Works as protective for latter, sensitizes the precipitation of latter | 4) Works as protective for former, sensitizes the precipitation of former | (1) |
|---|---|---|---|-----|
- 2) Electro dialysis method is employed in the colloidal chemistry for the purpose of
- | | | | | |
|-------------------|----------------|-----------------|------------------|-----|
| 1) Identification | 2) Preparation | 3) Purification | 4) Stabilization | (1) |
|-------------------|----------------|-----------------|------------------|-----|
- 3) Which one of the following physical property is NOT a rheological property?
- | | | | | |
|------------------|-------------------|--------------------|--------------|-----|
| 1) Body and slip | 2) Spread ability | 3) Surface tension | 4) Viscosity | (1) |
|------------------|-------------------|--------------------|--------------|-----|
- 4) The system that undergoes gel- to - sol transformation is known as
- | | | | | |
|------------|--------------------------|---------------------|-------------------|-----|
| 1) Elastic | 2) Permanent deformation | 3) Shear thickening | 4) Shear thinning | (1) |
|------------|--------------------------|---------------------|-------------------|-----|
- 5) The type of viscosity specified in Ostwald viscometer is
- | | | | | |
|-----------------------|----------------------|------------------------|--------------------------|-----|
| 1) Absolute viscosity | 2) Dynamic viscosity | 3) Kinematic viscosity | 4) Viscosity coefficient | (1) |
|-----------------------|----------------------|------------------------|--------------------------|-----|
- 6) Plug flow is NOT observed in cone and plate viscometer. The reason is
- | | | | | |
|---|---|--------------------------------------|--|-----|
| 1) Cleaning and filling of sample is easy | 2) Rate of shear is independent of the radius | 3) Shear can be maintained uniformly | 4) Temperature can be maintained uniformly | (1) |
|---|---|--------------------------------------|--|-----|
- 7) Creep testing is applied to analyse the viscoelastic property of
- | | | | | |
|-------------|------------|--------------|----------------|-----|
| 1) Emulsion | 2) Lotions | 3) Ointments | 4) Suspensions | (1) |
|-------------|------------|--------------|----------------|-----|

8) The greater the thixotropy indicates.....

1) Higher the physical stability of the suspension	2) Lower the physical stability of the suspension	3) No change in the stability of the suspension	4) Lower the chemical stability of the suspension
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(1)

9) Which of the following sieve should be placed at the bottom in the sieve shaker during size analysis with sieving?

1) 20 mesh sieve	2) 40 mesh sieve	3) 60 mesh sieve	4) 100 mesh sieve
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(1)

10) Water displacement method is used for the determination of

1) True density of porous powder	2) True density of non-porous powder	3) Granule density of weak particles	4) Granule density of hard particles
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(1)

11) If the porosity of spherical particles is%. It means the porosity is expended porosity

1) 26	2) 30	3) 48	4) 50
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(1)

12) At commercial scale, flow properties of powders can be improved by the following methods EXCEPT

1) By converting powder into granules of spherical shape	2) By choosing size of spherical particles in the range of 400 to 800 μm	3) By incorporating approximately 15%w/w of fine powder	4) By incorporating 1 %w/v of paraffin
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(1)

13) For the development of dosage forms, capsule shells are selected on the basis of

1) Bulk density	2) Tapped density	3) True density	4) Granule density
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(1)

14) Fisher sub-sieve seizer is use for the determination of

1) Particle size	2) Particle volume	3) Particles surface area	4) Particles density
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(1)

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

1) Absorption of water	2) Fluctuation in the ambient temperature	3) Presence of suspending agent	4) Volatilization of solids
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(1)

16) Catalyst is a substance

1) Which controls the rate of reaction	2) Which changes the rate of reaction with itself	3) Which controls the rate of reaction	4) None of the above
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(1)

	with partial change		completely undergoing a permanent chemical change		without itself undergoing a permanent chemical change				
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17) The units of first order rate constant is

1)	Moles Liter-1 Min-1	2)	Liter Moles-1 Min-1	3)	Moles Liter-1	4)	Min-1	(1)
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18) Which of the following expression is correct for the determination of shelf-life for a first order decomposition?

1)	$t_{1/2} = 0.105/K$	2)	$t_{90} = 0.105/K$	3)	$t_{90} = 0.693/K$	4)	$t_{1/2} = 0.693/K$	(1)
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19) Degradation of drugs due to exposure of light is known as

1)	Racemization	2)	Solvolysis	3)	Photolysis	4)	Pyrolysis	(1)
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20) Arrhenius equation is used to explain:

1)	Potential energy	2)	Kinetic energy	3)	Activation energy	4)	Surface free energy	(1)
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II Long Answers

Answer all the questions.

- 1) Define suspension. Discuss the factors influencing physical stability of suspensions (10)
- 2) Discuss in detail the coulter counter method for the determination of particle volume. (10)

III Short Answers

Answer all the questions.

- 1) Classify and discuss the characteristics of different colloids (5)
- 2) Explain the concept of Donnan membrane equilibrium (5)
- 3) Explain the principle of cup and bob viscometer with labelled diagram (5)
- 4) Explain in detail about plastic and pseudoplastic flow curves with examples (5)
- 5) Describe the methods for evaluation of emulsion stability (5)
- 6) Give pharmaceutical applications of zero order kinetics. Deduce the units for specific zero order rate constant (5)
- 7) Explain the effect of hydrolysis on the stability of drugs with their preventive methods. (5)

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