

UNIVERSITY OF ESWATINI
DEPARTMENT OF BIOLOGICAL SCIENCES
MAIN EXAMINATION PAPER MAY 2019

TITLE OF PAPER: MODERN TRENDS IN BIOLOGY II

COURSE CODE: BIO422

TIME ALLOWED: THREE HOURS

INSTRUCTIONS:

1. THIS PAPER IS DIVIDED INTO 2 (TWO) SECTIONS
2. ANSWER 2 (TWO) QUESTION FROM EACH SECTION IN A SEPARATE BOOKLET
3. EACH QUESTION CARRIES 25 MARKS
3. ILLUSTRATE YOUR ANSWERS WITH LARGE AND CLEARLY LABELLED DIAGRAMS WHERE APPROPRIATE

SPECIAL REQUIREMENTS: NONE

THIS PAPER IS NOT TO BE OPENED UNTIL PERMISSION HAS BEEN GRANTED BY THE INVIGILATORS

SECTION A (Answer two questions)

Question 1

Describe the technological innovations that have been used to produce genetically modified maize and briefly explain the national approval process and biosafety protocol. (25 Marks)

Question 2

Discuss the potential of sorghum (*Sorghum bicolor*) as a staple cereal in Southern Africa, in terms of its products. (25 Marks)

Question 3

Discuss the significance of wheat (*Triticum Aestivum*) as a grain crop in Africa, with reference to South Africa and Swaziland. (25 Marks)

SECTION B (Answer two questions)

Question 4

Discuss the application of forensic entomology in homicide investigations.

(25 marks)

Question 5

Explain why microsatellites are the preferred molecular markers in human forensic analyses.

(25 marks)

Question 6

Discuss the strengths and weaknesses of palynological analysis as a tool in forensic investigations.

(25 marks)

END OF EXAMINATION PAPER