

**UNIVERSITY OF BOLTON**  
**SCHOOL OF CLINICAL AND BIOMEDICAL**  
**SCIENCES**

**BSC (HONS) MEDICAL BIOLOGY**

**SEMESTER TWO EXAMINATION 2021/22**

**MEDICAL BIOCHEMISTRY**

**MODULE NO: BIO5009**

Date: Monday 16 May 2022

Time: 10.00 – 1.00

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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 **THREE** hours long.

School of Clinical and Biomedical Sciences  
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Medical Biochemistry  
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**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 how a human cell controls the process of proliferation, and explain how cancer can develop if this control goes wrong.
2. Explain the mechanisms by which a human cell is able to control enzyme function, and give examples of how this control can go wrong in various diseases.
3. Give an account of haemostasis, and explain how various diseases can result from abnormalities in this process.

**Section B: Laboratory techniques.**

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

4. Account for the different types of tests and procedures that take place in a typical NHS clinical biochemistry laboratory as an indicator of overall health in the body. In your answer, you should give examples of how these test results may be abnormal in various **non-blood related** diseases.
5. Summarise the steps by which recombinant proteins can be synthesised in a medical biochemistry research laboratory, and outline some of the potential uses of a recombinant protein.
6. Outline the laboratory techniques available to study haematology. 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**