



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

SCHOOL OF AGRICULTURAL AND FOOD SCIENCES

SECOND YEAR FIRST SEMESTER UNIVERSITY EXAMINATION

2016/2017 ACADEMIC YEAR

REGULAR

COURSE CODE: AAE 3212

COURSE TITLE: BIODIVERSITY AND AGRICULTURAL BIOTECHNOLOGY

EXAM VENUE:

STREAMS: Bsc. Food Security

Bsc. Soil Science

DATE:

Bsc. Agribusiness management

TIME: 2 HOURS

EXAM SESSION:

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 the following:
 - (i) Ecosystem (2 marks)
 - (ii) Biodiversity (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. Explain the following methods of biodiversity conservation:
 - (i) In situ conservation (2 marks)
 - (ii) Ex situ conservation (2 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. With well labeled diagrams, explain Recombinant DNA Technology (RDT) (4 marks)
8. Describe the application of biotechnology in pharmaceutical technology and how these advances have impacted on the development of Agriculture (4 marks)

SECTION B [40 MARKS]

Answer ANY TWO questions from this Section.

9. Describe the socio-economic impact of genetic engineering in developing countries in Africa (20 marks)
10. State and explain the applications of biotechnology in environmental science (20 marks)
11. State and explain the different ways by which intellectual property rights can be protected (20 marks)