



**SUPPLEMENTARY 2018/2019**

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**UNIVERSITY OF ESWATINI**

**SUPPLEMENTARY EXAMINATION PAPER**

**PROGRAMMES:**

**BACHELOR OF SCIENCE IN HORTICULTURE  
YEAR IV AND BACHELOR OF SCIENCE IN AGRONOMY  
YEAR IV (OLD PROGRAMME)**

**COURSE CODE:**

**HORT 403**

**TITLE OF PAPER:**

**PLANT BIOTECHNOLOGY**

**TIME ALLOWED:**

**TWO (2) HOURS**

**INSTRUCTION:**

**ANSWER ANY FOUR (4) QUESTIONS**

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CHIEF INVIGILATOR**

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

### **Question 1**

- a) What is an aseptic condition? [3]
- b) What is the importance of Gel electrophoresis in biotechnology? [5]
- c) What are the factors affecting plant tissue culture. [5]
- d) What is the importance of a carbon source and agar in the MS media? [6]
- e) Distinguish between genetic engineering and plant tissue culture. [6]

**[25 marks]**

### **Question 2**

- (a) What is recombinant DNA (rDNA)? [5]
- (b) Describe the method of making recombinant DNA. [12]
- (c) Describe the regulatory process of the Institution Bio safety Committee (IBC) for transgenic crops. [8]

**[25 marks]**

### **Question 3**

Explain in details how biotechnology is a potential threat to the survival of Agrobiodiversity. [25 marks]

### **Question 4**

Discuss the process and application of cryopreservation in germplasm storage.

**[25 marks]**

**Question 5**

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

**[25 marks]**