

Transport in plants – 2023 November IGCSE 0610

1. [Nov/2023 /Paper_ 0610/11/No.16](#)

What is a description of transpiration?

- A exchange of gases between the leaf and the atmosphere
- B loss of water vapour from the leaves of a plant
- C movement of water from the roots to the leaves
- D movement of water through the cells of the leaf

2. [Nov/2023 /Paper_ 0610/13/No.16](#)

By which process is water vapour lost from a leaf?

- A active transport
- B diffusion
- C osmosis
- D photosynthesis

3. [Nov/2023 /Paper_ 0610/13/No.17](#)

The pathway taken by water through a plant is shown.

root hair cells → root cortex cells → Z → mesophyll cells

Which part of the pathway is Z?

- A palisade cells
- B phloem
- C stomata
- D xylem

4. [Nov/2023 /Paper_ 0610/21/No.16](#)

What is a description of transpiration?

- A exchange of gases between the leaf and the atmosphere
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5. Nov/2023 /Paper_ 0610/21/No.17
Parts of a plant are listed.

- 1 mesophyll cells
- 2 root cortex cells
- 3 root hair cells
- 4 xylem vessels

What is the pathway taken by water in the plant?

- A 1 → 4 → 2 → 3
- B 1 → 2 → 3 → 4
- C 3 → 1 → 4 → 2
- D 3 → 2 → 4 → 1

6. Nov/2023 /Paper_ 0610/22/No.16

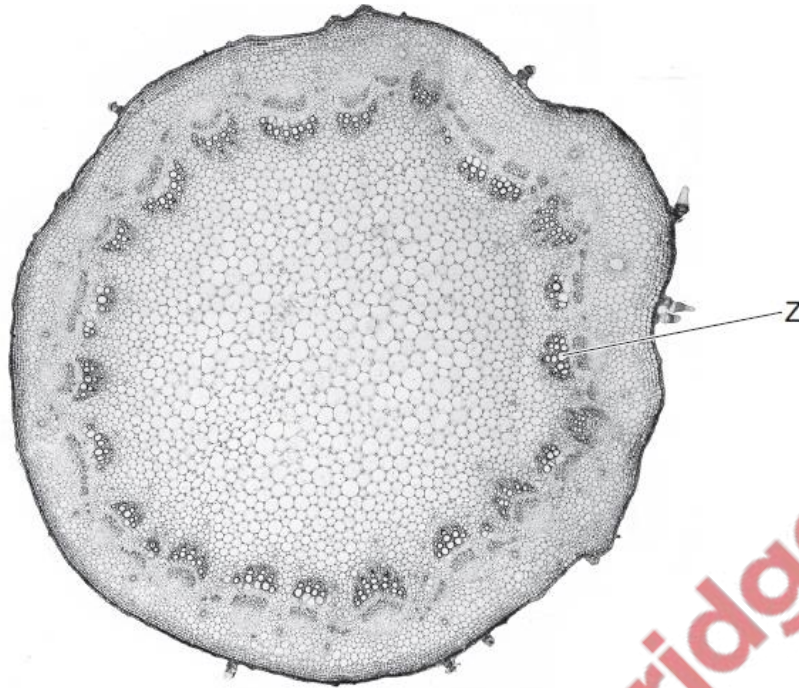
From which part of a leaf does **most** water evaporate during transpiration?

- A the cuticle
- B the guard cells
- C the spongy mesophyll cells
- D the xylem vessels



7. Nov/2023 /Paper_0610/22/No.17

The photograph shows a cross-section through a sunflower stem.



What is the name and function of the tissue labelled Z?

	name of tissue	function of tissue
A	phloem	transport of mineral ions
B	phloem	transport of sucrose
C	xylem	transport of mineral ions
D	xylem	transport of sucrose

8. Nov/2023 /Paper_0610/23/No.16

By which process is water vapour lost from a leaf?

