



FreeExams.co.ke

**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



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)