

Subject: Physical Pharmaceutics- II
Duration:3 Hrs.

Class: S. Y. B. Pharm. (Sem.-IV) R-2019
Maximum Marks: 80

N.B.: 1. All questions are compulsory
2. Figures to right indicate full marks

Q. I Choose the appropriate option for the following multiple choice based questions. 20M

1. Dilatant flow is characterized as a reverse phenomenon of:
 - a. Newtonian flow
 - b. Plastic flow
 - c. Pseudoplastic flow
 - d. Rheopexy
2. A plot of shear rate, as a function of shear stress is called
 - a Rheogram
 - b Standard Plot
 - c Humidity Chart
 - d Histogram
3. Brook-field viscometer is an example of _____ viscometer.
 - a. Cone and plate
 - b. Extrusion
 - c. Rotating sphere
 - d. Rotating spindle
4. During elastic deformation, the stress–strain relationship for a specimen is described by
 - a. Hooke’s law
 - b. Boyle’s law
 - c. Beer Lambert’s law
 - d. Charle’s law
5. A deformation that recover after the release of stress is known as
 - a plastic deformation
 - b elastic deformation
 - c pseudoplastic deformation
 - d creep
6. The ratio of void volume to bulk volume is known as
 - a. Porosity
 - b. Tapped density
 - c. Granule volume
 - d. Bulk Density
7. Helium pycnometer is used to determine
 - a. Size
 - b. True density
 - c. Sedimentation rate
 - d. Surface area
8. The powder having low bulk density or large bulk volume is known as
 - a. Bulk powder
 - b. Heavy powder
 - c. Light powder

9. d. Granular powder
Which of the following is the half-life of First order reaction?
a. $t_{1/2} = 2k$
b. $t_{1/2} = A_0/2k$
c. $t_{1/2} = 0.693/2k$
d. $t_{1/2} = 0.693/k$
10. Climate zone III is
a. Hot/dry climate
b. Subtropical and Mediterranean climate
c. Hot/humid climate
d. Moderate climate
11. The dielectric constant is used to measure
a. Spreadability of the solvent
b. Polarity of the solvent
c. Viscosity of the solvent
d. Temperature of the solvent
12. _____ is the reaction of compounds and molecular oxygen
a. Photolysis
b. Hydrolysis
c. Auto-Oxidation
d. Thermolysis
13. The type of emulsion can be easily identified using the following test except _____ test.
a. Dye solubility
b. Creaming
c. Dilution
d. Redispersibility
14. As the viscosity of the emulsion is _____ the flocculation of globules will be reduced.
a. Increased
b. Decreased
c. Maintained zero
d. Lowered
15. In an emulsion, the relative volume of water and oil is expressed as _____.
a. Phase ratio
b. Phase volume ratio
c. Phase inversion
d. Viscosity
16. _____ is an example of hydrophilic colloid used in preparation of an emulsion.
a. Acacia

- b. Spans
 - c. Bentonite
 - d. Veegum
17. _____ surfactants do not impart charges on interfacial films.
- a. Ionic
 - b. Non ionic
 - c. Cationic
 - d. Anionic
18. Donnan membrane effect means:
- a. Driving the drug ion of similar charge to the opposite side of the semipermeable membrane
 - b. Driving the drug ion of opposite charge to the opposite side of the semipermeable membrane
 - c. Driving the drug ion of neutral charge to the opposite side of the semipermeable membrane
 - d. Stopping the transfer of drug ion of similar charge to the opposite side of the semipermeable membrane.
19. Which of the following is an example of lyophilic colloid?
- a. Gold
 - b. Silver
 - c. Sulphur
 - d. Albumin
20. Lyophobic colloids are:
- a. Easy to prepare and thermodynamically stable
 - b. Easy to prepare but thermodynamically unstable
 - c. Difficult to prepare but thermodynamically stable
 - d. Difficult to prepare and thermodynamically unstable

Q. II A) Answer any one question. 12M

- a. Explain the optical properties of colloids in detail
- b. Classify viscometers. Describe the principle, construction and working of cup and bob viscometer.

Q. II B) Answer any four questions. 48M

1. a. Describe types of particle deformation. 6M
- b. Describe the mechanical behaviour of solids in terms of elastic modulus. 6M
2. a. What do you understand by particles packaging arrangements in powders? How is powder porosity evaluated? 6M
- b. What are the methods used for determining particle size? Explain in detail any two. 6M
3. a. Enlist the various theories of emulsification. Discuss any two theories in brief. 6M
- b. State Stoke's law and its significance in sedimentation of suspension 6M

- 4. a. Discuss the various factors influencing particle settling in suspension 6M
- b. Discuss the various identification tests used to differentiate the type of emulsion 6M
- 5. a. What are the limitations of Arrhenius equation for determination of accelerated stability studies? 6M
- b. The half-life of drug which decomposes according first order kinetics is 75 days. Calculate shelf life and k. 6M