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BP 403 T

Roll No. of candidate | | | | | | | | | | |

2020

B.Pharm. 4th Semester End-Term Examination

PHYSICAL PHARMACEUTICS — II

Full Marks – 75 Time – Three hours

The figures in the margin indicate full marks for the questions.

1. Answer the following (MCQ) : (20 × 1 = 20)

(i) Brownian movement of particles

(a) Assists sedimentation

(b) Prevents sedimentation

(c) Increases sedimentation

(d) Does not affect sedimentation

(ii) Sieving method is used for size distribution analysis of powders. The disadvantage of this method is

(a) Agglomerates can be identified

(b) Attrition of powder is possible

(c) Large number of sieves are required

(d) Tedious and time consuming

(iii) Creep test is applied to evaluated the viscoelastic properties of

(a) Ointments (b) Suspensions

(c) Emulsions (d) Lotions

(iv) According to the Stokes equation, the sedimentation rate is inversely proportional to

(a) Viscosity of the medium

(b) Diameter of the particle

(c) Density of the particle

(d) All of the above

(v) Flocculated suspensions exhibit the flow of a type

(a) Dilatant (b) Newtonian

(c) Plastic (d) Pseudoplastic

(vi) The instrument used for measuring particle volume is

(a) Coulter counter (b) Hempel burette

(c) Andreason pipette (d) Helium densitometer

(vii) A limitation that is NOT related to the falling sphere viscometer

(a) Applicable to only less viscous liquids

(b) Large volume of sample is required

(c) Needs the sample to be transparent

(d) Plug flow

(viii) Dispersion containing dispersed particles of about 1 to 100 μm size are referred as

(a) Coarse dispersion (b) Colloidal dispersion

(c) Flocculated dispersion (d) Non-flocculated dispersion

(ix) In non-flocculated suspension, the particle exist as ————

(a) Separate entities (b) Net work like structure

(c) Both (a) and (b) (d) None of these

(x) Addition of alcohol to a hydrophilic colloids leads to

(a) Crystallization (b) Hydration

(c) Precipitation (d) Stabilization

(xi) Which of the following does not play a part in determining the rate of a reaction?

(a) Temperature (b) Solvent

(c) The presence of a catalyst (d) The equilibrium constant

(xii) Oil in water emulsions usually show creaming in

(a) Upward direction

(b) Downward direction

(c) First upward and then downward direction

(d) First downward and then upward direction

(xiii) Which of the following apparatus can be used for determining the viscosity of Non-newtonian fluids?

(a) Ostwald viscometer (b) Brookefield viscometer
(c) Falling sphere viscometer (d) Ubbelohde viscometer

(xiv) 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

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

(a) Cooling the reaction mixture
(b) Increasing the rate of stirring
(c) Raising the temperature of the reaction mixture
(d) Using stoichiometric quantities of each reactant

(xvi) The storage direction on a parenteral solution specify 'store in a cool place'. This may be stored in

(a) An air-conditioned area at 10°C
(b) A refrigerator at 15°C
(c) A place whose temperature is set at 5°C
(d) Room temperature, at 25°C

(xvii) Electrodialysis method is employed in the colloidal chemistry for the purpose of

(a) Identification (b) Preparation
(c) Purification (d) Stabilization

(xviii) The supernatant liquid in a deflocculated suspension is

(a) Clear (b) Turbid
(c) Transparent (d) Yellow

(xix) Porosity of a porous powder can be defined as

(a) Bulk volume/Void volume (b) Void volume/Bulk volume
(c) True volume/Bulk volume (d) Bulk volume/True volume

(xx) As the temperature increases, the degradation of drug:

(a) Increases (b) Decreases
(c) Remains constant (d) Stops

2. Answer any *seven* questions : $(7 \times 5 = 35)$

(a) Classify Suspension. Describe the factors influencing the settling of suspension. $(1 + 4 = 5)$

(b) Explain the Coulter Counter method with the help of a labeled diagram. (5)

(c) Write the principle and working of Ostwald viscometer. (5)

(d) Describe the effect of temperature and light on the stability of pharmaceutical products. (5)

(e) Describe the preparation methods for colloids. (5)

(f) What is creaming in emulsions? How is it prevented in pharmaceutical emulsions? (2 + 3 = 5)

(g) List different types of densities of powders/granules. Write one experimental method for determination of density. (1 + 4 = 5)

(h) Differentiate between Newtonian and Non-newtonian systems with suitable examples. (5)

(i) Describe the working and principle of Cub and bob viscometer witha labeled diagram. (5)

3. Answer any *two* questions : (2 × 10 = 20)

(a) Describe the techniques applied for purification of colloids. (10)

(b) Discuss the signs of instability in an emulsion and suggest the preventive measures. (10)

(c) Briefly describe the different methods used for determination of particle size of powders. Discuss in detail the Andreason pipette method. (5 + 5 = 10)