



SUPPLEMENTARY EXAMINATION 2013/2014

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UNIVERSITY OF SWAZILAND

SUPPLEMENTARY 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 ANY FOUR QUESTIONS

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QUESTION 1

- a. Describe any five properties of bacteria. (10 Marks)
- b. Explain how heat (in its different forms) can be used to control microbial growth. (10 marks)
- c. What is the difference between base substitution and frameshift mutation? (5 Marks)

[25 Marks]

QUESTION 2

Contrast properties of the following:

- a. Mycoplasmas and rickettsias (8 Marks)
- b. Bacteria and fungi (12 Marks)
- c. Anabolism and catabolism (5 Marks)

[25 Marks]

QUESTION 3

- a. What are the functions of the following components of a prokaryotic cell:
 - i. Fimbria (3 marks)
 - ii. Pilus (3 marks)
 - iii. Flagellum (3 marks)
 - iv. Glycocalyx (3 marks)
 - v. Cell wall (3 marks)
- b. Describe the mutualism relationship between plants and fungi. (10 marks)

[25 marks]

QUESTION 4

Discuss the different types of bacterial toxins (exo- and endotoxins) and give at least two examples in each type. **[25 marks]**

QUESTION 5

- a. Use an example to explain the use of genetic engineering in:
 - i. therapeutic applications (10 marks)
 - ii. Agricultural applications (10 marks)
- b. State what the acronym ELISA stand for and briefly explain how the assay is done. (5 marks)