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B. Pharma. (Fourth Semester)
EXAMINATION, MAY-JUNE, 2022
(New Course)
PHYSICAL PHARMACEUTICS-II

Time : Three Hours]   *[Maximum Marks : 75*

Note   : Attempt all sections as directed.

(Section-A)
(Multiple Choice Questions)

(1 mark each)

Note- Attempt all questions.

Choose the most appropriate answer.

1. The Sedimentation volume of an ideal suspension should be

    (A)   Equal to 1

    (B)   Less than 1

    (C)   More than 1

    (D)   Equal to 0

2. Which of the following equipment is used for determining the particle size distribution by sedimentation method?

    (A)   Microscope

    (B)   Coulter Counter

    (C)   Andreason pipette

    (D)   Sieve set

3. Which of the following statement is not true about suspensions?

    (A)   It is an oral preparation

    (B)   It does not include a preservative

    (C)   It contains a suspending agent

    (D)   It is an injectable preparation.

4. Angle of repose, less than 25° of the granules indicates _____ flow

    (A)   Very poor

    (B)   Poor

    (C)   Good

    (D)   Excellent

5. Which of the following instrument is used for measuring particle volume?

    (A)   Hempel burette

    (B)   Helium densiometer

    (C)   Coulter Counter

    (D)   Andreason Pipette

6. Which of the following equation is used for predicting the shelf life of a drug product?

(A) BET Equation

(B) Henderson-Hasselbalch Equation

(C) Michaelis-Menten Equation

(D) Arrhenius Equation

7. The biological half life of a drug (1st order kinetics) is given by

(A) $\dfrac{1}{K}$

(B) $\log K$

(C) $\dfrac{0.693}{K}$

(D) $\dfrac{2.303}{K}$

8. Molecularity of a reaction can be

(A) Zero

(B) One

(C) One and Half

(D) Half

9. It the rate equation is $\dfrac{-dc}{dt} = Kc$ then order of reaction is

(A) First Order

(B) Second Order

(C) Zero Order

(D) Pseudo first Order

10. Total surface area of Powders can be determined by

(A) Coulter Counter

(B) Sorptometer

(C) Shear Box

(D) Andreason pipette

11. Porosity of porous powder is defined as

(A) Void Volume/True Volume

(B) Bulk Volume/Void Volume

(C) True Volume/Bulk Volume

(D) Void Volume/Bulk Volume

12. Phase volume ratio of _____ is likely to give most stable emulsions

(A) 74 : 26

(B) 50 : 50

(C) 52 : 48

(D) 25 : 75

13. In _____ emulsion creaming is in downward direction

(A) O/W

(B) W/O

(C) Both A & B

(D) None of the above

14. The protective property of colloids is expressed in terms of

   (A) Gold Number

   (B) Particle Number

   (C) Reynolds Number

   (D) Zeta Potential

15. Movement of charged particle through a liquid under the influence of an applied potential difference is called as

   (A) Electrosmosis

   (B) Electrophoresis

   (C) Sedimentation Potential

   (D) Streaming Potential

16. _____ shows pseudo plastic flow

   (A) A suspension of zinc oxide in mineral oil

   (B) Printing inks

   (C) Water soluble mucilages and gums

   (D) Viscous Pastes

17. Which of the following is also known as shear thinning systems?

   (A) Plastic materials

   (B) Pseudo plastic materials

   (C) Dialatant materials

   (D) Bingham Bodies

18. Viscosity of Non-Newtonian fluid can be determined by

   (A) Ostwald's Viscometer

   (B) Falling Sphere Viscometer

   (C) Cap and Bob Viscometer

   (D) Ubbelohde Viscometer

19. Which of the following is an unitless quantity?

   (A) Stress

   (B) Strain

   (C) Dipole moment

   (D) Elastic modulus

20. Which of the following is true about Lyophobic colloids?

   (A) Contains mostly organic molecules

   (B) Are stable

   (C) Are reversible

   (D) Also known as solvent hating colloids

(Section- B)

(Long Answer Type Questions)

(2×10=20 marks)

Note : Attempt any two questions. Each question carries 10 marks.

1. Define Newtonian and Non Newtonian flow. Explain the types of Non Newtonian flow along with rheograms and examples.

2. What are the fundamental properties of powders? Explain various methods for the determination of particle size and particle size distribution.

3. Describe various factors affecting the stability of Pharmaceutical product and also give preventive measures to protect the product or drug degradation.

(Section - C)

(Short Answer Type Questions)

(7×5=35 marks)

Note :   Attempt any seven questions. Each question carries 5 marks.

1. What are the factors on which rate of settling in a suspension depends?

2. Define Kinematic viscosity. How temperature affects the flow of fluid?

3. What is plastic and elastic deformation? Write Heckle equation.

4. Differentiate between flocculated and deflocculated suspensions.

5. Define the following.

   (A)   Bulk density

   (B)   Ture density

   (C)   Porosity

   (D)   Bulkines

   (E)   Granule Density

6. Differentiate between order and molecularity of reaction. Write the units of basic rate constants of zero, first and second order reactions.

7. Classify colloids. Write their characteristic features.

8. How shelf life of a pharmaceutical product is determined?

9. What is HLB scale? How the type of emulsion formed depends on the HLB value of emulsifier?