



1ST SEMESTER 2009/2010

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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) What is an aseptic condition? [3 marks]
 - b) What is the importance of Gel electrophoresis in biotechnology? [5 marks]
 - c) What are restriction enzymes and name their types. [5 marks]
 - d) What is the importance of a carbon source in the MS media? [5 marks]
 - e) Describe the process of seed sterilization [7 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 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

The release of transgenic materials is often under strict control and scrutiny. Describe the regulatory process for transgenic crops according to:

- a) Institutional Bio safety Committee (IBC). [12 marks]
- b) Environmental Protection Agency (EPA) [13 marks]

[25 marks]

Question 5

Biotechnology is a potential threat to the survival of Agrobiodiversity.

Discuss?

[25 Marks]