**Q1.**

A student prepared some animal cells to view using a microscope.

**Figure 1** shows the student preparing the cells.

**Figure 1**

(a) Name **two** pieces of laboratory equipment the student could have used to **prepare** cells to view using a microscope.

1 _____

2 _____

**(2)**

**Figure 2** shows the student's light microscope.

**Figure 2**


(b) Name part **A**.

_____

**(1)**

(c) What is the function of part **B**?

_____

_____

**(1)**

(d) The student tried to look at the cells using the microscope.

Suggest **one** reason why the student could **not** see any cells when looking through part **A**.

_____

_____

**(1)**

(e) Red blood cells are specialised animal cells.

Compare the structure of a red blood cell with the structure of a plant cell.

_____

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**(6)**

(f) When placed into a beaker of water:

- a red blood cell bursts
- a plant cell does **not** burst.

Explain why the red blood cell bursts but the plant cell does **not** burst.

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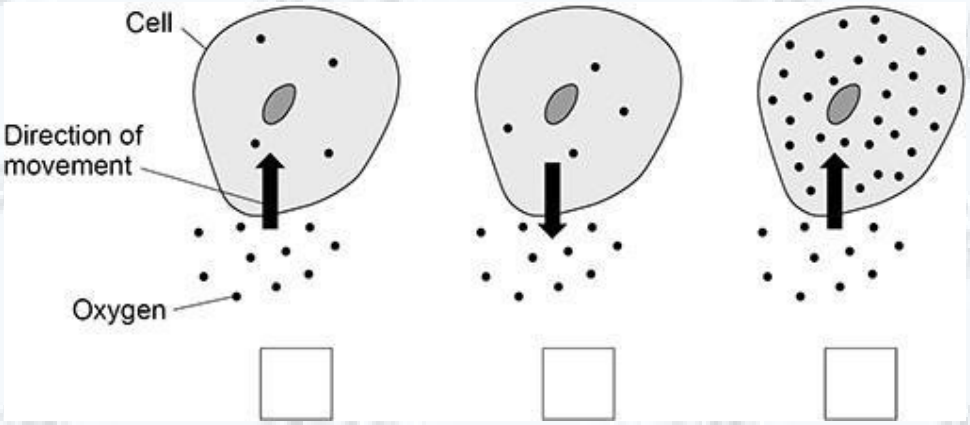
**(2)**

**(Total 13 marks)**

**Q2.**

This question is about cells.

(a) Which diagram shows oxygen moving by diffusion? Tick (✓) **one** box.




**(1)**

(b) Complete the sentences.

Choose answers from the box.

| | | |
|---|---|---|
| **carbon dioxide** | **chlorophyll** | **energy** |
| **light** | **mineral ions** | **water** |

Plant cells absorb substances from the soil.

Plant cells use osmosis to absorb _____.

Plant cells use active transport to absorb _____.

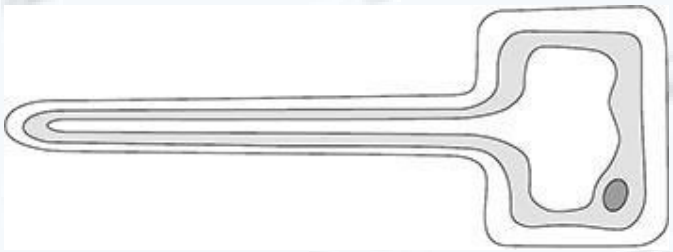
Active transport moves substances against the concentration gradient and needs

_____.

**(3)**

**Figure 1** shows a specialised cell that absorbs substances from the soil.

**Figure 1**



(c) Name the type of specialised cell in **Figure 1**.

_____

**(1)**

(d) Describe how the cell in **Figure 1** is adapted to increase the absorption of substances from the soil.

_____

_____

**(1)**

A sperm cell is another specialised cell.

**Figure 2** shows a sperm cell.

**Figure 2**

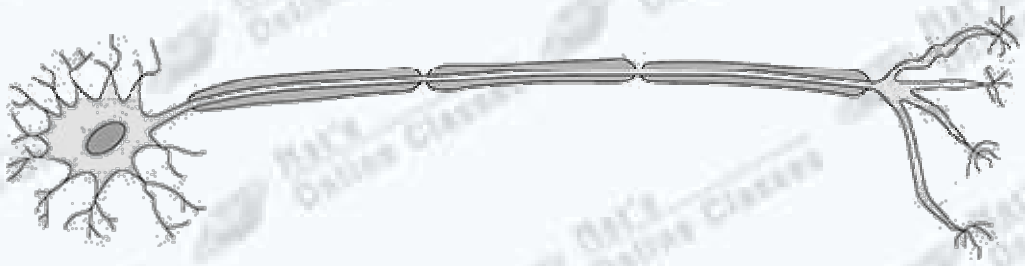
(e) Draw **one** line from each feature to how the feature helps the sperm cell carry out its function.

| Feature of sperm cell | How the feature helps |
|---|---|
| | To break the outer layer of the egg |
| Contains a nucleus | |
| | To help the cell to swim to the egg |
| | To provide the chromosomes for fertilisation |
| Has a long tail | |
| | To release energy |

**(2)**

**Figure 3** shows another specialised cell.

**Figure 3**



(f) Name the type of cell in **Figure 3**.

Describe **one** feature of the cell that helps it to carry out its function.

Name of the cell _____

Feature of the cell _____

_____

**(2)**

**(Total 10 marks)**