



(University of Choice)

**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

MAIN CAMPUS

**UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR**

FOURTH YEAR SECOND SEMESTER EXAMINATIONS

MAIN EXAMINATION

**FOR THE DEGREE
OF
BACHELOR OF SCIENCE IN BIOCHEMISTRY**

COURSE CODE: SBM 422

COURSE TITLE: PATHOGENESIS OF MICROBIAL DISEASES

DATE: WEDNESDAY, 20TH APRIL 2022 TIME: 3:00 – 5:00 P.M.

INSTRUCTIONS TO CANDIDATES

Answer **ALL** questions in section A
Answer **TWO** questions in section B

TIME: 2Hours

MMUST observes **ZERO** tolerance to examination cheating

This Paper Consists of 2 Printed Pages. Please Turn Over. ►

SECTION A (SHORT ANSWER QUESTIONS, 40 MARKS)

1. Briefly explain two (2) infection-related characteristics of disease-causing agents. [5 marks]

2. Name the target sites of infection for the following human pathogens;
 - (i) *Plasmodium malariae*
 - (ii) Human Immunodeficiency Virus
 - (iii) Covid-19
 - (iv) *Vibrio cholerae*
 - (v) *Neisseria gonorrhoeae* [5 marks]

3. Briefly describe the infection of the Silk worm *Bombyx mori* by entomopathogenic nematodes. [5 marks]

4. Name two (2) signaling compounds in plant immune defenses against the microbial pathogen *Pseudomonas syringae*. [5 marks]

5. State two (2) body channels through which the Newcastle disease virus of poultry is shed and dispersed. [5 marks]

6. State one (1) sign of infection of the following fungal pathogens in the edible mushroom *Pleurotus eryngii*.
 - (i) *Cladobotryum* sp.
 - (ii) *Trichoderma* sp. [5 marks]

7. Briefly explain the mechanisms behind the symptoms of Elephantiasis disease caused by the filarial worm *Wuchereria bancrofti*. [5 marks]

8. State two (2) reasons that may render a potent Covid-19 vaccine ineffective in protecting individuals from the deadly viral infection. [5 marks]

SECTION B (ESSAY QUESTIONS, 30 MARKS)

Answer questions 9 (Compulsory)

9. Discuss the pathogenesis of the Syphilis disease caused by the spirochete *Treponema pallidum*. [15 marks]

Choose one question

10. Describe the disease triangle of the bean common mosaic virus (BCMV) using appropriate illustrations. [15 marks]
11. Describe the disease triangle of *Schistosoma haematobium* that causes Schistosomiasis (Bilharzia) using appropriate illustrations. [15 marks]