



**SUPP 2014/2015**

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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, BACHELOR OF SCIENCE IN HORTICULTURE YEAR 2, AND BACHELOR OF SCIENCE IN HORTICULTURE YEAR 3(T)**

**COURSE CODE: CP 204**

**TITLE OF PAPER: MICROBIOLOGY**

**TIME ALLOWED: TWO (2) HOURS**

**INSTRUCTIONS: ANSWER ANY FOUR QUESTIONS**

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

**QUESTION 1**

A. Explain how the arrangements listed below come about during binary fission of bacteria:

- (i) Tetrads (2 Marks)
- (ii) Staphylo (2 Marks)
- (iii) Strepto (2 Marks)
- (iv) Sarcinae (2 Marks)
- (v) Diplo (2 Marks)

B. Define the following:

- (i) Chemoautotrophs (4 Marks)
- (ii) Photoautotrophs (3 Marks)
- (iii) Photoheterotrophs (4 Marks)
- (iv) Chemoheterotrophs (4 Marks)

**[25 MARKS]**

**QUESTION 2**

- (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)
- (iv) Explain how you would go about performing a Gram stain reaction in the laboratory (11 Marks)

**[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) Reticulate and elementary bodies of chlamydia (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]**