



2ND SEMESTER 2018/2019

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UNIVERSITY OF ESWATINI

FINAL EXAMINATION PAPER

PROGRAMMES:

**BACHELOR OF SCIENCE IN HORTICULTURE
YEAR IV AND BACHELOR OF SCIENCE IN
AGRONOMY YEAR IV**

COURSE CODE:

HRT402

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) Define aseptic condition. [3]
- b) Describe the importance of Gel electrophoresis in biotechnology. [4]
- c) Describe the factors affecting plant tissue culture. [4]
- d) Distinguish between genetic engineering and plant tissue culture. [6]
- e) Explain the technical limitations of GM technology in plants. [8]

[25 marks]

Question 2

- (a) Define recombinant DNA (rDNA). [5]
- (b) Describe the method of making recombinant DNA. [12]
- (c) Describe briefly the Amplified Fragment Length Polymorphism DNA analysis. [8]

[25 marks]

Question 3

- (a) Explain the causes of somaclonal variation in plants. [15]
- (b) Describe the merits and demerits of somaclonal variations. [10]

[25 marks]

Question 4

Discuss the process and application of cryopreservation in germplasm storage.

[25 marks]

Question 5

- (a) Describe the process of micro-propagation in plants. [15]
- (b) What are the advantages of using plant tissue culture methods in plant propagation?

[10]

[25 marks]