

18/12/2023

Seat Number

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DAGDU-05

BP-403T

Physical Pharmaceutics-II

(724403)

Total Pages : 6]

Time : 3 Hours

Max. Marks : 75

Note : (1) Do not write anything on question paper except Seat No.

(2) Graph or diagram should be drawn with the black ink pen being used for writing paper or black HB pencil.

(3) Figures to the right indicate full marks.

1. (A) Multiple choice questions :

10

(1) Tyndall effect was used by 2 sigmondy in devising :

- (a) Ultramicroscope
- (b) Electron microscope
- (c) Simple microscope
- (d) None of the above

(2) Which of the following is correct equation for Stokes law :

- (a) $v = 2r^2(\rho - \rho_0)$
- (b) $v = \frac{2r^2(\rho - \rho_0)g}{9\eta_0}$
- (c) $v = \frac{2r^2}{9\eta_0}$
- (d) $v = \frac{\eta_0(\rho - \rho_0)}{9}$

P.T.O.

- (3) Rheology is the science of flow and deformation of materials under influence of
- (a) Strain
 - (b) Pressure
 - (c) Stress
 - (d) Temperature
- (4) Which of the following is not a viscometer ?
- (a) Cup and bob viscometer
 - (b) Cup and plate viscometer
 - (c) Ostwald's viscometer
 - (d) Brookfield viscometer
- (5) A change in type of emulsion from o/w to w/o and vice versa is :
- (a) flocs formation
 - (b) creaming
 - (c) phase inversion
 - (d) deflocculation

- (6) is measure of void spaces in material.
- (a) Viscosity
 - (b) Weight
 - (c) Density
 - (d) Porosity
- (7) Which of the following is not a method to determine angle of repose ?
- (a) Fix funnel method
 - (b) Tilting box method
 - (c) Revolving tube method
 - (d) Fix cone method
- (8) Rate of reaction is independent of concentration of reactant for :
- (a) Zero order reaction
 - (b) First order reaction
 - (c) Second order reaction
 - (d) None of the above

(9) Angle of repose less than 25 indicates flow of powder is :

- (a) Poor
- (b) Very poor
- (c) Excellent
- (d) Good

(10) Brownian movement depends on :

- (a) Density of dispersed phase
- (b) Density of dispersed medium
- (c) Viscosity of dispersed medium
- (d) All of the above

(B) Answer the following questions (2 marks each) :

10

- (i) Define sedimentation
- (ii) Explain the term rheology
- (iii) Enlist different methods for particle size estimation
- (iv) What is Tyndall effect ?
- (v) Define shelf life.

2. Solve any *two* :

20

- (i) Define rheology. Write down classification of viscometers.
- (ii) Explain in detail Ostwald's viscometer.
- (iii) Define micromeritics. Explain in detail any *two* methods of determining particle size with diagram.
- (iv) Define emulsion and explain type of emulsion. Write a short note on theories of emulsification.

3. Solve any *seven* :

35

- (i) Explain in detail accelerated stability testing.
- (ii) Distinguish between flocculated and deflocculated suspension.
- (iii) Define :
 - (a) True solution
 - (b) Coarse dispersion
 - (c) Colloidal solution
 - (d) Bulk density
 - (e) Carr's compressibility index.

- (iv) Explain in detail half life and shelf life determination for zero order reaction.
- (v) Write a short note on derived properties of powders.
- (vi) Write a note on deformation of solids.
- (vii) Explain in detail factors affecting sedimentation rates.
- (viii) Write a note on factors affecting the chemical degradation of pharmaceutical products.
- (ix) Define colloids. Explain classification of colloids.