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

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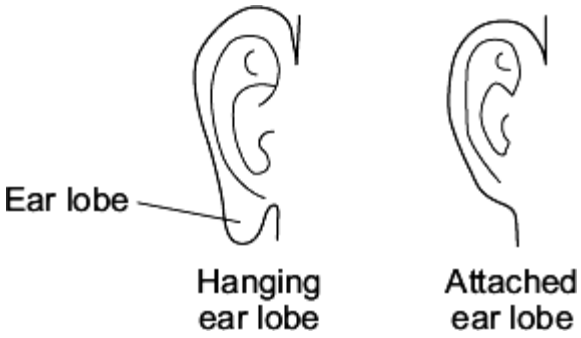
Name of the Student:_____
Max. Marks : 19 Marks **Time : 19 Minutes**

Q1.

People have different shaped ear lobes, either 'hanging' or 'attached'.

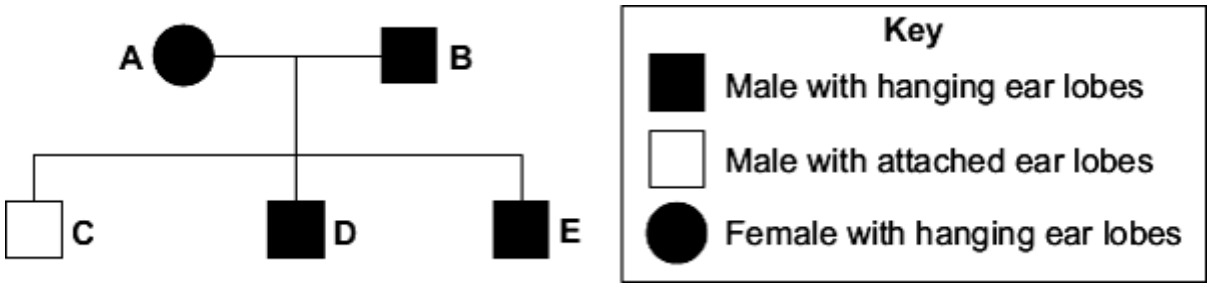
The diagrams show the two shapes of ear lobe.



A gene controls the shape of a person's ear lobes.

The diagram shows a family tree.

Parents **A** and **B** both have hanging ear lobes.



(a) The key does **not** show the symbol for a female with attached ear lobes.

Draw the symbol for the key to show a female with attached ear lobes.

Use information in the family tree and the key.

Symbol = _____

(1)

(b) Look at the family tree.

What does the information in the family tree tell you about the allele for hanging ear lobes?

Draw a ring around the correct word to complete the sentence.

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The allele for hanging ear lobes is

dominant.
weak.
recessive.

(1)

(c) (i) Parents **A** and **B** have three children, **C**, **D** and **E**.
All three children are boys.

What are the chances that the next child of parents **A** and **B** will be a girl?

Draw a ring around **one** answer.

no chance (0 %) **a half (50 %)** **certain (100 %)**

(1)

(ii) Which statement explains your answer to part (c)(i)?

Tick (✓) **one** box.

Some of **B**'s sperm cells have an X chromosome. ☐

Some of **A**'s egg cells have a Y chromosome ☐

All of **B**'s sperm cells have an X chromosome. ☐

(1)
(Total 4 marks)

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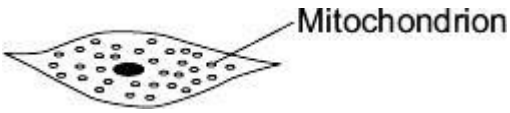
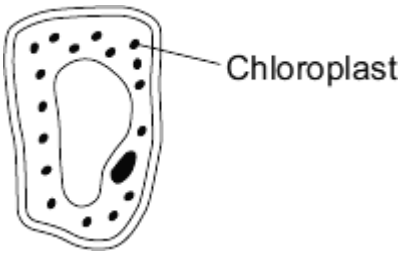
Q2.

The diagrams show four cells, **A**, **B**, **C** and **D**.

A

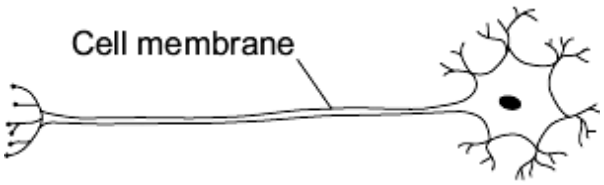


B



C

D



Use letters **A**, **B**, **C** or **D** to answer these questions.

(a) Which cell can photosynthesise?

(1)

(b) Which cell is adapted for receiving and sending information?

(1)

(c) Which cell is adapted to respire quickly?

