



**1<sup>ST</sup> SEM. 2016/17**

**PAGE 1 OF 2**

**UNIVERSITY OF SWAZILAND**

**FINAL EXAMINATION PAPER**

**PROGRAMME:**

**BACHELOR OF SCIENCE IN HORTICULTURE  
YEAR 4**

**COURSE CODE:**

**HORT 402**

**TITLE OF PAPER:**

**HERBS, SPICES AND TRADITIONAL VEGETABLES**

**TIME ALLOWED:**

**TWO (2) HOURS**

**INSTRUCTION:**

**ANSWER ANY FOUR (4) QUESTIONS**

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

**INSTRUCTION: ANSWER ANY FOUR (4) QUESTIONS****QUESTION 1**

- a) Discuss spices from a historical perspective.  
 b) List five spice plants and describe the part that is used for each.

[15marks]

[10 marks]

**[25 marks]****QUESTION 2**

Describe the control of five insect pests using herbs and spices.

**[25 marks]****QUESTION 3**

Describe the growing and use of the following herbs:

- (i) Fennel (*Foeniculum vulgare*).  
 (ii) Lemon grass (*Cymbopogon citratus*).

[13 marks]

[12 marks]

**[25 marks]****QUESTION 4**

- a) Describe essential oils and oil resins.  
 b) Discuss three important uses of spices.

[10 marks]

[15 marks]

**[25 marks]****QUESTION 5**

Describe physical appearance, production and use of the following traditional vegetables:

- (i) *Amaranthus hybridus*  
 (ii) *Momordica spp*  
 (iii) *Corchorus olitorius*

[9 marks]

[8 marks]

[8 marks]

**[25 marks]**



**1<sup>st</sup> SEMESTER 2016/17**

**PAGE 1 OF 2**

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**FINAL 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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**INSTRUCTION: ANSWER ANY FOUR (4) QUESTIONS.**

**Question 1**

- (a) What are 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) What are the technical limitations of genetic modification in crop production? [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**

- (a) Discuss the Restriction Fragment Length Polymorphism (RFLP) analysis. [15]
- (b) What are the problems associated with this method? [10]

[25 marks]

**Question 3**

- (a) Describe the production of transgenic crops. [12]
- (b) What are the **merits** and **demerits** of such crops in Swaziland? [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**

- (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]