



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF AGRICULTURAL AND FOOD SCIENCES**

**THIRD YEAR SEMESTER UNIVERSITY EXAMINATION FOR THE DEGREE OF
BACHELOR OF SCIENCE IN ANIMAL SCIENCE**

**2019/2020 ACADEMIC YEAR
REGULAR**

COURSE CODE: AAB 3321

COURSE TITLE: Biotechnology in animal production

EXAM VENUE:

STREAM: Bsc. Animal Science

DATE:

EXAM SESSION:

TIME: 2 HOURS

Instructions:

- 1. Answer ALL questions in section A and ANY other 2 Questions in section B.**
- 2. Candidates are advised not to write on question paper.**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room.**

SECTION A [30 MARKS]

Answer ALL questions from this section

1. Describe
 - a. transgenic organism. (2marks)
 - b. cloning vector. (2marks)
 - c. restriction enzyme. (2marks)
 - d. genetic engineering. (2marks)
2. List the scientific names of two fermenting microorganisms. (4marks)
3. Outline the benefits of in vitro fertilization. (4marks)
4. Outline the application of the somatotropin hormone in production, give two examples of the hormone. (4marks)
5. Describe the two major categories of conservation of genetic material giving examples of each. (4marks)
6. Name and describe the three types of vaccines. (6marks)

SECTION B [40 MARKS]

Answer any TWO QUESTIONS in this Section.

7. Discuss embryo transfer in cattle production. (20marks)
8. Discuss the importance of ethics in biotechnology. (20marks)
9. Describe step by step microinjection method of transgenic production. (20marks)
10. Discuss challenges in the uptake of biotechnology in developing countries. (20marks)