NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF ENVIRONMENTAL SCIENCE

DEPARTMENT OF ENVIRONMENTAL HEALTH

BACHELOR OF ENVIRONMENTAL SCIENCE (HONS) DEGREE IN PUBLIC HEALTH

PARASITOLOGY AND MICROBIOLOGY

EPH 1104

Examination Paper

October 2024

This examination paper consists of **TWO** pages

Time Allowed:	3 hours
Total Marks:	100
Special Requirements:	
Examiner's Name:	Dr. L. Moyo

INSTRUCTIONS

1. Answer any **FOUR** questions
2. Each question carries **25** marks
3. Where appropriate, use illustrations to demonstrate your answer

MARK ALLOCATION

QUESTION	MARKS
1.	25
2.	25
3.	25
4.	25
5.	25
6.	25
TOTAL	100

Question one
(a) Describe the Koch's postulates **(5)**
(b) The genus name of a bacterium is "erwinia" and the species name is "carotovora". Write the scientific name of the bacterium correctly **(2)**
(c) Explain the methods, principles, and mechanisms of sterilisation and disinfection **(18)**

Question two
(a) Write an essay on the differences between gram-positive and gram-negative bacteria and techniques that can be used to differentiate these two groups **(15)**
(b) Using an example define LD50 (lethal dose) **(2)**
(c) Describe the role of determinants of bacterial pathogenicity in host-pathogen interactions **(8)**

Question three
(a) Compare and contrast prokaryotic and eukaryotic cells **(10)**
(b) Using a diagram, explain the phases involved in the growth curve of bacterial culture **(15)**

Question four
(a) What are the morphological and biochemical criteria for the classification of viruses **(10)**
(b) Discuss the infection process of viruses **(15)**

Question five
(a) Detail the life cycle of Plasmodium species that cause Malaria **(15)**
(b) Diagnosis is important for the treatment and control of diseases. Discuss **(10)**

Question six
(a) Describe the characteristics of an ideal antibiotic **(10)**
(b) Explain the mode of action of antibiotics based on their targets in a pathogen **(15)**