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

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Name of the Student:_____
Max. Marks : 18 Marks **Time 18 Minutes**

Q1.

The table shows the number of chromosomes found in each body cell of some different organisms.

Animals		**Plants**	
Species	**Number of chromosomes in each body cell**	**Species**	**Number of chromosomes in each body cell**
Fruit fly	8	Tomato	24

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Goat	60	Potato	44
Human	46	Rice	24

(a) Nearly every organism on earth has an even number of chromosomes in its body cells.

Suggest why.

_____

_____

(1)

(b) Chromosomes contain DNA molecules.

Describe the function of DNA.

_____

_____

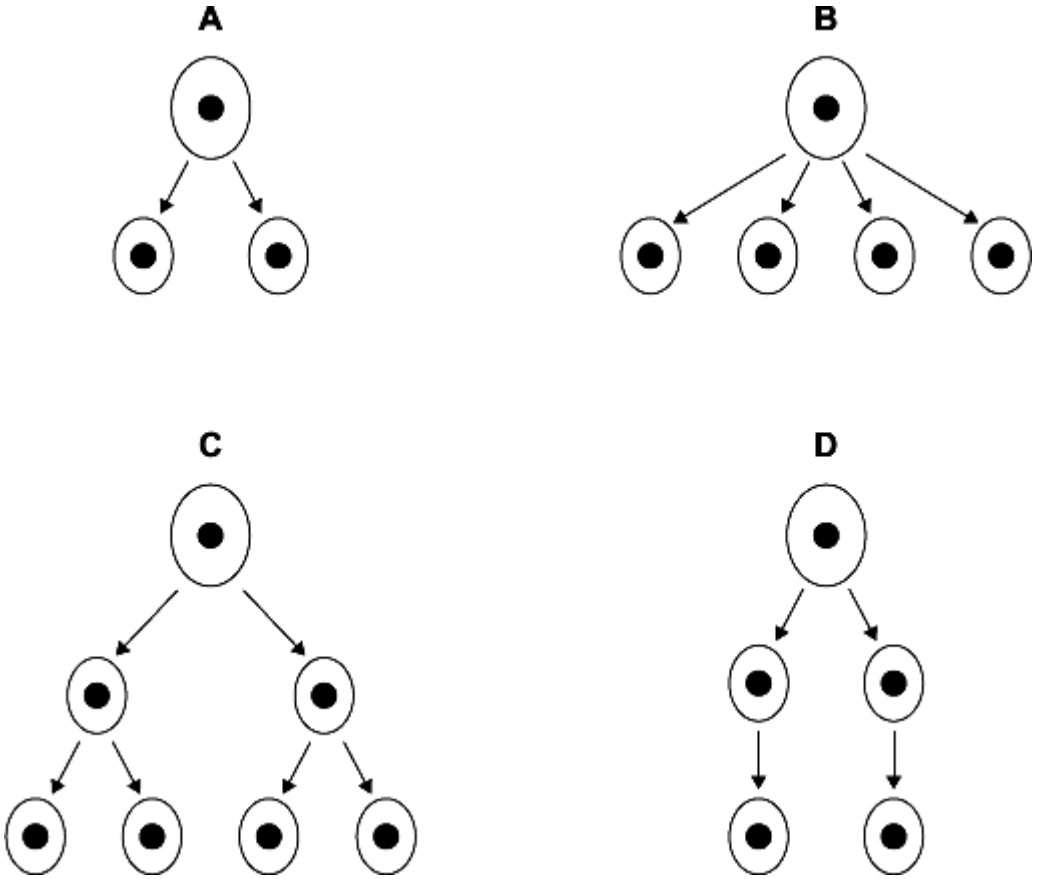
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(2)

(c) Gametes are made in the testes by meiosis.

(i) Look at the diagrams.



Which diagram, **A**, **B**, **C** or **D**, represents how cell division by meiosis produces gametes in the testes? ☐

(1)

(ii) How many chromosomes will each goat gamete contain?

_____

(1)

(d) Body cells divide by mitosis.

(i) Why is the ability of body cells to divide important?

_____

_____

(1)

(ii) When a body cell of a potato plant divides, how many chromosomes will each of the new cells contain?

_____

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(1)
(Total 7 marks)

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Q2.

(a) Some scientists investigated the rates of absorption of different sugars by the small intestine.

In one experiment they used a piece of normal intestine.
In a second experiment they used a piece of intestine poisoned by cyanide. Cyanide is poisonous because it prevents respiration.

The results are shown in the table.

	Relative rates of absorption	
Sugar	**Normal intestine**	**Intestine poisoned by cyanide**
Glucose	1.00	0.33
Galactose	1.10	0.53
Xylose	0.30	0.31
Arabinose	0.29	0.29

(i) Name **two** sugars from the table which can be absorbed by active transport.

1. _____

2. _____

(1)

(ii) Use evidence from the table to explain why you chose these sugars.

_____

_____

_____

_____

_____

_____

_____

(3)

(b) All of the sugars named in the table can be absorbed by diffusion.

Explain how information from the table provides evidence for this.

_____

_____

_____

_____

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(2)
(Total 6 marks)

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Q3.

Read the information about stem cells.

> Stem cells are used to treat some human diseases.
>
> Stem cells can be collected from early embryos. These stem cells have not begun to differentiate, so they could be used to produce any kind of cell, tissue or organ. The use of embryonic stem cells to treat human diseases is new and, for some diseases, trials on patients are happening now.
>
> Stem cells can also be collected from adult bone marrow. The operation is simple but may be painful. Stem cells in bone marrow mainly differentiate to form blood cells. These stem cells have been used successfully for many years to treat some kinds of blood disease. Recently there have been trials of other types of stem cell from bone marrow. These stem cells are used to treat diseases such as heart disease.

Evaluate the use of stem cells from embryos or from adult bone marrow for treating human diseases.

You should give a conclusion to your evaluation.

(Total 5 marks)

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