

UNIVERSITY OF BOLTON
SCHOOL OF CLINICAL AND BIOMEDICAL
SCIENCES
BSC (HONS) MEDICAL BIOLOGY
SEMESTER ONE EXAMINATION 2024/25
BIOLOGICAL BASIS OF DISEASE
MODULE NO: BIO6011

Date: Friday 10 January 2025

Time: 10:00 – 13:00

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 FIVE questions.

Answer ANY THREE questions.

All questions carry equal marks.

This examination paper carries a total of 150 marks.

This examination is THREE hours long.

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Answer **ANY THREE** questions: each question is worth 50 marks. You should spend approximately one hour on each question.

1. 'Tumorigenesis is a multi-stage process'. Evaluate this statement and include a discussion of the role of oncogenes and tumour suppressor proteins in cancer biology. Compare, using named examples, the mechanism of action of traditional chemotherapeutic drugs and newer targeted non-chemotherapy cancer treatments. Include in your answer a discussion of the importance and mechanism of drug resistance.

[50 marks]

2. Discuss the symptoms and causes of acute coronary syndrome (ACS). Include in your answer how acute coronary syndrome leads to other cardiovascular pathologies. Critically evaluate how specific drug therapies are used to manage this condition and discuss the mechanism of action of specific drugs.

[50 marks]

3. Compare and contrast Inflammatory Bowel Disease (IBD) and Irritable Bowel Syndrome (IBS). Critically evaluate the current pharmacological approach to managing the conditions. You should justify the use of each drug mentioned by describing their mechanism of action.

[50 marks]

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4. Discuss the mechanisms of bacterial infection and the use of antibiotics in their treatment. Your answer should include the mechanism of action of specific drugs and a discussion of antibiotic resistance.

[50 marks]

5. Discuss the importance of immunological tolerance and how it is linked to autoimmune diseases. Include in your answer the role of immune cells in autoimmunity and how treatments interact with immunological mediators.

[50 marks]

END OF QUESTIONS