

UNIVERSITY OF BOLTON

**SCHOOL OF CLINICAL AND BIOMEDICAL
SCIENCES**

BSc (Hons) MEDICAL BIOLOGY

SEMESTER TWO EXAMINATIONS 2023/24

MEDICAL MICROBIOLOGY

MODULE NO: BIO5010

Date: Wednesday 15 May 2024

Time: 10 – 12.30

INSTRUCTIONS TO CANDIDATES:

Candidates are advised that the examiners attach importance to legibility of writing and clarity of expression. **YOU ARE STRONGLY ADVISED TO PLAN YOUR ANSWERS**

There are **EIGHT** questions on this examination paper.

There are **TWO** sections on this paper.

Section A: Answer ALL questions.

Section B: Answer ONE question.

Each section is worth **50** marks

This examination paper carries a total of **100** marks in total.

This examination is **2.5** hours long.

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Medical Microbiology
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Answer **SIX** questions in total.

Answer **ALL** questions in Section A and **ONE** question from Section B.

Make use of labelled diagrams where appropriate.

Section A: Answer ALL of these questions

1. Explain how Koch's postulates can be used to determine whether a particular organism is the cause of a particular disease.

(10 marks)

2. With the aid of a clearly labelled diagram, compare the cell envelope of Gram-negative and Gram-positive bacteria.

(10 marks)

3. Outline one pathotype of *E. coli* that causes disease in humans.

(10 marks)

4. Analyse the lytic and lysogenic cycle of bacteriophages.

(10 marks)

5. Describe how penicillin targets bacteria and summarise mechanisms of resistance to penicillin by bacteria.

(10 marks)

[Total for Section A: 50 marks]

PLEASE TURN OVER

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Section B: Answer ONE of these questions

6. Discuss the pathogenesis of *Helicobacter pylori*.

[50 marks]

7. Giving specific examples, identify intrinsic and acquired antibiotic resistance mechanisms of bacteria.

[50 marks]

8. Distinguish between innate and acquired immunity.

[50 marks]

[Total for Section B: 50 marks]

END OF QUESTIONS

PAST EXAMINATION