

**UNIVERSITY OF BOLTON**

**SCHOOL OF CLINICAL AND BIOMEDICAL  
SCIENCES**

**BSC (HONS) MEDICAL BIOLOGY**

**SEMESTER ONE EXAMINATION 2023/24**

**MEDICAL BIOCHEMISTRY**

**MODULE NO: BIO5009**

Date: Wednesday 10<sup>th</sup> January 2024

Time: 14:00 - 16:30

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**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 **TWO** sections in this paper.

Answer **THREE** questions in total, including **AT LEAST ONE** from **EACH** section.

Each question is worth **50** marks.

The examination has a total of **150** marks.

This examination is **TWO AND A HALF** hours long.

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School of Clinical and Biomedical Sciences  
BSc (Hons) Medical Biology  
Semester One Examination 2023/24  
Medical Biochemistry  
Module No. BIO5009

**Answer THREE questions in total, including AT LEAST ONE from EACH section.**

**Section A: Homeostasis and disease.**

**Answer AT LEAST ONE question from this section; 50 marks per question.**

1. Describe in detail the different stages of haemostasis, and explain how various diseases can result from abnormalities in this process.
2. Describe in detail the role proteins play in the control of cell division and explain how cancer can develop if this control goes wrong.
3. Using named examples, explain why the control of enzyme function is so important to cells, and discuss the consequences of this control going wrong.

**Section B: Laboratory techniques.**

**Answer AT LEAST ONE question from this section; 50 marks per question.**

4. Discuss why recombinant proteins are an important tool in molecular biology. As part of your answer, you should explain how pure recombinant proteins can be synthesised in a medical biochemistry research laboratory.
5. Outline the laboratory techniques available in a clinical biochemistry laboratory to analyse patient samples from a variety of body fluids and describe how they work. In your answer, you should give examples of how these test results may be abnormal in various **non-blood related** diseases.
6. Account for the different types of tests and procedures that take place in a typical NHS haematology laboratory. In your answer, you should explain how these techniques are able to diagnose a range of **blood related** diseases.

**[WHOLE PAPER TOTAL: 150 marks]**

**END OF QUESTIONS**