



KISII UNIVERSITY

UNIVERSITY EXAMINATIONS

**THIRD YEAR EXAMINATION FOR THE AWARD OF THE
DEGREE OF BACHELOR OF SCIENCE IN ANIMAL SCIENCE &
TECHNOLOGY**

**SECOND SEMESTER 2022/2023
(SEPTEMBER - DECEMBER, 2022)**

ANSC 334: BIOTECHNOLOGY IN ANIMAL NUTRITION

STREAM: Y3 S2

TIME: 2 HOURS

DAY: TUESDAY, 300 P.M – 5:00 P.M

DATE: 20/12/2022

INSTRUCTIONS:

- 1. Do not write anything on this question paper.***
- 2. Answer ALL Questions in section A (Compulsory) and any other FOUR Questions in section B.***
- 3. You are allowed to use a calculator***

SECTION A

1. Write short notes on the following:
 - a) Genetically Modified Organism (2 marks)
 - b). Probiotics (2 marks)
 - c). Antimicrobial (2 marks)
2. a) Why is Biotechnology critical in food security?, (4marks)
- b) Biotechnology in developing countries is not yet there!, discuss this statement (5 marks)
- 3). Modification of rumen microflora is very important especially for the ruminant animals, discuss any three methods that can be used to perform this task (5 marks)
- 4) What are the factors that affect composition of bacteria in the Gastro Intestinal Tract (GIT) of any animal (5 marks)
- 5). State and explain the four mechanisms that have been proposed as explanation of feed antimicrobial-mediated growth enhancement (5marks)

SECTION B

- 5). Discuss the role of Genetically Modified Organisms towards food security in Kenya. (20 marks)
- 6 a). Discuss some of the practical problems caused by the general inability of poultry and pigs to utilize phytate phosphorus (12 marks)
- b) Discuss the role of bovine somatotropin hormone (BST) as a chemical produced by one organ or cell and then transported to another to cause a biological effect (8 marks)
7. a). Discuss some of the benefits obtained from the addition of enzymes to poultry feeds (10 marks)
- b). Consumer and public authorities concerns on animal biotechnology is increasing. One of the major concerns is “Is animal biotechnology risky?” discuss (10 marks)