



(Knowledge for Development)

KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS 2020/2021 ACADEMIC YEAR

THIRD YEAR SECOND SEMESTER SPECIAL/SUPPLEMENTARY EXAMINATIONS

**FOR THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURAL
ECONOMICS**

COURSE CODE: AAP 322

**COURSE TITLE: BIOTECHNOLOGY IN RUMINANT AND NON-
RUMINANT PRODUCTION**

DATE: 18TH JANUARY 2022

TIME: 11 – 1 PM

INSTRUCTIONS TO CANDIDATES

Answer Question ONE and any other THREE Questions.

TIME: 2 Hours

This paper consists of 2 printed pages. Please Turn Over



KIBU observes ZERO tolerance to examination cheating

QUESTION ONE

- a. What is the importance of biotechnology in ruminant and non-ruminant production?
(5 marks)
- b. List four worldwide known research centers that deal with biotechnology for improvement of animal breeds (4 marks)
- c. Define the following terms as used in animal biotechnology.
 - i. Immunocastration (2 marks)
 - ii. Biotechnology (2 marks)
 - iii. Gene transfer (2 marks)
 - iv. Cryopreservation (3 marks)
 - v. Ionophores (3 marks)
- d. Differentiate between prebiotics and probiotics as used in Animal nutrition technologies.
(6 marks)
- e. List three advanced breeding techniques used to improve livestock productivity. (3 marks)

QUESTION TWO

Write short notes on how sexing of semen can be done in the lab (20 marks)

QUESTION THREE

Discuss the contribution of animal biotechnology to sustainable production of quality human food.
(20 marks)

QUESTION FOUR

Briefly discuss the three methods of estrus detection in dairy and beef cattle herds. (20 marks)

QUESTION FIVE

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