



2nd SEMESTER 2012/2013

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UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

PROGRAMME: BACHELOR OF SCIENCE IN AGRONOMY YEAR 2, BACHELOR OF SCIENCE IN ANIMAL SCIENCE YEAR 2, BACHELOR OF SCIENCE IN ANIMAL SCIENCE (DAIRY OPTION) YEAR 2, BACHELOR OF SCIENCE IN FOOD SCIENCE, NUTRITION AND TECHNOLOGY YEAR 2, BACHELOR OF SCIENCE IN CONSUMER SCIENCE YEAR 2, BACHELOR OF SCIENCE IN CONSUMER SCIENCE EDUCATION YEAR 2, AND BACHELOR OF SCIENCE IN HORTICULTURE YEAR 2

COURSE CODE: CP 204

TITLE OF PAPER: MICROBIOLOGY

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER QUESTIONS ONE AND ANY OTHER THREE QUESTIONS

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QUESTION ONE IS COMPULSORY

QUESTION 1

A. Draw the bacterial shapes/arrangements listed below:

- (i) Bacillus that is lophotrichous (3 Marks)
 - (ii) Bacillus that is peritrichous (3 Marks)
 - (iii) Streptobacillus (2 Marks)
 - (iv) Staphylococcus (3 Marks)
- B. (i) What is the difference between base substitution and frameshift mutation? (4 Marks)
- (ii) What is the difference between a catabolic and an anabolic reaction? (4 Marks)
- (iii) What is the meaning of transcription and translation in microbial genetics? (6 Marks)

[25 MARKS]

QUESTION 2

Describe the different toxic forms of oxygen and how microorganisms overcome their toxicity.

[25 MARKS]

QUESTION 3

Compare and contrast the following:

- (i) Septate and aseptate hyphae (3 Marks)
- (ii) binucleate and dikaryotic hyphae (4 Marks)
- (iii) Staphylococcus and *Staphylococcus* (3 Marks)
- (iv) Differential and selective media (3 Marks)
- (v) Microaerophiles and aerotolerant anaerobes (4 Marks)
- (vi) Eukaryotic and prokaryotic cell, give an example of a microbe with such a cell (4 Marks)
- (vii) simple and negative staining in bacteria (4 Marks)

[25 MARKS]

QUESTION 4

- a. Draw a representative structure of a lichen and explain the function of each component. (13 Marks)
- b. Explain the role of Algae in nature (9 Marks)
- c. What is a retrovirus? (3 Marks)

[25 MARKS]

QUESTION 5

- A. List the components of blood (5 Marks)
- B. Describe the actions of phagocytotic cells in the human body. (8 Marks)
- c. Describe the mechanism of phagocytosis (12 Marks)

[25 MARKS]