



OFFICE OF THE DEPUTY PRINCIPAL  
ACADEMICS, STUDENT AFFAIRS AND RESEARCH

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## UNIVERSITY EXAMINATIONS

### 2020 /2021 ACADEMIC YEAR

FOURTH YEAR SECOND SEMESTER MAIN EXAMINATION

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

**COURSE CODE: MIC 416**

**COURSE TITLE: PATHOGENIC MICROORGANISMS**

**DATE: 19<sup>TH</sup> JULY, 2021**

**TIME: 08.00 AM – 11.00 AM**

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### INSTRUCTIONS TO CANDIDATES

- SEE INSIDE

**THIS PAPER CONSISTS OF 3 PRINTED PAGES**

**PLEASE TURN OVER**

**REGULAR – MAIN EXAM**

**MIC 416: PATHOGENIC MICROORGANISMS**

**STREAM: BSc. MICROBIOLOGY**

**DURATION: 3 Hours**

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**INSTRUCTIONS TO CANDIDATES**

- i. Answer ALL questions from section A and any THREE from section B.*
  - ii. Diagrams should be used whenever they serve to illustrate the answer.*
  - iii. Do not write on the question paper.*
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**SECTION A (24 MARKS)**

**Question One**

- a) Give the meaning of the following terms (4 Marks)
  - i. Incubation period
  - ii. Nosocomial infection
  - iii. Sepsis
  - iv. Prepatency
- b) Distinguish between the following terms.
  - i. Contamination and colonization (2 Marks)
  - ii. Pathogenicity and virulence (2 Marks)
  - iii. Benign disease and malignant disease (2 Marks)
- c) Explain mechanisms by which pathogenic bacteria cause disease in plants (2 Marks)

**Question Two**

- a) Describe features considered when classifying diseases in plants. (4 Marks)
- b) Briefly describe the disease triangle. (4 Marks)
- c) Outline a technique of isolating fungi from clinical specimen (4 Marks)

**SECTION B (36 MARKS)**

**Question Three**

- a) Give the difference between bacteria and mycoplasma (2 Marks)
- b) Describe the diagnostic symptoms of plant bacterial infections (6 Marks)
- c) Tabulate four differences between endotoxins and exotoxins. (4 Marks)

**Question Four**

- a) Outline the characteristics of viruses (2 Marks)
- b) Describe the replication and spread of a pathogenic viruses (10 Marks)

**Question Five**

- a) Outline beneficial effects of 'free-living' nematodes to humans. (3 Marks)
- b) Distinguish between true pathogen and opportunistic pathogen (3 Marks)
- c) Discuss the selection and inoculation of culture media for fungal identification. (6 Marks)

**Question Six**

- a) Name two causative agents of human mycoplasmas and the disease they cause. (4 Marks)
- b) Discuss the pathogenicity of human mycoplasmas (6 Marks)
- c) Describe how cholera exotoxin affects the host (2 Marks)

**Question Seven**

- a) Outline the modes of transmission of pathogens under the following headings
  - i. Direct routes (6 Marks)
  - ii. Indirect routes (4 Marks)
- b) Explain the role of the following molecules in pathogenicity
  - i. Adhesins (1 Mark)
  - ii. Impedins (1 Mark)

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