



1ST SEMESTER 2010/2011

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UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

**PROGRAMME: BACHELOR OF SCIENCE IN HORTICULTURE
YEAR IV AND BACHELOR OF SCIENCE IN
AGRONOMY YEAR IV**

COURSE CODE: HORT 403

TITLE OF PAPER: PLANT BIOTECHNOLOGY

TIME ALLOWED: TWO (2) HOURS

INSTRUCTION: ANSWER ANY FOUR (4) QUESTIONS

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THE CHIEF INVIGILATOR**

ANSWER ANY FOUR (4) QUESTIONS

Question 1

- (a) List **five** genetic and **five** non-genetic engineering techniques of plant improvement. [5 marks]
- (b) Discuss any **two** of each technique. [20 marks]
[25 marks].

Question 2

- (a) What is recombinant DNA (rDNA)? [5 marks]
- (b) Describe the methods of making recombinant DNA. [12 marks]
- (c) Give a **schematic** outline of Random Amplified Polymorphic DNA (RAPD) analysis. [8 marks]
[25 marks]

Question 3

- (a) What is a molecular/genetic marker? [2 marks]
- (b) What are the general characteristics of genetic markers? [7 marks]
- (c) Discuss the merits and demerits of GMO in Agriculture. [16 marks]
[25 marks]

Question 4

What are the steps involved in the selection and regeneration of transformed plant cells. **[25 marks]**

Question 5

Biotechnology is a potential threat to the survival of Agro-biodiversity. Discuss? **[25 Marks]**