(5)

(*Knowledge for Development*)

KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS
2022/2023 ACADEMIC YEAR

SECOND YEAR FIRST SEMESTER
SPECIAL/SUPPLEMENTARY EXAMINATIONS

FOR THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE EDUCATION AND EXTENSION

COURSE CODE: ABI 311
COURSE TITLE: PLANT AND ANIMAL BREEDING
DATE: 15TH AUGUST 2023 **TIME:** 11 – 1 PM

INSTRUCTIONS TO CANDIDATES

Answer Question ONE and any other TWO Questions.

TIME: 2 Hours

This paper consists of 2 printed pages. Please Turn Over

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QUESTION ONE

a. Explain the applications of allopolyploidy in crop improvement **(4 marks)**
b. Outline the limitations of mutation in plant breeding program **(8 marks)**
c. List the components of tissue culture media **(4 marks)**
d. Define the following terms.
    i. Polyploidy **(2 marks)**
    ii. Inbreeding depression **(2 marks)**
    iii. Somatic hybridization **(2 marks)**
    iv. Cloning **(2 marks)**
    v. Hybrid vigor **(2 marks)**
e. Explain the Importance of genetic diversity in a breeding program **(4 marks)**
f. Explain the mechanisms promoting self-pollination in plants **(4 marks)**

QUESTION TWO

Discuss the practical applications of tissue culture in plant breeding **(20 marks)**

QUESTION THREE

Explain how the following techniques are used in plant breeding program

i. Cytoplasmic male sterility (CMS) (**10 marks**)
ii. Genetic male sterility (**10 marks**)

QUESTION FOUR

Give a detailed account of breeding methods in plants **(20 marks)**

QUESTION FIVE

Describe the set-up of animal breeding program **(20 marks**)