

Duration: (3 hours)

[Total Marks: 75]

- N.B.:**
1. All questions are compulsory.
 2. Draw neat and well labeled diagrams wherever necessary.
 3. Figure to the right indicate full marks.

Q.1. Multiple Choice Questions (MCQs)

20M

1. Content Uniformity test is applicable especially when drug content is _____ of the total tablet or capsule weight.
 - a. less than 10 mg or 10%
 - b. less than 20 mg or 20%
 - c. more than 10 mg or 10%
 - d. more than 20 mg or 20%
2. Arching and rat-holing are problems associated with _____ of powder blend.
 - a. non-uniform drug mixing
 - b. weight variation
 - c. poor flow properties
 - d. poor mixing
3. Which of the following step is not a part of wet granulation?
 - a. Slugging
 - b. Blending
 - c. Milling
 - d. Wet massing
4. Collection of wax on a sugar-coated tablet is called as _____.
 - a. Marbling
 - b. Orange peel effect
 - c. Blooming
 - d. Sticking-Picking
5. Ozone depletion is the main drawback of _____ propellants.
 - a. Hydrocarbons
 - b. Chlorofluorocarbons
 - c. Compressed gases
 - d. Hydrogenated gases
6. The hydrolytic resistance of type II glass is increased by treating it with _____.
 - a. Sulphur
 - b. Phosphorous
 - c. Freon
 - d. Sodium
7. Oil and water phase are mixed at 70°C in the manufacturing of a _____.
 - a. cream
 - b. shampoo

- c. toothpaste
 - d. lipstick
8. Type A gelatin is obtained by _____ of dry bones or skin.
- a. Acid treatment
 - b. Alkaline treatment
 - c. Ester hydrolysis
 - d. Amide hydrolysis
9. The ability of a compound to crystallize in multiple forms is known as _____.
- a. Anisotropy
 - b. Polymorphism
 - c. Polymerization
 - d. Racemization
10. Identification test for emulsion is _____
- a. Re-dispersibility test
 - b. Dilution test
 - c. Particle size changes
 - d. Sedimentation volume
11. _____ density gives estimate of interparticle pores and void spaces.
- a. Bulk
 - b. Tapped
 - c. True
 - d. Apparent Bulk
12. pKa determination helps in analysing _____ of a drug.
- a. percent ionized and unionized fraction
 - b. percent water and lipid soluble component
 - c. Surface charge
 - d. Solid and solution state stability
13. Distillation is one of the methods of preparation of
- a. Water for Injection
 - b. Emulsion
 - c. Eye drop
 - d. Ear drops
14. The following route of administration gives 100% bioavailability.
- a. Intradermal
 - b. Intramuscular
 - c. Subcutaneous
 - d. Intravenous

15. In freeze drying process, moisture is removed by a process of -
- Sublimation
 - Congeaing
 - Evaporation
 - Crystallization
16. Injection of a highly hypertonic solution can lead to ____
- Shrinkage of blood cells
 - Bursting of blood cells
 - No effect on cells
 - Reduction in the plasma volume
17. Which of the following plasticizer is preferred in capsule manufacturing?
- Lactose
 - PVP
 - PEG
 - Sorbitol
18. Identify the incorrect step in manufacturing of empty hard gelatin capsule shells.
- Coating
 - Dipping
 - Spinning
 - Trimming
19. One of the following physical forms of a drug shows rapid dissolution and absorption *in vivo* as compared to others-
- Crystalline
 - Hydrous
 - Amorphous
 - Mixed
20. Which gram-negative bacteria is generally found to be present in ophthalmic products?
- Escherichia coli*
 - Pseudomonas aeruginosa*
 - Staphylococcus aureus*
 - Streptococcus pneumoiae*

Q.2. Answer any 2 questions.

2 x 10 = 20M

1. Enlist merits and demerits of tablets. Write a note on excipients used in tablets.
2. Provide a comprehensive explanation of the production facilities used in the manufacturing of parenteral products.
3. Discuss drug-excipient compatibility studies and solid-state stability studies done during preformulation stage of drug development.

Q.3. Answer any 7 questions.

7 x 5 = 35M

1. Describe evaluation of parenteral suspensions.
2. Write a short note on ophthalmic ointment bases.
3. Explain steps in sugar coating of tablets.
4. Elaborate on two phase and three phase system in aerosols.
5. Write in brief about blister packaging of solid unit dosage forms.
6. Justify importance of polymorphism studies in preformulation.
7. Discuss all the ingredients used in the formulation of a lipstick.
8. Explain QC tests for hard gelatin capsules as per IP.
9. Elaborate on the glass containers used in parenterals and discuss tests to distinguish between them.
