



SUPPLEMENTARY 2010/2011

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UNIVERSITY OF SWAZILAND

SUPPLEMENTARY 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 electroporation? [3 marks]
 - b) What is the importance of Gel electrophoresis in biotechnology? [5 marks]
 - c) What are restriction enzymes? Name their types. [5 marks]
 - d) How would you accomplish DNA transformation in cereals? [5marks]
 - e) Describe the process of seed sterilization [7 marks]
- [25 marks]**

Question 2

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

Question 3

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

Question 4

- (a) What is a genetically modified organism (GMO)? [5 marks]
 - (b) Discuss the merits and demerits of GMO in agriculture. [20 marks]
- [25 Marks]**

Question 5

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]