UNIVERSITY OF SWAZILAND

SUPPLEMENTARY EXAMINATION

PROGRAMME: B.SC. IN AGRICULTURAL EDUCATION, B.SC. IN AGRONOMY, B.SC. IN ANIMAL SCIENCE, B.SC. IN FOOD SCIENCE, NUTRITION AND TECHNOLOGY, B.SC. IN HOME ECONOMICS, B.SC. IN HOME ECONOMICS EDUCATION, AND B.SC. IN HORTICULTURE YEAR 3 (NEW PROGRAMMES)

COURSE CODE: CP 206

TITLE OF PAPER: MICROBIOLOGY

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS
BEGIN EACH QUESTION ON A NEW SHEET

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

QUESTION 1

a. Diagram each of the following flagella arrangements:

i. lophotrichous (2 marks)

ii. monotrichous (2 marks)

iii. peritrichous (2 marks)

b. i. Whay is an endospore called a resting structure? (2 marks)

ii. Of what advantage is an endospore to a bacterial cell? (2 marks)

c. i. Why are mycoplasmas resistant to antibiotics that interfere with cell wall synthesis? (5 marks)

ii. Why does penicillin have no effect on most Gram-negative bacteria? (5 marks)

iii. Differentiate recombinant DNA from genetic engineering. (5 marks)

[25 marks]

QUESTION 2

Explain how microbes are used in the following:

a. Bioremediation (5 marks)

b. Insect pest control (5 marks)

c. Sewage treatment (5 marks)

d. Industrial fermentation (5 marks)

e. Cheese production (5 marks)

[25 marks]

QUESTION 3

Explain the following:

a. Lichens (5 marks)

b. Basidiomycetes (5 marks)

c. Helminths (5 marks)

d. Enveloped viruses (5 marks)

e. Bacteriophages (5 marks)

[25 marks]

QUESTION 4

Bacteria are capable of producing two types of toxins.

a. What are toxins? (5 marks)

b. What are the two toxins produced by bacteria? (2 toxins)

c. Describe their properties. (14 marks)

d. Give an example of a bacterium that produces each type of toxin. (4 marks)

[25 marks]

QUESTION 5

a. What is the economic importance of the following:

i. Fungi (8 marks)

ii. bacteria (8 marks)

b. What is meant by:

i. normal microflora (5 marks)

ii. transient microflora (4 marks)

[25 marks]