



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**SCHOOL OF AGRICULTURAL AND FOOD SCIENCES**

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

**2017/2018 ACADEMIC YEAR**

**REGULAR**

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**COURSE CODE: AAS 3321**

**COURSE TITLE: BIOTECHNOLOGY IN ANIMAL PRODUCTION**

**EXAM VENUE:**

**STREAM: BSc. (Animal Science)**

**DATE:**

**EXAM SESSION:**

**TIME: 2 HOURS**

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**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]**

1. Outline three reasons for conservation of farm animal genetic resources. (3 Marks)
2. Define the term cryopreservation and describe the two cryopreservation freezing methods (3 Marks)
3. Identify and describe three types of rumen microflora (3 marks)
4. State three advantages of the use of modern molecular biotechnology to obtain genetically
5. Define metabolic modifiers and describe the use of three metabolic modifiers in improving efficiency of domestic animal production (4 Marks)
6. State three uses of chelates in Animal Nutrition (3 marks)
7. Identify three broad categories of ethical issues are associated with animal biotechnology (3 Marks)
8. Discuss the Religious views of transgenic animals. Indicate the views of those who are for and against. (4 marks)
9. Define the term probiotics and identify three ways in which it is classified in. (4 Marks)

**SECTION B [40 MARKS]**

**Answer ANY TWO questions from this Section.**

1. Discuss the use of biotechnology in animal reproduction (20 marks)
2. Identify four types of animal genetic germplasm and discuss the various methods in their collection (20 marks)
3. Discuss the use of biotechnology in the advancement of animal nutrition (20 marks)
4. Discuss the application of Biotechnology towards Diagnosis and Treatment in Veterinary Medicine (20 Marks)