



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

**SCHOOL OF AGRICULTURAL AND FOOD SCIENCES**

**SECOND YEAR FIRST SEMESTER UNIVERSITY EXAMINATION**

**2017/2018 ACADEMIC YEAR**

**REGULAR**

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**COURSE CODE: AAE 3212**

**COURSE TITLE: BIODIVERSITY AND AGRICULTURAL BIOTECHNOLOGY**

**EXAM VENUE: LAB 10**

**STREAMS: Bsc. Food Security**

**Bsc. Agribusiness management**

**DATE: 20/12/17**

**TIME: 2 HOURS**

**EXAM SESSION: 9.00 – 11.00 AM**

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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]**

**Answer ALL questions from this Section.**

1. Describe biotic components of an ecosystem (2 marks)
2. State and explain the benefits of biodiversity to mankind (4 marks)
3. Explain how biodiversity conservation helps in bio-prospecting (2 marks)
4. State and explain the main methods of biodiversity conservation (4 marks)
5. Using a flow chart, explain the unidirectional flow of energy in the ecosystem (4 marks)
6. State and explain the roles of agro-biodiversity in any ecosystem (4 marks)
7. Explain the two main broad categories of somatic gene therapy (4 marks)
8. Describe the application of biotechnology in livestock farming (4 marks)

**SECTION B [40 MARKS]**

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

9. With the aid of well labeled diagrams, explain how recombinant DNA technology helps in production of transgenic crops and animals (20 marks)
10. State and explain the applications of biotechnology in food production (20 marks)
11. State and explain the different ways by which intellectual property rights can be protected (20 marks)