



SUPPLEMENTARY 2017/2018

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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) Describe an aseptic condition? [3]
- b) Describe the importance of Gel electrophoresis in biotechnology? [5]
- c) Describe the media requirements for plant tissue culture. [5]
- d) Describe the importance of a carbon source and agar in the MS media? [6]
- e) Distinguish between genetic engineering and plant tissue culture. [6]

[25 marks]

Question 2

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

[8]

[25 marks]

Question 3

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

[25 marks]

Question 4

Explain how biotechnology is a potential threat to the survival of Agro biodiversity?

[25 marks]

Question 5

- (a) Describe the production of genetically modified crops. [12]
- (b) Describe the **merits** and **demerits** of such crops in Swaziland? [13]

[25 marks]