(Knowledge for Development)

KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS
2020/2021 ACADEMIC YEAR

THIRD YEAR SECOND SEMESTER
MAIN EXAMINATION

FOR THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURAL ECONOMICS AND RESOURCE MANAGEMENT

COURSE CODE: AAP 322
COURSE TITLE: BIOTECHNOLOGY IN RUMINANT AND NON-RUMINANT PRODUCTION
DATE: 5TH OCTOBER 2021 **TIME:** 9 – 11 AM

INSTRUCTIONS TO CANDIDATES

Answer Question ONE and any other TWO Questions.

TIME: 2 Hours

This paper consists of 2 printed pages. Please Turn Over

QUESTION ONE

a. Define the following terms. (10 marks)
   i. Biotechnology - (2 marks)
   ii. Immunocastration (2 marks)
   iii. Cloning (2 marks)
   iv. Multiple ovulation (2 marks)
   v. In vitro fertilization (2 marks)

b. Listed below are three biotechnological approaches used in the detection of estrus in dairy and beef cattle. Briefly describe how each of these approaches work.
   i. Milk Constituent Approach (3 marks)
   ii. Biosensor Approach (3 marks)
   iii. Behavioral approach (3 marks)

c. List three ways in which biotechnology is utilized in livestock health. (3 marks)

d. What is the importance of biotechnology in livestock production? (5 marks)

e. List three applications of biotechnology in the nutrition and feeding of livestock. (3 marks)

QUESTION TWO

Write short notes on three key unsolved problems in the livestock sector where biotechnologies could be fundamental to their solution. (20 marks)

QUESTION THREE

Write short notes on four reproduction and breeding biotechnology methods employed in the improvement of livestock production. (20 marks)

QUESTION FOUR

Discuss the nature and evolution of biotechnology in cattle over time. (20 marks)

QUESTION FIVE

Discuss the challenges and opportunities facing the use of biotechnology in livestock production. (20 marks)