BRAINWARE UNIVERSITY

Term End Examination 2024-2025

Programme – B.Pharm-2020/B.Pharm-2021/B.Pharm-2022/B.Pharm-2023

Course Name – Physical Pharmaceutics II

Course Code - BP403T

(Semester IV)

Full Marks : 75 **Time : 3:0 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question) 1 x 20=20

1. *Choose the correct alternative from the following :*

(i) Select the following is a colloid.

a) Vinegar b) Paint
c) Muddy Water d) Sugar solution

(ii) Select one of the following dispersions does not have liquid continuous phase.

a) Nanosuspension b) Microemulsion
c) Gel d) Foam

(iii) Identify the following would not be described as a colloid.

a) Saltwater b) Smoke
c) Fog d) Foam

(iv) Select one of the following colloids is difficult to prepare.

a) Association b) Hydrophilic
c) Hydrophobic d) Lyophilic

(v) Name the type of colloidal dispersion to which electrolytes are normally added in small quantities to stabilize.

a) Association b) Lyophilic
c) Lyophobic d) Micellar

(vi) Select one of the following properties is extensively applied for determining the molecular weight of polymers.

a) Depression of freezing point b) Elevation of boiling point
c) Lowering of vapour pressure d) Osmotic pressure

(vii) In the determination of the gold number, the endpoint is identified by:

a) Measuring the change in particle size b) Noting sedimentation volume of gold
c) Obseving the color change d) Weighing of the precipitate

(viii) Surfactant solutions are named as association colloids when their concentrations are:

a) Insufficient to saturate the bulk phase
b) Less than critical micellar concentration (CMC)
c) More than CMC
d) Equal to CMC

(ix) Flocculated suspension relates _____ flow of fluid type.

a) Dilatant
b) Plastic flow
c) Psedo plastic flow
d) Newtonian

(x) A limitation that is not related to the falling sphere viscometer is.

a) Applicable to only less viscous liquids
b) Large volume of sample is required
c) Needs the sample to be transparent
d) Plug flow

(xi) In general, Newtonian fluids are explained in terms of viscosity and a corresponding expression in non- Newtonian fluids is.

a) apparent
b) dynamic
c) intrinsic
d) kinematic

(xii) Express the viscometer type which is not an one point viscometer, but can be used for the same purpose.

a) cup and bob
b) falling sphere
c) Ostwald
d) rolling ball

(xiii) Fluidity is a term related with Newtonian fluids and a equivalent term in plastic flow fluids is.

a) apparent viscosity
b) flexibility
c) mobility
d) plastic viscosity

(xiv) Identify the correct one, the dilatant flow is a reverse phenomenon of _____.

a) newtoniam flow
b) plastic flow
c) pseudoplastic flow
d) rheopexy

(xv) In an emulsion, the velocity of sedimentation is found to be negative. Predict that the creaming is

a) absent
b) in both the directions
c) in downward direction
d) in upward direction

(xvi) The density of the dispersed phase is more than that of the dispersion medium. According to the Stokes' equation, the creaming is, Choose the correct one

a) at the center of the emulsion
b) in both the directions
c) in downward direction
d) in upward direction

(xvii) When oil and water are triturated together, the interfacial free energy was observed to be increased. What does it predict

a) decrease in the interfacial tension
b) decrease in the stability
c) increase in stability
d) stable film formation

(xviii) The HLB range of an emulsifier employed in the preparation of water-in-oil emulsion is

a) 3 to 6
b) 7 to 12
c) 13 to 15
d) more than 15

(xix) In case of emulsions, the viscosity immediately after preparation and during storage, respectively, will be:

a) higher and will gradually decrease
b) higher and gradually increase
c) lower and gradually decrease
d) lower and gradually increase

(xx) In the stability of emulsion, predict which instability step is prevented by emulsifiers

a) breaking
b) coalescence
c) creaming
d) flocculation

Group-B

(Short Answer Type Questions) 5 x 7=35

2. Explain the potential energy curve of suspensions. (5)

3. Define hydrophobic colloids and describe its preparation methods. (5)

4. Describe the methods for evaluation of emulsion instability. (5)
5. State the causes for instability of emulsions. (5)
6. Construct with the help of neat diagram explain the principle and working of coulter counter particle size determination method. (5)
7. Explain in brief the terms elementary, non-elementary, order and molecularity of reaction. (5)

OR

Explain the graphical and half life method for determination of order of reaction. (5)

8. Explain the factors influencing the rate of a reaction. (5)

OR

Explain the preventive measures for chemical degradation due to oxidation. (5)

Group-C

(Long Answer Type Questions) 10 x 2=20

9. Write a short note on sieve technique, angle of repose, bulk density, Carr's compressibility index and surface area. (10)
10. Explain chemical degradation of pharmaceutical compounds due to hydrolysis and its preventive measures. (10)

OR

Illustrate the procedure for accelerated stability testing and prediction of shelf life of a drug product. (10)

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