



1ST SEM. 2007/2008

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UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

**PROGRAMMES: BACHELOR OF SCIENCE IN HORTICULTURE
 YEAR 4 AND BACHELOR OF SCIENCE IN
 AGRONOMY YEAR 4**

COURSE CODE: HORT 403

TITLE OF PAPER: PLANT BIOTECHNOLOGY

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS

**DO NOT OPEN THIS PAPER UNTIL PERMISSION HAS BEEN GRANTED BY
THE CHIEF INVIGILATOR**

INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS

QUESTION 1

(a) Describe the contributions of industrial biotechnology to human welfare [10]

(b) Describe the future and emerging applications of plant biotechnology for human welfare [15]

[25]

QUESTION 2

Discuss the roles of plant biotechnology in the achievement of food security [25]

QUESTION 3

Discuss the DNA isolation by the following methods:

(i) Agarose gel electrophoresis [15]

(ii) Nucleic acid blotting [10]

[25]

QUESTION 4

Discuss the gene transfer by use of *Agrobacterium tumefaciens*

[25]

QUESTION 5

Discuss the role of molecular markers in genetic engineering

[25]