



*(Knowledge for Development)*

**KIBABII UNIVERSITY**  
**UNIVERSITY EXAMINATIONS**  
**2021/2022 ACADEMIC YEAR**

**FOURTH YEAR FIRST SEMESTER/THIRD YEAR FIRST  
SEMESTER  
MAIN EXAMINATION**

**FOR THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURAL  
EDUCATION AND EXTENSION**

**COURSE CODE: ABI 311/ABI 413**  
**COURSE TITLE: PLANT AND ANIMAL BREEDING**  
**DATE: 17<sup>TH</sup> MAY 2022** **TIME: 9 – 11 AM**

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**INSTRUCTIONS TO CANDIDATES**

Answer Question ONE and any other TWO Questions.

TIME: 2 Hours

This paper consists of 2 printed pages. Please Turn Over 

KIBU observes ZERO tolerance to examination cheating

## QUESTION ONE

- a. Briefly describe two ways in which plant and animal breeding can be done. (4 marks)
- b. List six important reasons for breeding plants and animals (6 marks)
- c. List three internationally recognized centers for crop and/or livestock improvement indicating the plant or animal of interest. (6 marks)
- d. List two genetic disorders arising from uncontrolled or poor breeding in livestock.  
(2 marks)
- e. Food production can be doubled while greatly decreasing the negative environmental footprint of agriculture by the adoption of four strategies: List these strategies. (4 marks)
- f. Define the following terms as used in Plant and Animal Breeding.
  - i. Gene (2 marks)
  - ii. Germplasm (2 marks)
  - iii. Heritable traits (2 marks)
  - iv. Somaclonal variation (2 marks)

## QUESTION TWO

With examples, discuss the three sources/centers of genetic diversity stating the features of each centre. (20 marks)

## QUESTION THREE

Discuss five methods/techniques of germplasm conservation (20 marks)

## QUESTION FOUR

Write short notes on five breeding strategies employed in the improvement of crops and livestock production. (20 marks)

## QUESTION FIVE

The process of improving crop traits and developing a hybrid variety, with regard to a given species, typically involves several steps: Describe these steps. (20 marks)