

**Module code: BLGY3152**

**Module Title: Advanced Topics in Human Genetics**

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**School of Biological Sciences**

**August 2022**

**Calculator instructions:**

- You are allowed to use a calculator or a computer calculator in this assessment.

**Dictionary instructions:**

- You are allowed to use your own dictionary in this assessment and/or the Spell Checker facility on your computer.

**Assessment Information:**

- There are 2 pages to this online assessment.
- You will have *24 hours* to complete the assessment.
- You are recommended to take a maximum of *5 hours* within the time available to complete the assessment.
- There are 2 sections to this assessment: Section A & Section B
  - Section A (essay) is worth (50%): Answer one question from this section
  - Section B (essay) is worth (50%): Answer one question from this section
- You should keep to the word limit for each answer. These limits are 1500 words for each essay style answer.
- Read carefully the official Faculty of Biological Sciences (FBS) *guidelines on OTLA essays* **before** you begin to answer a question. It is **your** responsibility to ensure you follow the guidelines when preparing your answer. The guidelines are published in a separate document called: '*Level 3 Guidance on OTLA essays*'. These are available for download from the Assessment area of your Minerva module.
- The deadline for submission of your assessment is **9am 23/08/22**.
- Please submit your assessment to the 'Online Time-limited Assessment' area in the module's Minerva page.
- Please name your file as follows: (Student ID number)\_Module code\_Question number – e.g. (200000000)\_BIOC2306\_Section B.
- Please include an FBS Assessed Coursework Cover Sheet (downloadable from the 'Assessment' folder of your Minerva module) with your submission.
- If there is anything that needs clarification or you have any problems, please email [FBSEducation@leeds.ac.uk](mailto:FBSEducation@leeds.ac.uk) and we will respond to you as quickly as possible within normal working hours UK time (9:00-17:00 hours, Monday-Friday).
- You must not discuss or share the content of, or answers to, this assessment with any fellow students, any staff or other contacts outside the school or the University's professional services. School contacts available to you are detailed in the bullet point above.

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### Academic Integrity

Whilst you are permitted to refer to written and online materials under the conditions of the Online Time Limited Assessments, you must ensure that the work submitted is entirely your own. You must not discuss the topics covered by your assessment during the official exam period with fellow students, must not seek advice or contributions from any third-party including friends or family members and must not post assessment questions on the internet. Failure to adhere to these requirements would be in breach of the [University's rules](#) that govern the academic integrity of exams and assessments. When submitting your work online, you will be confirming that you have read and understood the University's Declaration of Academic Integrity, a copy of which is available through the Assessment section of all module areas in Minerva. Please read the [Declaration](#) before starting your Online Assessments.

### Section A (50%): Essay

#### Answer ONE question from this section

1. Analyse and evaluate how genome-wide DNA sequencing and integrated genomic analysis has advanced the understanding and treatment of human cancer.
2. Analyse and evaluate the involvement of DNA methylation in human genetic disease.

### Section B (50%): Essay

#### Answer ONE question from this section

1. How has the analysis of genetic mutants been used in the study of DNA repair pathways? Use specific examples in your answer.
2. Explain why specific mammalian cell types naturally induce DNA double strand breaks in their genomes. How is the recombination pathway that is used in the repair of these induced breaks important to the biological function of the break?