KATHMANDU UNIVERSITY
End Semester Examination [C]
April, 2023

Marks Scored:

Level : B.Pharm.
Year : IV

Course : PHAR 404
Semester : I

Exam Roll No. :

Time: 30 mins.

F. M. : 20

Registration No.:

Date 07 APR 2023

SECTION "A"
[20Q. × 1 = 20 marks]

Encircle the most appropriate alternative from each set of choices.

1. Which one of the following is an example of directly compressible diluent?
   a. Magnesium Sterate
   b. Starch
   c. Microcrystalline cellulose
   d. Gum Acacia

2. Tablet hardness is adjusted in a tablet compression machine by adjusting
   a. Upper pressure roller
   b. Lower pressure roller
   c. Punch shape
   d. Hopper to feed frame distance

3. Which of the following shape is most preferable for tablet coating?
   a. Circular bi-flat
   b. Circular bi-concave
   c. Circular bi-convex
   d. Oblong bi-convex

4. Drying air is introduced through hollow perforated ribs located at the inside periphery of the drum in.....
   a. Conventional coating pan
   b. Immersion tube system
   c. Accela-Coata
   d. Glatt Coater

5. Function of `Rectifier` in semiautomatic hard gelatin capsule shell filling machine is
   a. Orientation of capsule shell
   b. Filling of capsule shell
   c. Separation of capsule shell
   d. Rejoining of capsule shell

6. In soft gelatin capsules, mineral oil is used as.....
   a. Softening agent
   b. Gelatin dilutant
   c. Vehicle for fill
   d. Moisturizing agent

7. Function of valve body in assembly valve is .....
   a. to hold mounting cup
   b. to prevent leakage
   c. to hold stem
   d. to tube

8. Which of the following propellant produces finest aerosol droplets?
   a. Trichloromonofluromethane (P-11)
   b. Dichlordifluromethane (P-12)
   c. Butane (A-17)
   d. Propane (A-108)

9. Which plastic polymer among the following is NOT suitable for moisture sensitive drugs?
   a. Low Density Polyethylene
   b. High Density Polyethylene
   c. Polystyrene
   d. Polyvinyl chloride

10. Movement of coloring agent form plastic container to the content product is .....
a. Sorption b. Leaching c. Permeation d. Disintegration

11. ..... is defined as a series of structurally related chemical compounds that have shown interesting pharmacological activity and from which drug candidates may be selected.
a. Leads b. Drug Product c. Drug substance d. Drug candidate

12. ..... indicates dissolved air in solution.
a. Density b. Refractive index c. Viscosity d. Pourability

13. ..... is not the indication of incompatibilities in formulation of solution.
a. Discolouration b. Dissolution c. Precipitation d. Effervescent

14. ..... is not done in pharmaceutical suspension.
a. Assay b. Density c. Viscosity d. Filtration

15. .....is not the problem of pharmaceutical emulsion.
a. Cake formation b. Breaking c. Phase inversion d. Creaming

16. ..... are semisolid preparations that incorporate a lipid or hydrophobic excipient and are intended for external application to the skin or other mucosal membranes.
a. Cream b. Ointment c. Lotion d. Gel

17. ..... is used to administer various pills (medications) to cattle and horses.
a. Plunger b. Balling gun c. Syringe d. collar

18. Regarding weakly acidic drug molecules, which of the following statements is true?
a. The solubility of weak acids increases as the pH is decreased.
b. The solubility of weak acids increases as the pH is increased.
c. The solubility of weak acids in pharmaceutical formulations is not affected by the presence of counterions.
d. All weakly acidic therapeutic agents exhibit an isoelectric point

19. Regarding buffers for pharmaceutical solutions for oral administration, which of the following statements is false?
a. Citrate buffer is commonly used as a buffer for pharmaceutical solutions.
b. Buffers are required solely to control the stability of therapeutic agents.
c. Buffer salts may affect the solubility of therapeutic agents.
d. The buffer capacity of a buffer system is increased as the concentration of buffer components is increased.

20. Regarding the rate of sedimentation of pharmaceutical suspensions designed for oral administration, which of the following statement is false?
a. The rate of sedimentation is increased as the diameter of the dispersed drug particles is increased.
b. The rate of sedimentation is increased as the viscosity of the continuous phase is increased.
c. The rate of sedimentation is affected by the concentration of buffer salts.
d. The rate of sedimentation may be increased by centrifugation.

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SECTION "B"
[5Q. × 3 = 15 marks]

Attempt *ANY FIVE* questions.

1. What is capping and lamination of tablets? How can you prevent it?
2. Draw a well labeled diagram of Driacoater showing its working mechanism.
3. What are mechanical breakup actuators? How does it work?
4. What materials are used in blister packs? How is it different from Strip packs?
5. What is the stability problem of pharmaceutical solution? What are the causes of it?
6. What is the stability problem of pharmaceutical suspension? What are the causes of it?
7. What is the stability problem of pharmaceutical emulsion? What are the causes of it?

SECTION "C"
[5Q. × 5 = 25 marks]

Attempt *ANY FIVE* questions.

8. What process variables are controlled in conventional coating pan? Explain how these process variables can result in coating film defects.
9. Discuss on the types of propellants that are used to prepare pharmaceutical aerosols.
10. Write about the strength, limitations and applications of High-density polyethylene as pharmaceutical packaging material.
11. Briefly explain how soft gelatin capsules are prepared by using rotary die process.
12. Describe the types of bases of semi-solids with their specialities and example.
13. "Formulation of Veterinary pharmaceutical dosage form is challenging for pharmacists." Justify this statement.
14. What is differential scanning calorimetry (DSC)? For what purpose it is used? How it works?

SECTION "D"

[2Q. × 7.5 = 15 marks]

Attempt *ANY TWO* questions.

15. What is tablet weight variation? What causes the problem? Write in detail the changes you can make in formulation, manufacturing steps and during compression to decrease the tablet weight variation?

16. Write down the operating procedure of semi-automatic capsule filling machine. How fill weight of the capsules is controlled?

17. What is "Preformulation"? In which stage of drug and dosage form development it is done? What is the first para meter to be measured in it? Why pka is measured in it?