Question Paper

Exam Date & Time: 19-May-2023 (10:00 AM - 01:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

Physical Pharmaceutics II (Theory) [PCE-BP403T-S3]

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

I Multiple Choice Questions (MCQs)

Answer all the questions. Section Duration: 30 mins

1) Electrodialysis is used, when impurities in a sol are (1)

- Amphiphiles
- Colloids
- Electrolytes
- Nonelectrolytes

2) Silica gel is an example for the type of gel: (1)

- Dilatant
- Elastic
- Rigid
- Thixotropic

3) Electro dialysis method is employed in the colloidal chemistry for the purpose of (1)

- Identification
- Preparation
- Purification
- Stabilization

4) Gold number of protective colloid - Gelatin (1)

- 0.005-0.01
- 0.5-0.1
- 1-2
- 10-20

5) In which types of powder the use of glidants are preferred (1)

- Powder with angle of repose value more than 40
- Powder with angle of repose value 30 to 40
- Powder with angle of repose value 25 to 30
- Powder with angle of repose value less than 25

6) In the formulation development of emulsions and suspensions, what type of diameter is important? (1)

- Length number
- Projected
- Sieve
- Stokes

7) Disadvantages of sieving method for size distribution analysis (1)

- Agglomerates can be identified
- Attrition of powder is possible
- Large numbers of sieve are required
- Tedious and time consuming

8) While using sedimentation method for size analysis, addition of a deflocculating agent to a suspension is necessary in order to (1)

- Accelerate the process of sedimentation
- Make the particles spherical
- Prevent the aggregation
- Satisfy Reynolds number

9) Which one of these distributions is more important in the design of dosage forms? (1)

- Gaussian
- Normal
- Number
- Weight

10) A graph is plotted by taking time on X axis and concentration of reactant on Y axis for a reaction following a pseudo first order. The pattern of the graph is (1)

- Curve
- Hyperbola
- Parabola
- Straight line

11) Usually, the rate of a chemical reaction may be enhanced by (1)

- Cooling the reaction mixture
- Increasing the rate of stirring
- Raising the temperature of the reaction mixture
- Using stoichiometric quantities of each reactant

12) On a product, the label states 'protect from light' what type of decomposition does the product undergo? (1)

- Carboxylation
- Decarboxylation
- Hydrolysis
- Oxidation

13) During storage, crystal growth is observed in a suspension due to (1)

- Absorption of water
- Fluctuations in the ambient temperatures
- Presence of suspending agent
- Volatilization of solids

14) On a commercial scale, emulsions are prepared by: (1)

- Centrifugation
- Dialysis
- Freezing

Homogenization

15) An emulsifier is considered to be ideal, if it is soluble in: (1)

Aqueous, oil and gas phases
Aqueous phase only
Both aqueous and oil phase
Oil phase only

16) Brook field viscometer is an example of type: (1)

Cone and plate
Extrusion
Rotating sphere
Rotating spindle

17) Which one of the following physical property is NOT a rheological property? (1)

Body and slip
Spread ability
Surface tension
Viscosity

18) Deflocculated suspension with high concentration of the dispersed solids exhibits the flow of type: (1)

Dilatant
Newtonian
Plastic
Pseudoplastic

19) Dilatant flow is characterized as a reverse phenomenon of: (1)

Newtonian flow
Plastic flow
Pseudo plastic flow
Rheopexy

20) A maximum sedimentation volume will be obtained when zeta potential is: (1)

Negative
Neutral
Positive
Zero

II Long Answers

Answer all the questions.

1) Explain the various methods by which drugs can degrade. How drugs are stabilized against such degradation. (10)

2) Write a detailed note on the physical stability of the suspension and its importance. (10)

III Short Answers

Answer all the questions.

1) Define 1) Tapped Density 2) Granule Density 3) Bulk Density 4) Porosity 5) Angle of Repose (5)

2) Explain the working principle of cup and bob viscometer with a labelled diagram. (5)

3) Define Rheology, and explain the non-Newtonian type of flow. (5)

4)	Explain the factors which improve the physical stability of the emulsion	(5)
5)	Explain the concept of DLVO theory with energy curve	(5)
6)	Enlist various methods for purification of colloidal dispersion. Explain in detail any one method.	(5)
7)	Define True Density. Explain a method used to determine true density of non-porous powder.	(5)

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