



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF AGRICULTURAL AND FOOD SCIENCES

**FOURTH YEAR SECOND SEMESTER UNIVERSITY EXAMINATION FOR THE
DEGREE OF BACHELOR OF SCIENCE IN HORTICULTURE AND
BACHELOR OF SCIENCE IN ANIMAL SCIENCE**

2019/2020 ACADEMIC YEAR

REGULAR

COURSE CODE: AFB 3412

COURSE TITLE: GMOs, Biosafety and Bioethics

EXAM VENUE:

STREAM: BSc. Horticulture and BSc. Animal Science

DATE:

EXAM SESSION:

TIME: 2 HOURS

Instructions:

- 1. Answer ALL the questions in section A and any TWO 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.**
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SECTION A [30 MARKS]

Answer ALL questions from this Section.

1. a. Define Recombinant DNA Technology (2 marks)
b. Describe general principles of GMO technology (3 marks)

c. State four reasons of creating GMOs (2 marks)

d. Highlight Objective of the Cartagena Protocol on Biosafety (3 marks)
2. a. Explain the factors that modify Biosafety and Biosecurity risks (4 marks)
b. Define risk assessment and what it involves (3 marks)
c. What are the potential and perceived Biosafety concerns associated with GMOs? (3 marks)
3. a. Explain what you understand by biodiversity prospecting and to how and whom it is useful. (4 marks)
b. What is the role of patents in biotechnological development (4 marks)
c. Differentiate between genetic testing and genetic screening. (2 marks)

SECTION B [40 MARKS]

Answer any TWO QUESTIONS from this Section.

4. There is on-going discourse on use of genetically modified organisms in the global food systems. Highlight key aspects of this discussion (20 Marks)
5. You have just been offered a position working with Bacillus anthracis. This position has great pay and great benefits. Before you decide to accept this position, you should perform a risk assessment. In the space that follows, walk me through your risk assessment, and decide whether you will accept this position or not. (20 Marks)
5. Formulate guidelines which could be adopted by the Department of Biotechnology, Govt. of Kenya to ensure sound science and ethical principles. (20 marks)

