

LAIKIPIA



UNIVERSITY

## UNIVERSITY EXAMINATIONS

**1<sup>ST</sup> SEMESTER 2022/2023 ACADEMIC YEAR**

### **SECOND YEAR EXAMINATIONS FOR BACHELOR OF SCIENCE IN AGRICULTURAL EXTENSION AND EDUCATION**

**AGED 212: PLANT BREEDING**

***STREAM: R***

***TIME: 2 HRS***

***DAY: TUESDAY (14.30-16.30PM)***

***DATE: 6/12/22***

**THIS QUESTION PAPER CONSISTS OF THREE (3 PAGES)**

**PLEASE DO NOT OPEN UNTIL THE INVIGILATOR SAYS SO.**



**INSTRUCTIONS:** Answer questions **ONE** and any other **TWO** questions

**QUESTION ONE (30 MARKS)**

- a. Discuss three patterns of evolution of cultivated crops. (4 mks)
- b. Briefly discuss the procedure of releasing new varieties. (3 mks)
- c. List five main differences between breeding self pollinated and cross pollinated crops. (5 mks)
- d. Explain giving examples the meaning of the following terms in plant breeding: (3 mks)
  - i) Diallel cross
  - ii) Parthenogenesis
  - iii) Gene for gene relationship
- e. Explain giving examples the meaning of the following terms in plant Breeding (3 mks)
  - i) Microcenter
  - ii) Pure line
  - iii) MS
- f. Discuss differences between oligogenic and polygenic modes of inheritance. (2 mks)
- g. Discuss TWO types of genetic resources. (3 mks)
- h. Explain THREE mechanisms that encourage allogamy. (3 mks)
- i. Compare oligogenic with polygenic modes of inheritance. (4 mks)

**SECTION B: ESSAY QUESTIONS (40 MARKS)**

**ANSWER ANY TWO QUESTIONS**

**QUESTION TWO**

Discuss five common plant breeding methods. (20 mks)



**QUESTION THREE**

- a). Discuss stages in development of fungal diseases today. (15 mks)  
b). Explain the activities of gene bank. (5 mks)

**QUESTION FOUR**

Discuss the following:

- a) Techniques in breeding field crops. (10 mks)  
b) Male sterility in plants and methods of overcoming it. (10 mks)

**QUESTION FIVE**

Write an essay on the main achievements and challenges in plant breeding today. (20 mks)

