



WI-2-60-1-6

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY

UNIVERSITY EXAMINATION 2016/2017

BACHELOR OF PHARMACY

FOURTH YEAR, SECOND SEMESTER EXAMINATION

PHA 2407 A: PHARMACEUTICS VA

DATE: MAY 2017

TIME: THREE HOURS

**INSTRUCTIONS: ANSWER ALL QUESTIONS IN SECTION A (60 MARKS)
AND ANY TWO QUESTIONS FROM SECTION B (40 MARKS).**

***ILLUSTRATE YOUR ANSWERS WITH DIAGRAMS/STRUCTURES WHERE
APPROPRIATE.***

Section A: SHORT ANSWER QUESTIONS (SAQ)

60 marks

Note: All questions to be attempted.

Each question carries 5 marks.

Question 1:

- a. Classify the solids in terms of their properties. 1 mark.
- b. Write a short description of types of crystalline nature. 2 marks.
- c. Why it is important to study the nature of solids. 2 marks.

Question 2:

Explain with the help of a diagram the construction and working of a cutter and a hammer mill.

Question 3:

- a. Differentiate between Polymorphs, Pseudopolymorphs and amorphism giving suitable examples. 4 marks.
- b. Define and explain glass transition temperature and its importance. 1 mark.

Question 4:

- a. Differentiate between size reduction and size separation. 2 marks.
- b. Explain the disadvantages of size reduction. 2 marks.
- c. Differentiate between sieve size and sieve number. 1 mark.

Question 5:

- a. Define the term particle size and explain the different types. 2 marks.
- b. Explain the term PSD and its relevance. 3 marks.

Question 6:

- a. Differentiate between three theories of mixing. 3 marks.
- b. Furnish one equipment for each theory. 2 marks.

Question 7:

- a. Explain any one theory of Filtration. 3 marks.
- b. Define elutriation and provide the theory behind elutriation. 2 marks.

Question 8:

- a. Explain the term drying under vacuum with advantages and disadvantages of the process. 3 marks.
- b. Detail the advantages and disadvantages of microwave drying. 2 marks.

Question 9: Define extraction and discuss methods available for extracting active principles.

Question 10: Discuss any one non-manual method of particle size analysis.

Question 11:

Define and explain forces of attraction in solids

Question 12:

Define and explain the factors affecting powder flow..

Section B: LONG ANSWER QUESTIONS (LAQ)

40 marks

Note: Answer any 2 Questions. Each question carries 20 Marks

Question: 13

- a. Explain drying and types of drying equipments. 9 marks
- b. Differentiate between equilibrium and critical moisture levels. 5 marks
- c. Explain distillation and differentiate between any 2 types of distillation. 6 marks.

Question: 14:

- a. Differentiate between decoction, infusion, maceration & percolation. 8 marks
- b. Discuss the factors to be considered for selection of solvents for extraction. 5 marks
- c. Explain the salient features of Lyophilization with examples. 7 marks

Wed. 1.10.8

Question: 15 :

a.

types and correlation between them.

Define and explain Porosity, Bulkiness and its
8 marks 4

Bulk
True

b.

angle of repose and their application in pharmaceuticals.

Discuss Carr's Index, Hausner's Ratio and
8 marks 6

c.

and their effect on powder behaviour.

Differentiate between solvates and hydrates
4 marks 3

$$\frac{\text{Bulk of - True d}}{\text{bulk of}} \times 100$$

$$\Delta = \frac{W}{V}$$

$$\Delta = \frac{W}{\text{volume}}$$