

**UNIVERSITY OF BOLTON**  
**SCHOOL OF SPORTS AND BIOLOGICAL SCIENCES**  
**BSC (HONS) MEDICAL BIOLOGY**  
**SEMESTER ONE EXAMINATION 2018/2019**  
**MOLECULAR GENETICS**  
**MODULE NO: BIO5008**

Date: Monday 14 January 2019

Time: 2.00 pm – 5.00 pm

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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 **SIX** questions on this paper.

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

Answer **THREE** questions, at least **ONE** from each section, and **ONE** other.

All questions carry 50 marks.

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**SECTION TWO**

4. Explain how bacteria can be made to produce human insulin using genetic engineering approaches.

**[50 marks]**

5. Summarize the various clinical implications of the CRISPR technique. Highlight two specific conditions that CRISPR could prevent in the future.

**[50 marks]**

6. Explain how restriction enzymes became the workhorses of molecular genetics.

**[50 marks]**

**END OF QUESTIONS**