



1ST SEM. 2004/2005

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UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

**PROGRAMME: BACHELOR OF SCIENCE IN AGRICULTURE
YEAR 4 (CROP PRODUCTION,
HORTICULTURE OPTIONS) AND BACHELOR
OF SCIENCE IN AGRICULTURAL EDUCATION
YEAR 4**

COURSE CODE: CP 403

TITLE OF PAPER: MICROBIOLOGY

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER ANY FOUR QUESTIONS

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BY THE CHIEF INVIGILATOR**

INSTRUCTIONS : ANSWER ANY FOUR (4) QUESTIONS

QUESTION 1 [25 marks]

- (i) Differentiate between the terms pathogenicity and virulence [3, 3]
- (ii) The LD₅₀ for botulin toxin is 0.20 mg
The LD₅₀ for salmonella toxin is 100mg
 - (a) Which of these is the more potent toxin? [3]
 - (b) Justify your answer from (a) above. [4]
 - (c) What does the "50" in the term LD₅₀ mean? [3]
- (iii) Food poisoning can be divided into two (2) categories: food infection and food intoxication. In tabular form, (as shown below) compare and contrast the two categories.

Food infection [5]	Food intoxication [4]

QUESTION 2 [25 marks]

- (a) What is autoimmunity? [4]
- (b) How does autoimmunity occur? [6]
- (c) What is hypersensitivity? [6]
- (d) How does hypersensitivity come about? [6]
- (e) What type of specific immune reaction can be caused by a bee sting to a susceptible host? [3]

QUESTION 3**[25 marks]**

Copy and complete the following table about special features that may be present in bacteria and viruses

Organisms	Special feature(s) [2 marks each]	An advantage conferred by this feature [3 marks each]
Bacteria (mention 4 features)	1.	
	2.	
	3.	
	4.	
Viruses (mention 1 feature)	1.	

QUESTION 4 [25 marks]

(a) For each of the following four (4) pairs of terms, state how each pair compares and how it contrasts. Present your answer in table form as shown below.

Pairs of terms		What is common about the two terms mentioned in the pair is ... [2 marks each]	The difference between the two terms mentioned in the pair is ... [4 marks each]
I	Germicides and...		
	Chemotherapeutic agents		
II	Synthetic drugs and...		
	Antibiotics		
III	Thermal death time and...		
	Thermal death point		
IV	Incineration and...		
	Autoclaving		

(b) What is common about all the concepts included in the first column? [1]

QUESTION 5 [25 marks]

(i) What is the term used to mean “the cause of a disease”? [3]

(ii) What diseases do the following organisms cause? [22]

1. *Agrobacterium tumefaciens*

2. *Rhizobium*

3. *Staphylococcus aureus*

4. Rhabdovirus

5. Paramyxovirus

(iii) What organisms cause the following diseases?

6. Fowl cholera

7. Canine rickettsial disease

8. Rusts

9. Potato blight

10. Brown rot

11. Flat sour spoilage