Question Paper

Exam Date & Time: 04-May-2019 (02:00 PM - 05:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

BPharm Semester IV End Semester Examination May 2019
Exam Date:04-05-2019
Physical Pharmaceutics-II [PCE-BP403T]

ks: 75 **Duration: 180 mins.**

I Multiple Choice Questions (MCQs)

nswer all the questions. Section Duration: 30 mins

1) The exponential equation used in rheology FN= η' G , and the relationship between N for Newtonian(n_1), pseudo-plastic(n_2) and dilatant system (n_3) is---------- (1)

$n_1 > n_2 > n_3$

$n_2 < n_3 < n_1$

$n_2 > n_1 > n_3$

$n_1 < n_2 < n_3$

2) On addition of electrolytes, the viscosity of water ---------- (1)

Decreases

Increases

Remains constant

Varies based on shear rate

3) Curved rheogram is observed in---------- (1)

Plastic system

Pseudo-plastic system

Thixotropic materials

Non Newtonian systems

4) The Heckel equation is based on the assumption that densification of powder under force ------- (1)

Follows plastic deformation

Follows fragmentation

Follows first order kinetics

Follows elastic deformation

5) The working principle of capillary viscometer is based on---------- (1)

Stoke's law

Newton's law

Ostawald's law

Poiseullies law

6) Suspended particles become flocculated in a suspension, because --------- (1)

Particles are closely packed

Attractive forces between particles are appreciable

Repulsive forces between particles are appreciable

Particles are of larger size

7) Structured vehicle is included in the formulation of a suspension, in order to: -------- (1)

Decrease the interfacial tension

Prevent the caking of the sediment

Prevent the sedimentation of particles

Impart the charge to the particles

8) Vanishing cream shows-------behaviour. (1)

Pseudo-plastic flow

Newtonian flow

Dilatant flow

Plastic flow

9) Brownian movement of particle ---------sedimentation. (1)

Assist

Promote

Prevent

Increase

10) Creaming in emulsion is a ---------- process (1)

Reversible

Irreversible

Initial instability

None of the above

11) Following are the examples of Electrical properties of colloidal dispersion EXCEPT. (1)

Light scattering

Electrophoresis

Sedimentation potential

Electro-osmosis

12) Fisher sub-sieve seizer is use for the determination of ..... (1)

Particle size

Particle volume

Surface area of particles

Density of particles

For which of the following conditions of dispersion medium Stoke's law can be applied, (1)

If the Reynolds number is between 0.01 to 0.20

If the Reynolds number is between 0.21 to 0.40

If the Reynolds number is between 0.41 to 0.60

If the Reynolds number is between 0.61 to 0.80

Which powder will be having higher compressibility? (1)

A powder with high bulk density

A powder with high tapped density

A powder with high true density

None of the above

15) Tapped density of a powder is 3.5 g/mL, the bulk density of that powder will be: (1)

Equal to 3.5 g/mL

Less than 3.5 g/mL

More than 3.5 g/mL

None of the above

16) Which expression is correct for the reaction that follows first order kinetics? (1)

$t_{90} = 0.152t_{1/2}$

$t_{90} = 0.2t_{1/2}$

$t_{90} = 0.9t_{1/2}$

$t_{90} = t_{1/2}$

17) Which of the following reaction is observed in the degradation of drugs having beta-lactam ring? (1)

Oxidation

Hydrolysis

Photolysis

Decarboxylation

18) Degradation of drugs due to exposure of light is known as ..... (1)

Racemization

Solvolysis

Photolysis

Pyrolysis

19) Arrhenius equation is used to explain: (1)

Order of reaction

Potential energy

Kinetic energy

Activation energy

20) A pile of granules under test has given the base of 6.8 cm diameter height of 2.8 cm. The angle of repose of this sample will be ..... (1)

22.38°

39.47°

50.53°

67.62°

II Long Answers

Answer all the questions.

1) Write about salient features of lyophilic colloids. (10)

2) Explain the factors affecting rate of reaction. (10)

III Short Answers

Answer all the questions.

1) Discuss on 'Flocculation' in emulsion. (5)

2) Explain the flow behaviour of plastic system with rheogram. (5)

3) Discuss the principle of 'Falling sphere viscometer' in the determination of viscosity of Newtonian liquid. (5)

4) Define electric double layer and show a labelled electric double layer at the surface of solid-liquid interface. (5)

5) Write the pharmaceutical applications of micromeritics. (5)

6) Explain factors affecting flowability of powder. (5)

7) Discuss physical degradation of dosage forms with their preventive methods. (5)

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