



W1-2-60-1-6

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY

UNIVERSITY EXAMINATION 2016/2017

BACHELOR OF PHARMACY

FOURTH YEAR, FIRST SEMESTER MAIN EXAMINATION

PHA 2406 A: PHARMACEUTICS IV A

DATE: DECEMBER 2016

TIME: THREE HOURS

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

ILLUSTRATE YOUR ANSWERS WITH DIAGRAMS/ STRUCTURES WHERE APPROPRIATE.

SECTION A

- 1: Define bioavailability and differentiate from Biopharmaceutics and Pharmacokinetics. (5 marks)
- 2: a) Define AUC. (2 marks)
b) Explain its importance. (3 marks)
- 3: Differentiate between relative and absolute bioavailabilities. Explain how Biowaivers are accommodated. (5 marks)
- 4: Explain diffusion and enumerate the various mechanisms of drug transport. (5 marks)
- 5: By use of suitable examples describe BCS Classification. (5 marks)
- 6: Classify various routes of drug administration in decreasing order of bioavailabilities and define produgs with suitable examples. (5 marks)
- 7: Classify the routes of excretion of drugs and explain Glomerular Filtration Rate. (5 marks)
- 8: By use of suitable examples define competitive inhibition process of absorption. (5 marks)
- 9: a) Explain first pass effect and the enzymes responsible for the effect with suitable examples. (3 marks)
b) Is there a means to avoid for Oral Dosage Forms? (2 marks)

- 10: a) Compare Fick's Law of diffusion and Noyes-Whitney equation. (3 marks)
b) Explain sink conditions. (2 marks)

11: Differentiate between Pre-Clinical and Clinical trials and justify their importance. (5 marks)

12: Explain "Fat soluble drugs are absorbed better in Capsule dosage forms" with suitable examples. (5 marks)

Section B:

13

- a. Explain any 3 factors affecting Bioavailability of which one must be a pharmaceutical factor. (14 marks)
b. Describe different pH conditions in the GIT and their significance. (6 marks)

14

- a. Explain your approach for NCE's and ANDA's in terms of biopharmaceutical studies. (14 marks)
b. Explain the difference between generic, therapeutic and pharmaceutical equivalents. Provide an example for each. (6 marks)

15

- a. Explain the difference between one compartment and three compartment models with a drawing. (10 marks)
b. Explain the significance of pH - partition theory and its disadvantages. (10 marks)