



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

UNIVERSITY EXAMINATION FOR:

DIPLOMA IN PHARMACEUTICAL TECHNOLOGY

APM2302: PHRMACEUTICS V

END OF SEMESTER EXAMINATION

SERIES: AUGUST 2019

TIME: 2 HOURS

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **THREE SECTION(s)**. Attempt All questions in section A and B and any two questions in section C.

Circle the correct answer in section A.

SECTION A: ANSWER ALL QUESTIONS (40MARKS)

1. Which of the following is **not** a component of a Total Parenteral Nutrition (TPN) formulation?
 - A. Amino acids
 - B. Starch
 - C. Glucose
 - D. Electrolytes
2. Which of the following statements **best** describes an ophthalmic insert?
 - A. An aqueous solution
 - B. A slow release solid dosage form
 - C. An oily semisolid preparation
 - D. A contact lens preparation
3. Which of the following formulation additive is unnecessary in a single dose parenteral product?
 - A. Wetting agents
 - B. Solubilizing agents

- C. Anti-microbial agents
- D. A suitable vehicle

4. Which of the following dosage forms is fundamentally different from the rest?.

- A. Liniment
- B. Ointment
- C. Paste
- D. Cream

5. One of the statements about eye ointments is **false**. Which one?

- A. Packed in small collapsible tubes of less than 5g
- B. Good for prolonged action of the medicament
- C. Results in lower total bioavailability than eye drops drug
- D. May cause blurred vision immediately after use.

6. What is the effect on red blood cells upon infusion of a hypotonic large volume aqueous solution?

- A. Crenation
- B. Electrolyte imbalance
- C. Haemolysis
- D. Tissue permeation

7. Which of the following is **not** a component of eye ointment base BP?

- A. Liquid paraffin
- B. yellow petrolatum
- C. Wool fat
- D. Bees wax

8. All the following are requirements of eye lotions **except**

- A. Eye lotions intended for use in surgical procedures should not contain preservatives
- B. Should be in multi-dose containers.
- C. Isotonic with lachrymal secretions
- D. Free of foreign particles to avoid irritation to the eye

9. All the following are true about vaginal drug delivery which one is not?

- A. Its mainly used for the achievement of local effects
- B. Some drugs are administered vaginally to achieve systemic effects
- C. In some cases, the drugs given by intra vaginal route have a higher bioavailability than with the oral route
- D. The vaginal wall is not very well suited for absorption of drugs for systemic use.

10. Properties of suppositories to be controlled include which of the following?

- A. Appearance

- B. Weight
 - C. Disintegration
 - D. All the above choices are correct
11. Which statement is NOT true
- A. Pharmaceutics is also concerned with the cultivation, elimination and avoidance of micro-organisms.
 - B. All drugs are medicines.
 - C. Pharmaceutics is an art and science of preparing drugs.
 - D. For the Greeks, the word "pharmakon" has contrary meanings.
12. Which one of the following is characteristic of flocculated suspensions?
- A. Loosely packed sediment
 - B. Slow sedimentation rate
 - C. Close packing of the sediment to form a cake
 - D. Slow clearance of supernatant
13. A pharmaceutical suspension containing in-diffusible particles is unsuitable for oral administration. Which formulation additive must be added to such a suspension so as to make it suitable for use?
- A. A preservative
 - B. A thickening agent
 - C. A flavouring agent
 - D. A chelating agent
14. Ideal pharmaceutical suspensions should exhibit the following characteristics except?
- A. Exhibit high apparent viscosity at high rates of shear.
 - B. With moderate shaking the apparent viscosity should fall to sufficiently allow the product to be poured easily.
 - C. Suspensions for external use should spread easily.
 - D. Suspensions for parenteral use should pass easily through hypodermic needle.
15. Pharmaceutical suspensions are basically unstable systems. The following are some instability experienced in suspensions except which one?
- A. Settling
 - B. Caking
 - C. Cracking
 - D. Adsorption
16. The following are types of emulsifying agents of vegetable origin except one. Which one?
- A. Gelatin
 - B. Acacia

- C. Tragacanth
 - D. Cellulose
17. Instability of pharmaceutical emulsions is exhibited in the following ways except?
- A. Flocculation
 - B. Breaking
 - C. Phase inversion
 - D. Caking
18. Ways of minimizing creaming in emulsions include all the following except?
- A. Homogenization
 - B. Increasing viscosity of external phase
 - C. Storing emulsion in a cool place
 - D. Increasing the volume of the disperse phase in the emulsion
19. Physical Stability in emulsion is affected by all the following factors except?
- A. Globule size
 - B. Densities of the two phases
 - C. Viscosity of the external phase
 - D. Nature of the internal phase
20. Which one is true about phase inversion?
- A. It comes about due to chemical degradation
 - B. Change of phase volume ratio is insignificant in its occurrence
 - C. Microorganisms have no effect
 - D. A preservative if used will not avert phase inversion
21. The following are methods of increasing aqueous solubility of a compound which is partially soluble in water. Which one is not?
- A. Use of surfactants
 - B. Use of co-solvents
 - C. Complex formation
 - D. Use of viscosity modifiers
22. Identify the odd one out among the following;
- A. Syrup
 - B. Elixirs
 - C. Linctuses
 - D. Liniment
23. Rectal suppositories for systemic use contain the following effects except?
- A. Analgesics
 - B. Antispasmodics
 - C. Sedatives
 - D. Tranquilizers
24. The following are Ideal properties of a suppository base except?

