



1ST SEMESTER 2018/2019

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UNIVERSITY OF ESWATINI

RESIT PAPER

**PROGRAMMES: BACHELOR OF SCIENCE IN AGRONOMY YEAR FOUR
BACHELOR OF SCIENCE IN HORTICULTURE YEAR FOUR**

COURSE CODE: CPR 403

TITLE OF PAPER: CROP BREEDING

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER ALL QUESTIONS

**DO NOT OPEN THIS PAPER UNTIL PERMISSION HAS BEEN GRANTED BY THE
CHIEF INVIGILATOR**

QUESTION 1

Write short notes on the following crop breeding terms;

- a) *Ex situ* conservation of plant genetic resources. (4 Marks)
 - b) Crop wild relatives (3 Marks)
 - c) A sporophytic self-incompatibility (3 Marks)
 - d) Gametophytic apomixes (3 Marks)
 - e) Quantitative traits (4 Marks)
 - f) Broad sense heritability (3 Marks)
 - g) Genetic advance (5 Marks)
- [25 MARKS]**

QUESTION 2

- a) Define crop breeding and give five (5) specific objectives of crop breeding. (12 Marks)
 - b) Discuss the implementation of a typical pedigree plant breeding method including its advantages and disadvantages. (13 Marks)
- [25 MARKS]**

QUESTION 3

- a) Define Inbreeding depression in the context of crop breeding. Discuss the utility and importance of inbreeding depression in crop breeding programmes. (13 Marks)
 - b) Define heterosis and discuss with relevant illustrations, the genetic basis of heterosis in crop plants. (12 Marks)
- [25 MARKS]**

QUESTION 4

Write a paper for a presentation to a UNESWA departmental seminar on the uses of molecular markers in modern crop breeding programmes. Your paper should also include the different types of molecular markers that are commonly used in crop breeding programmes. **[25 MARKS]**