



**KENYATTA UNIVERSITY**  
**UNIVERSITY EXAMINATIONS 2008/2009**  
**INSTITUTE OF OPEN LEARNING (IOL)**  
**EXAMINATION FOR THE DEGREE OF**  
**BACHELOR OF EDUCATION AND BACHELOR OF SCIENCE**

**SBT 421: PLANT BREEDING**

**DATE: FRIDAY 9<sup>TH</sup> JANUARY 2009      DATE: 8.00 A.M. – 10.00 A.M.**

**INSTRUCTIONS**

- Answer **ALL** questions in **Section A** and **ONE** question in **Section B**.
- Answers in Section A should be written in the **spaces provided** on the question paper.

**SECTION A:      Essay Questions (5 marks Each)**

1. Outline the main certification procedure in releasing new varieties.

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4. Discuss patterns of evolution in cultivated crops. Give examples in each case.

5. Outline the main features in recurrent selection.

6. Explain, giving examples, the meaning of the following terms in plant breeding:

a) Bichogamy

b) Microcentre

c) Parthenogenesis

d) Conventional cross

e) Enantiostyly

7. Briefly discuss a tea plant under the following:

f) Main breeding objectives

g) Ploidy levels

h) Hybridisation and selection

i) Available varieties in Kenya

8. Explain how the following differ:
- a) Sporophytic and gametophytic incompatibility systems.
  - b) Cytoplasmic and Genetic Male Sterility
  - c) Primary and Secondary center of origin
  - d) Physiological race and pathotype
  - e) Domestication and introduction

**SECTION B: ESSAY QUESTION (30 MARKS)**

**Answer any ONE Question**

1. Discuss the main features in each of the following breeding methods.
  - a) Backcross
  - b) Clonal selection
  - c) Pure-line breeding
  - d) Mass selection
  - e) Conventional cross
2. Write an essay on pest and disease resistance in crop plants.
3. Write an essay on the current and future challenges and achievements in plant breeding.

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