

**NATIONAL UNIVERSITY OF LESOTHO**

**FACULTY OF AGRICULTURE**

**B.Sc. AGRICULTURE EXAMINATION**

**CPS 317: PRINCIPLES AND METHODS OF PLANT BREEDING**

**DECEMBER 2017**

**MARKS: 100**

**TIME: 3HRS**

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**INSTRUCTIONS: ANSWER ALL THE QUESTIONS**

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**QUESTION 1 [20 marks]**

Plant Breeding is all about improving traits of economic importance in crop plants through established methods. Explain only ten (10) common objectives of plant breeding.

**QUESTION 2 [30 marks]**

With an illustration of a diagram explain the following:

- a) Mode of reproduction in crop plants (12)
- b) Different types of allelic interactions (3)
- c) Different types of cross-over (3)
- d) General and specific combining ability (12)

**QUESTION 3 [30 marks]**

Compare and contrast half-sib with progeny test, half-sib with test-cross and full-sib selection.

**QUESTION 4 [20 marks]**

Explain the following:

- a) Difference between quantitative and qualitative traits (10)
- b) Pollination behavior in crops (4)
- c) Features promoting cross-pollination (6)