(1)

(Total 3 marks)

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Q3.

Stem cells can be collected from human embryos and from adult bone marrow.
Stem cells can develop into different types of cell.

The table gives information about using these two types of stem cell to treat patients.

Stem cells from human embryos	Stem cells from adult bone marrow
It costs £5000 to collect a few cells.	It costs £1000 to collect many cells.
There are ethical issues in using embryo stem cells.	Adults give permission for their own bone marrow to be collected.
The stem cells can develop into most other types of cell.	The stem cells can develop into only a few types of cell.
Each stem cell divides every 30 minutes.	Each stem cell divides every four hours.
There is a low chance of a patient's immune system rejecting the cells.	There is a high chance of a patient's immune system rejecting the cells.
More research is needed into the use of these stem cells.	Use of these stem cells is considered to be a safe procedure.

Scientists are planning a new way of treating a disease, using stem cells.

Use **only** the information above to answer these questions.

(a) Give **three** advantages of using stem cells from embryos instead of from adult bone marrow.

1. _____

2. _____

3. _____

(3)

(b) Give **three** advantages of using stem cells from adult bone marrow instead of from embryos.

1. _____

2. _____

3. _____

(3)

(Total 6 marks)

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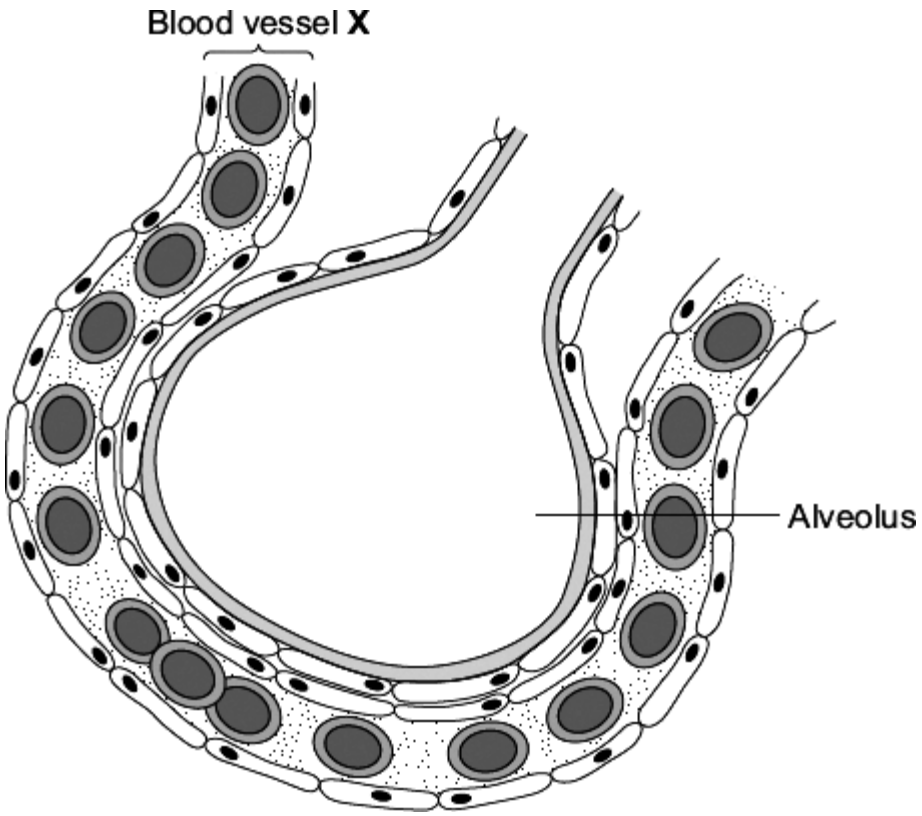
Q4.

The diagram shows an alveolus and a blood vessel in the lung.



(a) Draw a ring around the correct answer to complete each sentence.

(i) Blood vessel **X** is

an artery.
a capillary.
a vein.

(1)

(ii) Gases pass across the wall of the alveolus by

diffusion.
evaporation.
fermentation.

(1)

(iii) The table compares the concentrations of some gases in inhaled air and exhaled air.

Complete the table.
Write 'lower' **or** 'higher' in each box.
One line has been completed for you as an example.

Gas	**Concentration**	
	Inhaled air	**Exhaled air**
Water vapour	lower	higher

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Carbon dioxide		
Oxygen		

(2)

(b) Draw a ring around the correct answer to complete each sentence.

(i) Oxygen is carried in the blood mainly in

blood plasma.

red blood cells.

white blood cells.

(1)

(ii) In the blood, the oxygen combines with

carbon dioxide.

haemoglobin.

urea.

(1)

(Total 6 marks)

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