



KENYATTA UNIVERSITY
EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE (AGRICULTURE
AND CROP IMPROVEMENT AND PROTECTION)

KST 206: PRINCIPLES OF AGRICULTURAL BIOTECHNOLOGY

2ND SEMESTER 2020/2021

TIME: 2 Hours

INSTRUCTIONS: **Answer all Questions**

SECTION A (40 MARKS)

1. Describe the major advantages of biotechnology over the conventional way of crop improvement through plant breeding. (5 marks)
2. Outline the role of 5 key equipments that are used in tissue culture set-ups. (5 marks)
3. What is the role of government legislation in ensuring the quality of new varieties. (5 marks)
4. Define DNA and list its key features. (5 marks)
5. Outline the advantages of in-vitro-propagation as a technique used in improvement of modern crops. (5 marks)
6. Describe the types of plant material that can be used for production of plants. (5 marks)
7. Explain the difference between direct and indirect methods used in the plant regeneration citing advantages. (5 marks)
8. Briefly describe the genetic code and write the basic equation that summarize the key components. (5 marks)

SECTION B (30 MARKS)

9. The GMO debate has had great implication on the adoption of transgenic products. discuss key issue that have been the source of conflict. (15 marks)
10. Describe the role of the basic components of Murashige and skoog as a common media used in tissue cultures. (15 marks)
11. Describe how *agrobacterium tumefaciens* is used inn the production of genetically modified organisms. (15 maarks)