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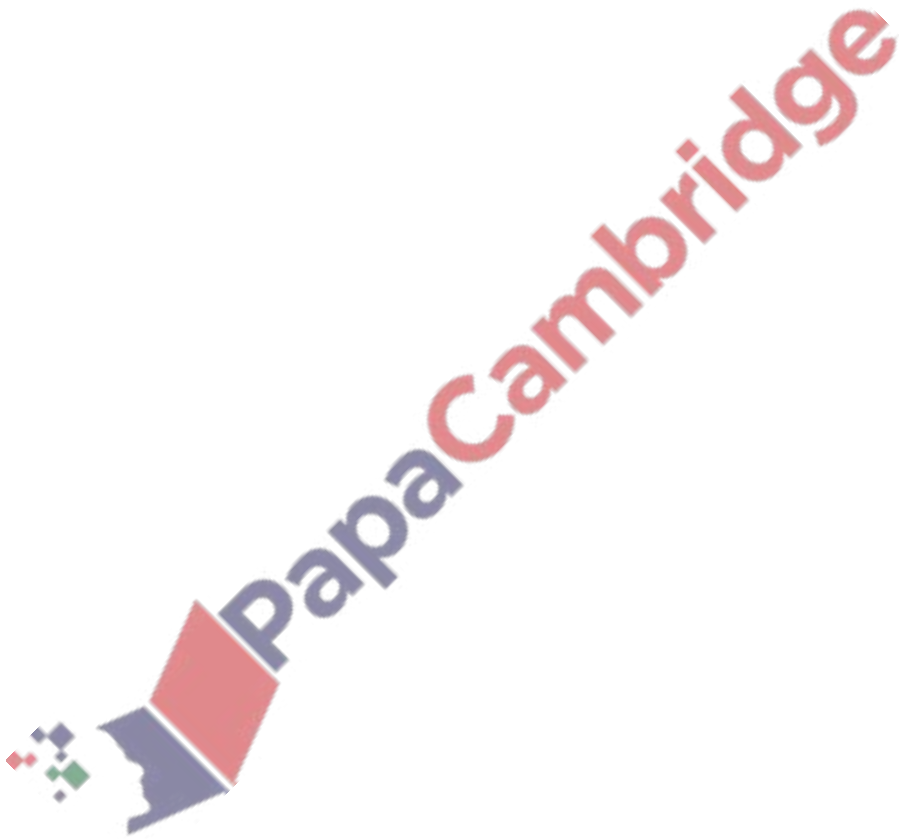
9. Nov/2023 /Paper_0610/23/No.17

The pathway taken by water through a plant is shown.

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- C stomata
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(a) Complete the sentences about transpiration using words from the list.

Each word may be used **once** or not at all.

decomposition

evaporation

mesophyll

phloem

root hair cells

stomata

Transpiration is the loss of water vapour from leaves.

Water moves from the surface of cells into the air spaces by

Then the water vapour diffuses out of the leaf through the

[3]

(b) A student investigated transpiration.

Fig. 3.1 is a diagram of the apparatus used in the investigation.

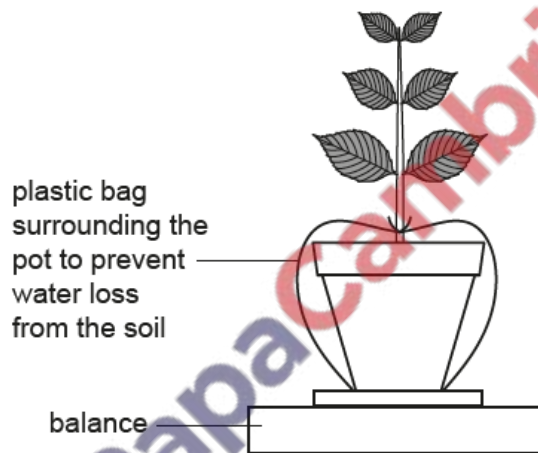


Fig. 3.1

- The student watered the plant before the investigation started.
- She measured the mass of water lost every five minutes.
- The mass of water lost represents the rate of transpiration.
- She took measurements in still air and with a fan moving air past the plant.
- She plotted her results on a graph as lines labelled **A** and **B**.

Fig. 3.2 shows the results.

