

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DIPLOMA IN ANIMAL HEALTH AND PRODUCTION

ANHE 0227: PHARMACOLOGY AND TOXICOLOGY

STREAMS: DIP ANHE Y2S2

TIME: 2 HOURS

DAY/DATE: THURSDAY 6/12/2018

8.30 A.M – 10.30 A.M

INSTRUCTION:

- **Answer all questions in section A and only two questions in section B**

SECTION A: Answer all questions in this section 30 marks

1. Distinguish between the following terms:
 - (a) Broad spectrum and narrow spectrum antibiotics. [2marks]
 - (b) Drug affinity and drug efficacy. [2 marks]
 - (c) Bacteriostatic and bacteriocidal antibiotics. [2 marks]
 - (d) ED50 and LD50. [2 marks]
2. State four factors that influence the fate of drugs once administered in the body.
[4marks]
3. (a) Define “antibiotic resistance”. [2 marks]
(b) State four ways by which micro-organisms can develop resistance to an antibiotic.
[4marks]
4. Briefly explain how the physical and chemical nature of poison affects its mode of action.
[4 marks]

5. List the three pathways through which poisons can enter the body. [3 marks]
6. The dosage of drugs administered to animals is calculated on the basis of the concentration of the drug presented and the weight or size of the animal. If you were presented with a drug named Adamycin (10% oxytetracycline), and the label tells you that the dosage for a cow suffering from pneumonia is 10mg/kg body weight given by intramuscular injection:
- (i) Calculate the amount of the drug in mg you would administer to 300kg animal. [2 marks]
- (ii) Calculate the amount of drug in m/s you would administer to a 300kg animal. [3 marks]

SECTION B: Answer any two questions in this section (40 marks)

7. (a) Briefly explain the application of drug combination interaction. [5 marks]
- (b) Briefly describe the following types of drug interactions:
- (i) Pharmacokinetic drug interaction. [7 marks]
- (ii) Pharmacodynamic drug interaction. [8 marks]
8. (a) Briefly explain how the following factors affect drug metabolism:
- (i) Enzyme induction [5 marks]
- (ii) Feeding [5 marks]
- (b) Discuss the methods that one can use to slow down the rate of drug absorption after administration from the subcutaneous route. [10 marks]
9. (a) Discuss the major ways through which poisons and their metabolites are excreted from the body. [10 marks]
- (b) Discuss the mode of action of toxicants. [10marks]
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