



**2<sup>nd</sup> SEMESTER SUPPLEMENTARY EXAMINATION 2015/2016 PAGE 1 OF 3**

**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 QUESTION ANY FOUR QUESTIONS**

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

**QUESTION 1**

- A. (i) What are phagocytes (4 Marks)
  - (ii) Name the different types of phagocytes? (6 Marks)
  - B. What is inflammation and how is it characterised? (5 Marks)
  - C. Explain the following media used in a Microbiology laboratory:
    - i. Complex media (2 marks)
    - ii. Differential media (2 marks)
    - iii. Selective media (2 marks)
  - D. In a laboratory practical the bacterium *Clostridium* is stained by applying a basic stain, carbolfuchsin, with heat, decolourising with acid alcohol, and counterstaining with an acidic stain, nigrosin. Under the microscope, describe the colour of:
    - i. endospores (2 marks)
    - ii. vegetative cells (2 marks)
- [25 Marks]**

**QUESTION 2**

Differentiate the following:

- i. Fimbriae and pili in bacteria (4 marks)
  - ii. A Gram-positive and Gram-negative cell wall (8 marks)
  - iii. Psychrophiles and psychrotrophs (4 marks)
  - iv. Facultative anaerobes and aerotolerant anaerobes (4 marks)
  - v. The enzymes catalase and peroxidase in bacterial respiration (5 marks)
- [25 Marks]**

**QUESTION 3**

- A. Describe the life-cycle of the malaria causal organisms (**no diagram**) (15 Marks)
  - B. Explain the lysogenic cycle of bacteriophages. (10 Marks)
- [25 Marks]**

**QUESTION 4**

- A. Describe any three physical methods, other than heat, used to control microorganisms. (6 marks)
  - B. In microbial genetics, how is translation different from transcription? (4 marks)
  - C. What is an anticodon in microbial genetics? (2 marks)
  - D. What are the functions of mRNA and tRNA? (10 marks)
  - E. What is an exon? (3 marks)
- [25 Marks]**

**QUESTION 5**

- A. Explain and illustrate how genetic transfer occurs in bacteria. (15 marks)
  - B. What are..
    - i. transposons? (3 marks)
    - ii. Plasmids and what do they code for? (7 marks)
- [25 Marks]**