



SUPPLEMENTARY 2013/2014

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UNIVERSITY OF SWAZILAND

SUPPLEMENTARY EXAMINATION PAPER

**PROGRAMMES: 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**

INSTRUCTION: ANSWER ANY FOUR (4) QUESTIONS.

Question 1

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

[25 marks]

Question 2

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

[25 marks]

Question 3

Explain how biotechnology is a potential threat to the survival of Agrobiodiversity.

[25 marks]

Question 4

- (a) What is plant biotechnology? [5]
- (b) What are the potential benefits of plant biotechnology to agricultural production? [20]

[25 marks]

Question 5

- (a) Discuss the Restriction Fragment Length Polymorphism (RFLP) analysis. [15]
- (b) What are the problems associated with this method. [10]

[25 marks]