



**1<sup>ST</sup> SEM. 2008/2009**

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**UNIVERSITY OF SWAZILAND**

**FINAL EXAMINATION PAPER**

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

**COURSE CODE: HORT 403**

**TITLE OF PAPER: PLANT BIOTECHNOLOGY**

**TIME ALLOWED: TWO (2) HOURS**

**INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS**

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THE CHIEF INVIGILATOR**

**INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS**

**Question 1**

- (a) List **5** genetic and **5** non-genetic engineering techniques of plant improvement [5 marks]  
(b) Discuss any **two** of each technique. [20 marks]  
[25 marks].

**Question 2**

- (a) What is recombinant DNA (rDNA)? [5 marks]  
(b) How Recombinant DNA is made? [12 marks]  
(c) State its importance to humanity. [8 marks]  
[25 marks]

**Question 3**

- (a) What is a molecular marker? [2 marks]  
(b) What are the general characteristics of genetic markers? [8 marks]  
(c) Give a **schematic** outline of Random Amplified Polymorphic DNA (RAPD) analysis. [15 marks]  
[25 marks]

**Question 4**

- (a) What is a genetically modified organism (GMO)? [5 marks]  
(b) Discuss the merits and demerits of GMO in Agriculture. [20 marks]  
[25 Marks]

**Question 5**

Discuss the advantages and disadvantages of biotechnology on agrobiodiversity.

[25 Marks]