

UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER 2005

TITLE OF PAPER: APPLIED BIOLOGY

COURSE CODE: B405

TIME ALLOWED: THREE HOURS

- INSTRUCTIONS:
1. ANSWER FOUR QUESTIONS AT LEAST ONE FROM EACH SECTION
 2. EACH QUESTION CARRIES TWENTY FIVE (25) MARKS
 3. ILLUSTRATE YOUR ANSWERS WITH LARGE AND CLEARLY LABELLED DIAGRAMS WHERE APPROPRIATE

SPECIAL REQUIREMENTS:

USE FOUR EXAM FOLDERS, ONE FOR EACH SECTION [A, B, C, & D]

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

SECTION A

QUESTION 1

Discuss the trends in the world's population in the time window 1950 to 2050. What are the implications and impacts of these trends on natural resource utilization and conservation.

[25 MARKS]

QUESTION 2

What is meant by the term "Sustainable use"? What factors need to be considered for the sustainable utilization of a biotic natural resource?

[25 MARKS]

SECTION B

QUESTION 3

Considering the ultra structure of plant cells, explain how pathogens invade their hosts?

[25 MARKS]

QUESTION 4

How does one use knowledge of the biology of the host and that of the pathogen in managing a plant disease? Use a disease you have studied to illustrate your answer.

[25 MARKS]

SECTION C**QUESTION 5**

- (a) What are man-made lakes? (5 marks)
(b) Make a case for or against the creation of man-made lakes in Swaziland.

(20 marks)

[TOTAL MARKS = 25]**QUESTION 6**

Write a short essay on the following water-borne diseases, including in your notes their control measures;

- a) Cholera (5 marks)
b) Malaria (10 marks)
c) Bilharzia (10 marks)

[TOTAL MARKS = 25]**SECTION D****QUESTION 7**

Explain the applications of biotechnology in medicine and the pharmaceutical industry.

[25 MARKS]**QUESTION 8**

"Biotechnology is a powerful tool that can contribute towards the improvement of the livelihoods of the rural poor in developing countries". Discuss this statement using specific case studies to support your answer.

[25 MARKS]