Total No. of printed pages = 7

BP 403 T

Roll No. of candidate

2019

B.Pharm. 4th Semester End-Term Examination

PHYSICAL PHARMACEUTICS — II THEORY

(New Regulation)

(w.e.f 2017-2018)

Full Marks – 75   Time – Three hours

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

1. Multiple choice questions (MCQ). Answer ALL questions :   (20 × 1 = 20)

   (i) The molecular weight of dispersed solids in a colloidal system can be determined using an instrument:
      (a) Ultracentrifuge
      (b) Ultrafilters
      (c) Ultramicroscope
      (d) Zeta meter

   (ii) Electrodialysis is used, when impurities in a sol are
      (a) Amphiphiles
      (b) Colloids
      (c) Electrolytes
      (d) Nonelectrolytes

[Turn over

(iii) Under microscope, colloid particles appear as

    (a)   Bright specks against dark background

    (b)   Concentric rings

    (c)   dark specks against bright background

    (d)   fluorescent specks

(iv) Flocculated suspensions exhibit the flow of a type

    (a)   Dilatant

    (b)   Newtonian

    (c)   Plastic

    (d)   Pseudoplastic

(v) Dilatant flow is characterized as a reverse phenomenon of

    (a)   Newtonian flow

    (b)   Plastic flow

    (c)   Pseudoplastic flow

    (d)   Rheopexy

(vi) In Stokes' relationship, a parameter that changes the velocity of settling is

    (a)   Density of the liquid

    (b)   Density of the particle

    (c)   Radius of the particle

    (d)   Viscosity of the medium

(vii) Suspended particles become flocculated in a suspension because

    (a) Attractive forces between particles are appreciable

    (b) Particles are packed closely

    (c) Repulsive forces between particles are appreciable

    (d) Vehicles reject the particles

(viii) A maximum sedimentation volume will be obtained when zeta potential is

    (a) Negative

    (b) Neutral

    (c) Positive

    (d) Zero

(ix) For an ideal suspension, the sedimentation volume should be

    (a) Equal to one

    (b) Less than one

    (c) More than one

    (d) Zero

(x) Function of emulsifier is

    (a) Develop a condensed membrane thin layer film

    (b) Increase the repulsions between globules coming together

    (c) Increase the surface free energy

    (d) Reduce the interfacial tension

(xi) The HLB range of emulsifier for water in oil emulsion is

    (a) 3-6

    (b) 7-12

    (c) 13-15

    (d) more than 15

(xii) Emulsifier is ideal, if it is soluble in

    (a) Aqueous, oil and gas phase

    (b) Aqueous phase

    (c) Aqueous and oil phase

    (d) Oil phase

(xiii) Porosity of a porous powder is defined as

    (a) bulk volume / void volume

    (b) void volume / bulk volume

    (c) void volume / true volume

    (d) true volume / bulk volume

(xiv) High Angle of repose values indicates

    (a) Bulk density of the granules

    (b) Porosity of the granules

    (c) Roughness of the granules surface

    (d) Smoothness of the granules surface

(xv) One micrometer is equal to

    (a) 10^{-6} cm

    (b) 10^{-3} cm

    (c) 10^{-6} m

    (d) 10^{-3} m

(xvi) In coulter Counter apparatus, when particles pass through orifice

(a) Conductance between the electrodes increases

(b) Electronic scanners produce photographs for volume measurement

(c) Resistance between the electrodes increases

(d) Sedimentation increases

(xvii) Accelerated stability studies are used to determine

(a) Energy of the activation of the reaction

(b) k value at elevated temperature

(c) k value at room temperature

(d) Shelf life of the product

(xviii) On a product label claim is "protect from light". What decomposition can happen

(a) Carboxylation

(b) Decarboxylation

(c) Hydrolysis

(d) Oxidation

(xix) Prevention of rate of hydrolysis is mainly done by

(a) Buffer

(b) Complexation

(c) Removal of water

(d) Suppression of solubility

(xx) Label claim of parenteral preparation indicates "store at cool place" means store in

    (a) Air conditioned area at 10°C

    (b) Refrigeration at 15°C

    (c) Place where temperature is set at 5°C

    (d) Room temperature, 25°C

2. Long answers (Answer *two* out of *three*) : $(2 \times 10 = 20)$

    (a) What do you mean by micromeritics? Write down the applications of micromeritics. Describe the principle and working of Coulter-counter method.

    (b) What do you mean by Colloidal dispersions? Describe the classifications of Colloidal dispersions with examples.

    (c) What is suspension? Differentiate between flocculated and deflocculated suspension. Write the characteristics of ideal suspension. Write about the interfacial properties of suspended particles.

3. Short answers (Answer 7 out of 9) $(7 \times 5 = 35)$

    (a) Write about the chemical degradation of drugs and prevention, methods.

    (b) Explain the sedimentation of suspension with the help of Stokes' law.

    (c) What is emulsion? Explain the problems related to stability of emulsion and its prevention.

    (d) Explain the principle and working of andreasen apparatus.

(e) Describe the Newtonian flow and Non-Newtonian flow with the help of graphs.

(f) Describe the kinetic property of colloids.

(g) Write in details about Accelerated Stability Studies for stability testing.

(h) What do you mean by thixotropy'? Write down the importance of thixotropy in pharmacy.

(i) What is angle of repose? Explain the importance of flow properties of powders.