



BRAINWARE UNIVERSITY

Term End Examination 2025-2026

Programme – B.Pharm-2020/B.Pharm-2021/B.Pharm-2023/B.Pharm-2024

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 one of the following dispersions does not have liquid continuous phase.

a) Nanosuspension	b) Microemulsion
c) Gel	d) Foam
- (ii) Select one of the following colloids is difficult to prepare.

a) Association	b) Hydrophilic
c) Hydrophobic	d) Lyophilic
- (iii) 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
- (iv) Identify which type of gel is silica gel.

a) Dilatant	b) Elastic
c) Rigid	d) Thixotropic
- (v) Identify the characteristic of the dispersed phase is responsible for the increased viscosity of a hydrophilic colloidal dispersion.

a) Charge	b) Shape
c) Size	d) Surface area
- (vi) 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
- (vii) Select the protective ability of colloids is measured as:

a) Zeta potential	b) Streaming potential
c) Gold number	d) Tyndall effect

- (viii) Select the preparation method by which lyophobic colloids can be prepared:
- a) Chemical method
 - b) Peptization method
 - c) Electric arc method
 - d) Simple dispersion
- (ix) Flocculated suspension relates _____ flow of fluid type.
- a) Dilatant
 - b) Plastic flow
 - c) Pseudo plastic flow
 - d) Newtonian
- (x) Fluidity is a term related with Newtonian fluids and an equivalent term in plastic flow fluids is.
- a) apparent viscosity
 - b) flexibility
 - c) mobility
 - d) plastic viscosity
- (xi) Select which one of the following is not a rheological property of a semisolid dosage form.
- a) body and slip
 - b) spreadability
 - c) surface tension
 - d) viscosity
- (xii) Select the option that is not related to intermolecular attractions.
- a) dipole-dipole moment
 - b) hydrogen bonding
 - c) ion-ion interactions
 - d) molecular dispersion
- (xiii) Express the system that undergoes gel-to-sol transformation is known as.
- a) elastic
 - b) permanent deformation
 - c) shear thickening
 - d) shear thinning
- (xiv) Select the reason for the calibration of an instrument.
- a) most of the instruments are not reliable
 - b) to calculate the constant for the instrument
 - c) to calculate the relative property
 - d) to correct the errors in the working of an instrument
- (xv) Predict the creaming direction in an emulsion in which the velocity of sedimentation is found to be negative
- a) absent
 - b) in both the directions
 - c) in downward direction
 - d) in upward direction
- (xvi) Oil in water emulsions normally cream, choose the correct one
- a) up first & down then
 - b) upward
 - c) downward
 - d) none of these
- (xvii) Determine the stage where the distribution of globules is not uniform in an emulsion.
- a) breaking
 - b) caking
 - c) coalescence
 - d) creaming
- (xviii) Predict an emulsifier which is considered to be ideal, if it is soluble in
- a) aqueous, oil and gas phases
 - b) aqueous phase only
 - c) both aqueous and oil phase
 - d) oil phase only
- (xix) Choose which one of the following statements is true regarding addition of preservatives in an emulsion.
- a) amount of the preservative added is below minimum inhibitory concentration
 - b) emulsifier should enhance the preservative action
 - c) preservatives remain in the aqueous phase
 - d) preservatives stay in the oil phase
- (xx) Auxiliary emulsifying agents are used to stabilize the emulsion. They act on the principle
- a) adjusting the HLB value
 - b) strengthening the nonpolar tails of the emulsifier
 - c) strengthening the polar heads of the emulsifier
 - d) thickening the continuous phase

Group-B

(Short Answer Type Questions)

5 x 7 = 35

2. Describe the protective colloids.
3. Describe the kinetic properties of colloids.
4. State the physical stability of colloidal system.

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(5)
(5)
(5)

5. Illustrate the procedure to measure thixotropy.
6. Compare between flocculated and deflocculated suspensions.
7. Explain in brief the fundamental properties of powders

(5)
(5)
(5)

OR

- Construct about liquid and mercury displacement method.
8. Explain chemical degradation of pharmaceutical compounds due to photolysis and racemization.

(5)
(5)

OR

- Explain stability and illustrate the storage conditions for stability evaluation of pharmaceutical products.

(5)

Group-C

(Long Answer Type Questions)

10 x 2=20

9. Discuss various types of flow curves used in rheology.
10. Explain chemical degradation of pharmaceutical compounds due to hydrolysis and oxidation.

(10)
(10)

OR

- Explain stability and illustrate the storage conditions along with various climate zones for stability evaluation of pharmaceutical products.

(10)