

UNIVERSITY OF BOLTON**SCHOOL OF CLINICAL AND BIOMEDICAL
SCIENCES****BSc (Hons) MEDICAL BIOLOGY****SEMESTER TWO EXAMINATIONS 2021/22****MEDICAL MICROBIOLOGY****MODULE NO: BIO5010**

Date: Wednesday 18 May 2022

Time: 10.00 – 12.00

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 **NINE** 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 TWO hours long.

Answer **SIX** questions in total.

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

School of Clinical and Biomedical Sciences
BSc (Hons) Medical Biology
Semester 2 Examinations 2021/22
Medical Microbiology
Module No. BIO5010

Make use of labelled diagrams where appropriate.

Section A: Answer ALL of these questions

1. Discuss Koch's postulates.

(10 marks)

2. Describe, with the aid of a clearly labelled diagram, the key differences between Gram-positive and Gram-negative bacteria.

(10 marks)

3. Infection of the human host by *Escherichia coli* can be caused by a number of different pathotypes. Discuss one pathotype of *E. coli* causing disease in humans.

(10 marks)

4. Describe the virus life cycle.

(10 marks)

5. What is the mechanism of action of the antibiotic penicillin and how can bacteria become resistant to this antibiotic?

(10 marks)

[Total for Section A: 50 marks]

PLEASE TURN OVER

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Section B: Answer ONE of these questions

6. Explain in detail how *Helicobacter pylori* causes disease in humans.

[50 marks]

7. The emergence of antibiotic resistance poses a significant threat to global health. Giving specific examples, explain how bacteria use resistance mechanisms for antibiotic resistance.

[50 marks]

8. Examine the role of the *Plasmodium* parasite in the development of malaria.

[50 marks]

9. Outline the differences between innate and adaptive immunity.

[50 marks]

[Total for Section B: 50 marks]

END OF QUESTIONS