

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**EXAMINATION FOR THE AWARD OF DEGREE
OF BACHELOR OF SCIENCE IN BIOMEDICAL TECHNOLOGY**

BMET 336: INTRODUCTION TO PHARMACOLOGY

STREAMS: BSC (BMET)

TIME: 2 HOURS

DAY/DATE: THURSDAY 06/04/2020

8.30 A.M. – 10.30 A.M.

INSTRUCTIONS: Answer question **ONE** and **another TWO** questions

QUESTION 1 (COMPULSORY) (30 MARKS)

- a) Explain 5 factors that determine drug distribution in a biological system. (5 marks)
- b) Explain how dosage forms influence drug bioavailability in a biological system. (6 marks)
- c) By use of a graph, illustrate the difference in concentrations over time following sublingual, intravenous and oral single dose drug administration. (5 marks)
- d) Differentiate between zero order and first order kinetics in drug pharmacokinetics. (4 marks)
- e) (i) Differentiate between pharmacology and pharmacy (4 marks)
- f) (i) What is selective toxicity? (2 marks)
(ii) Highlight four ways in which microbes may acquire resistance to antimicrobial drugs. (4 marks)

QUESTION 2 (20 MARKS)

- a) Discuss 5 phase II reactions involved in drug metabolism. (10 marks)
- b) Describe factors that influence drug absorption and bioavailability. (10 marks)

QUESTION 3 (20 MARKS)

- a) (i) Highlight 3 factors that should be considered in antibiotic selection. (3 marks)
(ii) Explain how antibiotics are classified based on mechanisms of action. (7marks)

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- b) Individuals differ both in the degree and the character of the response that a drug may elicit and therefore the optimum dose of a drug which produces the desired therapeutic effect varies from person to person. Describe 5 important factors which influence the effect of a drug in individuals. (10 marks)

QUESTION 4 (20 MARKS)

- a) Explain 5 forms of drug adverse reactions. (10 marks)
- b) Describe the processes involved in development and evaluation of new drug molecules. (10 marks)
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