

B.Pharm. (CBCS Pattern) Semester-IV
BP403T - Physical Pharmaceutics-II

P. Pages : 3

Time : Three Hours



GUG/W/24/11987

Max. Marks : 75

- Notes :
1. All questions are compulsory.
 2. All questions carry equal marks.
 3. Diagrams and Chemical equation should be given wherever necessary.
 4. Illustrate your answers wherever necessary with the help of neat sketches.

1. Multiple Choice Questions.

**20x1
=20**

- i) Andreasen pipette is widely used method to determine particle size distribution by
 - a) Microscopy method
 - b) Sedimentation method
 - c) Sieving method
 - d) All of the above
- ii) Which of the following method/s used for determination of order of reaction?
 - a) Graphic method
 - b) Substitution method
 - c) Half-life method
 - d) All of the above
- iii) The effect of temperature on rate of reaction is explained by
 - a) Arrhenius equation
 - b) Nernst equation
 - c) Dielectric constant
 - d) All of the above
- iv) Dry Gum method is also known as
 - a) Continental method
 - b) English method
 - c) Bottle method
 - d) Forbe's method
- v) The porosity of powder is equal to...
 - a) Ratio of void volume to bulk volume
 - b) Sum of void volume to bulk volume
 - c) Product of void volume to bulk volume
 - d) Void volume only
- vi) The distance between two tangents on opposite sides of the particle parallel to some fixed direction.
 - a) Feret's diameter
 - b) Martin diameter
 - c) Projected diameter
 - d) Stoke's diameter
- vii) When rate is independent of the reactant concentration, then it is called
 - a) Zero order reaction
 - b) Pseudo zero order reaction
 - c) First order reaction
 - d) Second order reaction
- viii) The unit of activation energy is
 - a) kJ/mol
 - b) J
 - c) N/m
 - d) mm

- ix) For a sphere, value of a_s / a_v equals to
- | | |
|------|--------|
| a) 6 | b) 1.8 |
| c) 9 | d) 18 |
- x) Accelerated stability testing is done to
- | | |
|--|----------------------------------|
| a) Predict shelf life of the formulation | b) Predict dissociation constant |
| c) Predict diffusion constant | d) Determine activation energy |
- xi) The ratio of the ultimate volume of sediment to the actual volume of sediment before settling is called
- | | |
|--------------------------|---------------------------|
| a) Sedimentation volume | b) Degree of flocculation |
| c) Emulsification volume | d) Phase volume ratio |
- xii) Which of the following is not a viscometer
- | | |
|---------------|-------------------|
| a) Capillary | b) Falling sphere |
| c) Rotational | d) Drop weight |
- xiii) If the gold number is less, then the protective action will be
- | | |
|---------|---------|
| a) More | b) Less |
| c) Half | d) Zero |
- xiv) Progressive, permanent deformation under constant load is called
- | | |
|------------------------|------------------------|
| a) Creep | b) Plastic deformation |
| c) Elastic deformation | d) Fragmentation |
- xv) Fluidity is
- | | |
|--------------------------|----------------------------------|
| a) Reciprocal of density | b) Reciprocal of surface tension |
| c) Reciprocal of volume | d) Reciprocal of viscosity |
- xvi) Suspension is example of
- | | |
|--------------------------------|----------------------|
| a) Biphasic liquid dosage form | b) Solid dosage form |
| c) Semi-solid dosage form | d) All of above |
- xvii) Acetates and Citrates are
- | | |
|----------------------|------------------------|
| a) Buffering agents | b) Colouring agents |
| c) Thickening agents | d) Flocculating agents |
- xviii) According to the Newton's law of viscosity, "The shear stress in flowing fluid is..... to the rate of shear"
- | | |
|---------------------------|--------------------------|
| a) Inversely proportional | b) Directly proportional |
| c) Square root | d) Perpendicular |

xix) In flocculated suspension, the rate of sedimentation is

- a) Low
- b) More
- c) Zero
- d) 50%

xx) Pseudoplastic flow is exhibited by

- a) Jellies
- b) Suspension
- c) Lotion
- d) Colloids

2. Solve any two.

**10x2
=20**

- a) Explain order of reaction.
- b) Explain derived properties of powders. How they are evaluated?
- c) Define emulsion. Describe formulation of emulsion.

3. Solve any seven.

**5x7
=35**

- a) Explain different steps involved in preparation of suspension.
- b) Explain methods for determining surface area.
- c) Write a note on causes of drug instability and its prevention.
- d) Explain optical properties of colloids.
- e) Write a note on Non-Newtonian fluid.
- f) By using optical microscope, following data were collected.

Diameter (μm)	Number(n) of particles
10	4
20	3
30	2
40	1

Calculate

- 1) Arithmetic mean diameter
- 2) Volume- surface mean diameter
- g) Write short note on
 - i) Porosity
 - ii) Angle of repose
- h) Explain the method of prediction of shelf life.
- i) Explain co-acervation and peptization.
