

**Year 11 ATAR Human Biology**

**Task 5: Cell Division**

**Extended Response**

Time Allocated: 50 minutes

Weighting 7.5%

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| **Question 1** | **Question 2** | **Question 3** | **Total** |
| /11 | /8 | /8 | /27 |

Comments:

**Answer the following 3 questions below ensuring to include full detail and sentence structure in your responses. You can choose how to structure your answer and may include labelled diagrams or tables if appropriate.**

1. Mitosis and meiosis are two important cellular processes which take place in the human body.
2. **Compare** and **contrast** the processes of mitosis and meiosis, highlighting their **similarities** and **differences**, and discuss their significance in the life cycles of humans. [7 marks]

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1. During mitosis and meiosis, errors may sometimes occur which may cause certain diseases. Identify an example for each process, and explain how they are caused:

[4 marks]

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1. Stem cells are promoted as “the way of the future” for the treatment of many illnesses Define the term stem cell and explain three the differences between adult and embryonic stem cells.

[8 marks]

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1. Discuss the ethical concerns surrounding the use of embryonic stem cells in scientific research and medical applications. Identify and explain a potential alternative to the use of embryonic stem cells.

[8 marks]

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**END OF ASSESSMENT**