**TYPE:** Extended Response

**TASK 11: Stem Cells and Tissue Engineering (50 marks)**

The questions are worth 20% of the marks and the essay based on the same information is worth 80%. Task is research based questions followed by an in-class essay. Students are to use internet resources to complete the questions. The essay will be written in class under exam conditions (ie without notes)

**Time for the tasks (1 hour)**

* Research and answering questions – 1 session
* Validation essay in class – 5 minutes reading time and 55 minutes working time

**What you need to do:**

* Follow the instructions provided very carefully to complete the test.
* Draw any results in pencil and answer all questions given.
* It is your responsibility to organise your time effectively.
* There is to be no discussion between you or any of your class mates.
* No sharing of any equipment or answers at all.

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| **Requirements for assessment** | **Due dates:** |
| * Conduct research and answer questions | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| * Complete all essay questions | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**DO NOT TURN THIS PAGE OVER UNTIL YOU ARE TOLD TO**

**STUDENT NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**TEACHER: YEAR: 11**

**Stem Cell and Tissue Engineering**

In class essay component (35 marks)

Complete the in-class Validation on lined paper

1. Discuss the advantages and disadvantages of each of ;

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| --- | --- | --- |
| **CONTEXT** | **ADVANTAGES** | **DISADVANTAGES** |
| **Embryonic stem cells from surplus IVF embryos** |  |  |
| **Embryonic stem cells created by therapeutic cloning** |  |  |
| **Induced pluripotent stem cells** |  |  |
| **Adult stem cells as treatments for specific human diseases** |  |  |

1. Discuss the ethical issues (if any) raised by using EACH of those four classes of stem cells to treat human diseases.

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| Section | Possible Mark | Mark achieved |
| Research & Questions | 10 |  |
| In class essay | 40 |  |
| TOTAL | 50 |  |