



(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)**

(20)

All questions are compulsory

- Which of the following is a commonly used technique for pKa determination?
  - Potentiometric titration
  - Mass Spectrometry
  - X ray crystallography
  - Thin Layer Chromatography
- Choose the correct statement.
  - Crystalline forms have better solubility as compared to amorphous
  - Crystalline forms have better stability as compared to amorphous
  - Amorphous forms have better stability as compared to crystalline
  - Amorphous and crystalline have equivalent solubility
- The breakdown of aspirin in water, resulting in the formation of acetic acid, is an example of
  - Oxidation
  - Esterification
  - Reduction
  - Hydrolysis
- \_\_\_\_\_ is responsible for delivering the aerosol product in desired form.
  - Actuator
  - Gasket
  - Stem
  - Ferrule
- Type NP Soda Lime glass is indicated for \_\_\_\_\_ use.
  - parenteral
  - ophthalmic
  - subcutaneous
  - non parenteral
- Abrasive is used in \_\_\_\_\_
  - Shampoo
  - Lipstick
  - Nail polish
  - Toothpaste
- Pearl pigment used in lipstick \_\_\_\_\_
  - Iron oxide
  - Titanium dioxide
  - Bismuth oxychloride
  - Zinc Oxide

8. Incorporation of water-soluble drug in an ophthalmic ointment is possible due to the presence of..... \_\_\_\_\_
- a) wool fat
  - b) liquid paraffin
  - c) soft paraffin
  - d) isopropyl myristate
9. Volume of small volume parenteral is \_\_\_\_\_
- a) less than 500 ml
  - b) less than 100 ml
  - c) more than 100 ml
  - d) more than 500 ml
10. Which of the following is **not** considered a primary route of parenteral administration?
- a) intrauterine
  - b) intravenous
  - c) subcutaneous
  - d) intramuscular
11. Buffers used in parenteral formulations
- a) acetates
  - b) chlorates
  - c) sulphates
  - d) benzoates
12. Which type of endotoxin can the LAL test specifically detect?
- a) Gram-positive bacterial endotoxins
  - b) Fungal endotoxins
  - c) Viral endotoxins
  - d) Gram-negative bacterial endotoxins
13. Excipient used pre and post granulation in tablet manufacturing process \_\_\_\_\_
- a) diluent
  - b) binder
  - c) disintegrant
  - d) glidant
14. More than one medium is used for the Disintegration test of \_\_\_\_\_ tablets.
- a) effervescent
  - b) chewable
  - c) sugar coated
  - d) enteric coated
15. Pellets are commonly manufactured using \_\_\_\_\_
- a) Rapid mixer granulator
  - b) Extruder-spheronizer
  - c) Rotary die process
  - d) Tamping finger and dosing disc

16. Which of the following is the large-scale manufacturing technique for filling liquid in soft gelatin capsules?
- Accogel process
  - Bubble method
  - Plate method
  - Rotary die process
17. Which of the following is a vegetarian alternative to gelatin for manufacturing capsule shells?
- PEG
  - Acacia
  - HPMC
  - Tragacanth
18. In a multi-station rotary tablet press, \_\_\_\_\_ guides the movement of punches.
- cam track
  - feed frame
  - turret
  - hopper
19. Tablet defect related to uneven distribution of colour is called as \_\_\_\_\_.
- capping
  - mottling
  - rat-holing
  - picking
20. Choose the major instability in suspensions.
- phase inversion
  - coalescence
  - caking
  - creaming

(20)

**Q.2. Answer any 2 questions.**

- Define preformulation and classify various tests involved in preformulation studies. Write a note on solubility analysis of a drug during preformulation studies.
- Draw the flow chart for wet granulation process including the names of equipment used at each step and elaborate on rapid mixer granulator.
- Discuss the different techniques used in the preparation of Water for Injection.

(35)

**Q.3. Answer any 7 questions.**

- Write a note on Biopharmaceutics Classification System of drugs and its significance.
- Explain the pressure filling method of filling propellants during the manufacturing of aerosols.
- Describe plastic as a packaging material and its possible interactions with drugs.
- Elaborate on the process of filling hard gelatin capsules using dependent filling equipment.
- What are pellets? Write a note on the excipients used in the manufacturing of pellets.
- Classify coating pans. Discuss any one type of perforated coating pan.
- Explain the evaluation of ophthalmic preparations.
- Differentiate between cold cream and vanishing cream.
- What is isotonicity? Explain the methods of adjusting isotonicity in parenterals.

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