- A. Should melt at body temp, dissolve or disperse in the body cavity fluids.
 - B. Should retain its shape when being handled.
 - C. Should be stable on storage
 - D. Non- toxic and non-irritant to the mucous membranes.
 - E. None of the above.
- 29.** Which of the following quality control tests is carried out on cocoa butter suppositories?
- a. sterility test
 - b. friability
 - c. assay of level of active ingredient
 - d. pyrogen test
- 30.** Which statements is **not true** about polyethylene glycol suppository bases?
- a. do not support bacterial growth
 - b. Chemically stable
 - c. Physiologically inert
 - d. polymers of average molecular weight 850 are usually waxy solids
- 31.** Which of the following statements is true of oleaginous bases for topical preparations?
- a. they are non greasy
 - b. medicament release is uncertain
 - c. consist of water soluble oils and fats
 - d. they are easy to remove from the skin
- 32.** Which of the following statements about eye ointments is false?
- a. ocular contact time is greater than for eye drops
 - b. are sterile homogenous semisolid preparations.
 - c. Packed in weights of about 6 to 10g.
 - d. may produce blurred vision on application
- 33.** Cocoa butter suppository base have the following advantages except
- a. Physical properties change on overheating.
 - b. When solidified they adhere to the sides of the mould
 - c. May leak out of body cavities
 - d. The melt at body temperature
- 34.** The following are disadvantages of Glycerol-Gelatin suppository bases except.
- a. Solution time doesn't depend on content and quality of gelatin used.
 - b. Are hygroscopic- must be stored in well closed container
 - c. Gelatin is incompatible with many drugs e.g. tannic acid, ferric chloride and gallic acid
 - d. They support bacteria and mould growth

35. The sedimentation of particles in a suspension can be minimized by:
- Increasing the particle size of the active ingredient
 - Decreasing the particle size of the active ingredient
 - Increasing the viscosity of the suspension
 - Both (b) and (c)
36. Cake formation is the characteristic feature of
- Flocculated suspensions
 - Deflocculated suspensions
 - Thixotropic suspensions
 - Structured suspensions
37. Surfactants are characterized by the presence of:
- Hydrophobic groups in the molecule
 - Hydrophilic groups in the molecule
 - Both hydrophobic and hydrophilic groups in the same molecule
 - Negative charges in the molecule
38. Which one of the following is characteristic of flocculated suspensions?
- Loosely packed sediment
 - Slow sedimentation rate
 - close packing of sediment to form cake
 - slow clearance of supernatant
39. Which of the following is not an instability problem of emulsion?
- caking
 - creaming
 - cracking
 - phase inversion
40. Which of the following measures has an effect of increasing the flowability of powder materials?
- Reducing the size of the particles
 - Adding binding agents to the formulation
 - Granulating the powders
 - Increasing the humidity of powder material

SECTION B 40 MARKS: ANSWER ALL QUESTIONS

41. Briefly describe the stages involved in Direct compression of tablet manufacture (4 marks)
42. list any four manufacturing defects of compressed Tablets (4 marks)
43. Highlight any four advantages of suspensions over solid dosage forms (4 marks)
44. State four reasons for formulating drugs as ophthalmic suspensions rather than as solutions (4 marks)
45. What are the setbacks of using Theobroma oil as a base for suppository formulation (4 marks)
46. outline any four advantages of using gelatin in manufacture of capsules (4 marks)
47. Name **four** quality control tests carried out on parenteral products. (4 marks)
48. Differentiate between soft and hard gelatin capsules (4 marks)
49. Differentiate between flocculated and deflocculated suspensions. (4 marks)
50. Briefly discuss the various stages involved in Tablet Sugar Coating (4 marks)

SECTION C 40 MARKS: ANSWER ANY TWO QUESTIONS

51. a) State the ideal properties of suppository bases (10marks)
b) Outline the pre-formulation criteria and considerations of medicated ophthalmic drop solutions (10marks)
52. **A.** Using well elaborated examples discuss the factors to consider when selecting a particular route of drug administration (10 marks)
B. Discuss the advantages and disadvantages of suspensions as a dosage form (10marks)
53. Describe the following types of dosage forms (20marks)
 - a) Pastes
 - b) Jellies
 - c) Ocular inserts
 - d) Contact lens solutions
 - e) Eye lotions