

AGR 202



(University of Choice)

**MASINDE MULIRO UNIVERSITY OF SCIENCE AND
TECHNOLOGY**

**UNIVERSITY EXAMINATIONS
2022/2023 ACADEMIC YEAR**

SECOND SEMESTER MAIN EXAMINATION

**FOR THE DEGREE
OF
BACHELOR OF SCIENCE IN AGRICULTURE AND
BIOTECHNOLOGY**

**COURSE CODE: AGR 202
COURSE TITLE: INTRODUCTION TO AGRICULTURAL
BIOTECHNOLOGY AND CROP
IMPROVEMENT**

DATE: 12.04.2023

TIME: 3 – 5 PM

INSTRUCTIONS TO CANDIDATES

Question ONE (30 marks) is COMPULSORY
Choose any other TWO questions (20 marks, -each)

QUESTION ONE (30 marks)

- (a) Illustrate, using examples, the history of Biotechnology **(4 marks)**
- (b) Using their representative colors, discuss the different types of biotechnology **(10 marks)**
- (c) Describe any three fields of biotechnology. Give one example for each **(6 marks)**
- (d) Discuss BT-technology using cotton or maize **(5 marks)**
- (e) Give the advantages and disadvantages of BT-technology **(5 marks)**

QUESTION TWO (20 marks)

- (a) Discuss the advantages and limitations of Biotechnology **(12 marks)**
- (b) Using examples, discuss the role of Agricultural biotechnology in food security **(8 marks)**

QUESTION THREE (20 marks)

- Describe the roles of noncoding RNAs (ncRNAs) **(10 marks)**
- (a) Briefly describe transcriptional regulation of gene expression **(10 marks)**

QUESTION FOUR (20 marks)

- Discuss any five major ways in which biotechnology has improved crop production **(20 marks)**

UC
CAG 012



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**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

MAIN CAMPUS

**UNIVERSITY EXAMINATIONS
2022/2023 ACADEMIC YEAR**

**SECOND SEMESTER EXAMINATIONS
MAIN EXAMINATION**

CERTIFICATE IN GENERAL AGRICULTURE

COURSE CODE: CAG 012

COURSE TITLE: ANNUAL AND PERENNIAL CROPS

DATE: 11.04.2023

TIME: 8-11AM

INSTRUCTIONS TO CANDIDATES

Answer ALL questions in section A and any TWO in section B

MMUST observes zero tolerance to exam cheating

SECTION A: 30 MARKS

1. With examples state the importance of annual and perennial crops. **(6mks)**
2. State and explain the ecological requirements of sugarcane **(5mks)**
3. State and explain plant characteristics of beans **(5mks)**
4. Discuss the weeds that attack sorghum and their control **(4mks)**
5. Explain establishment of cowpea **(5mks)**
6. State the uses of sisal **(5mks)**

SECTION B (CHOOSE ANY TWO QUESTIONS: 40 MARKS)

7. Discuss steps followed during processing of sugarcane stating importance of clarification **(20mks)**
8. Discuss maize production in Kenya under the following subheadings: **(20mks)**
 - i. Uses
 - ii. Ecological requirements
 - iii. Pest and their control
 - iv. Diseases and their control
9. Discuss the common pest and diseases of coffee **(20mks)**