UNIVERSITY OF ESWATINI

FACULTY OF SCIENCE AND ENGINEERING

DEPARTMENT OF BIOLOGICAL SCIENCES

MAIN EXAMINAITON PAPER 2020/2021

COURSE CODE:	BIO422
TITLE OF PAPER:	MODERN TRENDS IN BIOLOGY II
TIME ALLOWED:	**THREE** (3) HOURS
INSTRUCTIONS:	NUMBERS IN BRACKETS DENOTE THE NUMBER OF MARKS

THIS PAPER COMPRISES OF **TWO SECTIONS**.

SECTION A COMPRISES 2 QUESTIONS (50 MARKS). SECTION B COMPRISES 4 QUESTIONS (50 MARKS). ANSWER ALL QUESTIONS IN SECTIONS A AND B.

ANSWER THE SECTIONS A AND B IN SEPARATE BOOKLETS.

CLEARLY INDICATE THE SECTION AND QUESTION NUMBER ON YOUR ANSWER PAPER.

NO ADDITIONAL MATERIAL (E.G. NOTES, CALCULATORS ETC) MAY BE TAKEN INTO THE EXAMINATION.

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

BIO422 Exam (Main) Section A   **Total marks available: 50**

There are two (2) questions in this section. Answer **ALL** the questions in this section

Section A Question 1

Discuss transgenesis and explain how this technological development may be applied to the maize (*Zea mays*) crop for food security.   (25 Marks)

Section A Question 2

Consider the products of wheat and describe possible traits as well as a protocol that you might pursue in a breeding programme of the wheat (*Triticum aestivum*) crop.

(25 Marks)

NOW USE A SEPARATE BOOKLET TO ANSWER SECTIONS B AND C

BIO422 Exam (Main) Section B   **Total marks available: 50**

Section B Question 1

What is Science?   (5 Marks)

Section B Question 2

Outline and explain the steps for the hypothetico-deduction (scientific) method of investigation. Make sure to explain key terms i.e hypothesis, predictions, and their characteristics.   (25 Marks)

Section B Question 3

Explain the difference between Induction and Deduction methods, indicating which steps of the scientific method of investigation constitute each process   (10 Marks)

Section B Question 4

How does model selection differ from the traditional scientific method of null hypothesis testing   (10 Marks)

END OF EXAMINATION