



SUPPLEMENTARY 2016/17

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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 the factors affecting plant tissue culture? [5]
 - d) Distinguish between genetic engineering and plant tissue culture. [6]
 - e) What are restriction enzymes and name their types? [6]
- [25 marks]

Question 2

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

Question 3

Explain how biotechnology is a potential threat to the survival of Agro biodiversity. [25 marks]

Question 4

Discuss the process and application of cryopreservation in germplasm storage. [25 marks]

Question 5

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