Practice Question Set For GCSE
Subject : Biology
Paper-1 Topic: B1 Cell Biology

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Name of the Student:_____
Max. Marks : 22 Marks **Time : 22 Minutes**

Q1.

This question is about stem cells.

(a) Give **one** place in a plant where stem cells are found.

_____

_____

(1)

(b) What is **one** economic use of plant stem cells?

Tick **one** box.

To create genetically modified crops	☐
To create new species of plants	☐
To increase variation in plants	☐
To produce large numbers of identical plants	☐

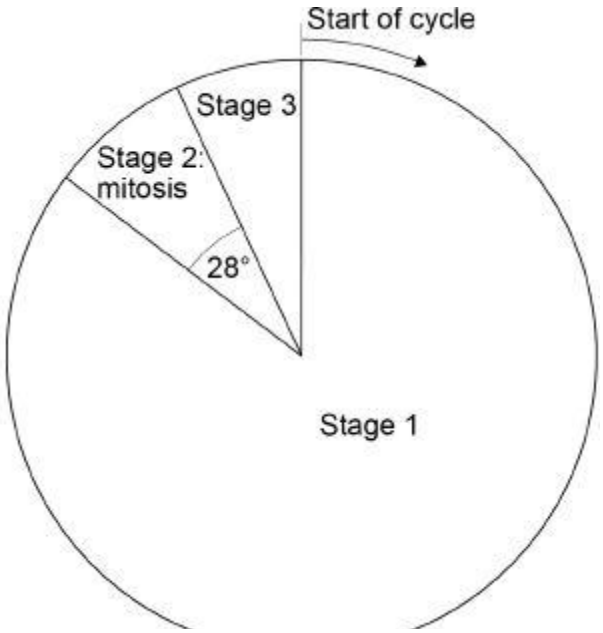
(1)

Embryonic stem cells divide by mitosis.

Figure 1 represents a cell cycle for a human embryonic stem cell.

Figure 1

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(c) The mass of DNA in the cell at the start of the cycle is 6 picograms.

A picogram is 10^{-3} nanograms.

Convert 6 picograms to grams.

Give your answer in standard form.

_____

_____

Mass = _____ g

(1)

(d) The time taken for this complete cell cycle is 15 hours.

Calculate how many hours the cell spent in mitosis.

Give your answer to 3 significant figures.

_____

_____

_____

_____

Time spent in mitosis = _____ hours

(2)

(e) Describe what happens in each of the three stages of the cell cycle.

_____

_____

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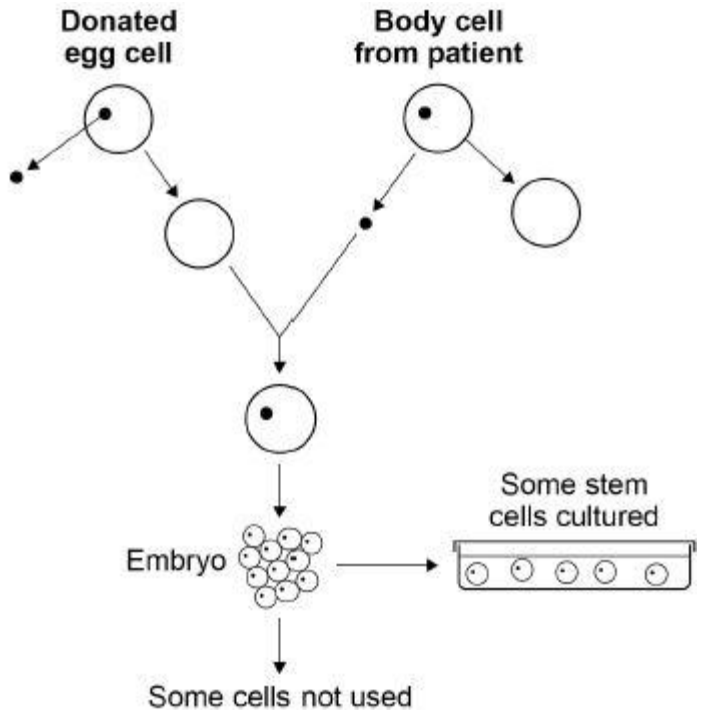
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_____

(5)

(f) **Figure 2** shows how embryonic stem cells are produced in therapeutic cloning for use in patients.

Figure 2



Give **two** advantages and **two** disadvantages of therapeutic cloning in medical treatments.

Use **Figure 2** to help you.

Advantage 1 _____

_____

Advantage 2 _____

_____

Disadvantage 1 _____

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Disadvantage 2 _____

_____

_____

(4)

(Total 14 marks)

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Q2.

Eukaryotic cells respire continuously to transfer energy.

(a) Give **two** uses of energy transferred by respiration in eukaryotes.

1. _____

2. _____

(2)

(b) Name the cell structure in a eukaryotic cell where aerobic respiration occurs.

_____

(1)

(c) Muscle cells and plant cells can respire anaerobically.

Compare the processes of anaerobic respiration in muscle and plant cells.

_____

_____

_____

_____

_____

_____

_____

_____

(4)

(d) Anaerobic respiration in muscle cells creates an oxygen debt.

What does oxygen debt mean?

_____

_____

(1)

(Total 8 marks)

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