



RESIT 2018/2019

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UNIVERSITY OF ESWATINI

RESIT 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) Describe the essential requirements for using marker assisted selection (MAS) in plant breeding research? [5]
 - (b) Why is the application of genetic engineering important in crop production? [5]
 - (c) Describe restriction enzymes and their types. [5]
 - (d) Describe the characteristics that make plant cells suitable for tissue culture. [5]
 - (e) Describe the properties of DNA vector. [5]
- [25 marks]

Question 2

Discuss the Restriction Fragment Length Polymorphism (RFLP) analysis.

[25 marks]

Question 3

- (a) Describe the production of transgenic crops. [12]
 - (b) What are the merits and demerits of such crops in Ewsatini? [13]
- [25 marks]

Question 4

(a) Describe the steps involved in the selection and regeneration of transformed cells.

[10]

(b) Describe the regulatory process of the Institution Bio safety Committee (IBC) for transgenic crops.

[15]

[25 marks]

Question 5

Discuss the potential benefits of plant biotechnology in agricultural production.

[25 marks]