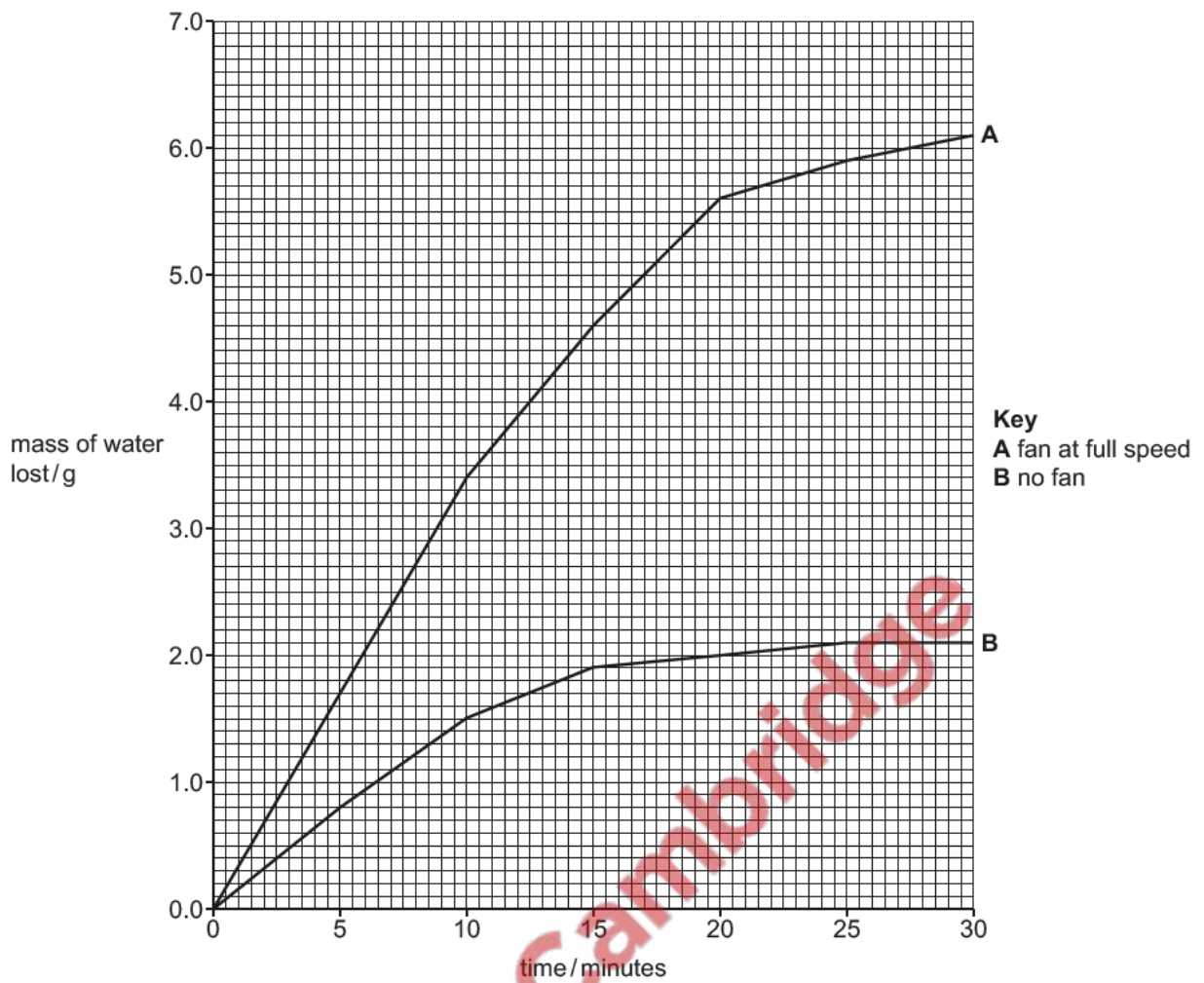


Fig. 3.2

(i) Calculate the difference in the mass of water lost between the results for **A** and the results for **B** at 30 minutes.

.....g [1]

(ii) Calculate the percentage increase in water loss shown for **A** between 10 minutes and 20 minutes.

Give your answer to the nearest whole number.

Space for working.

.....%
[3]

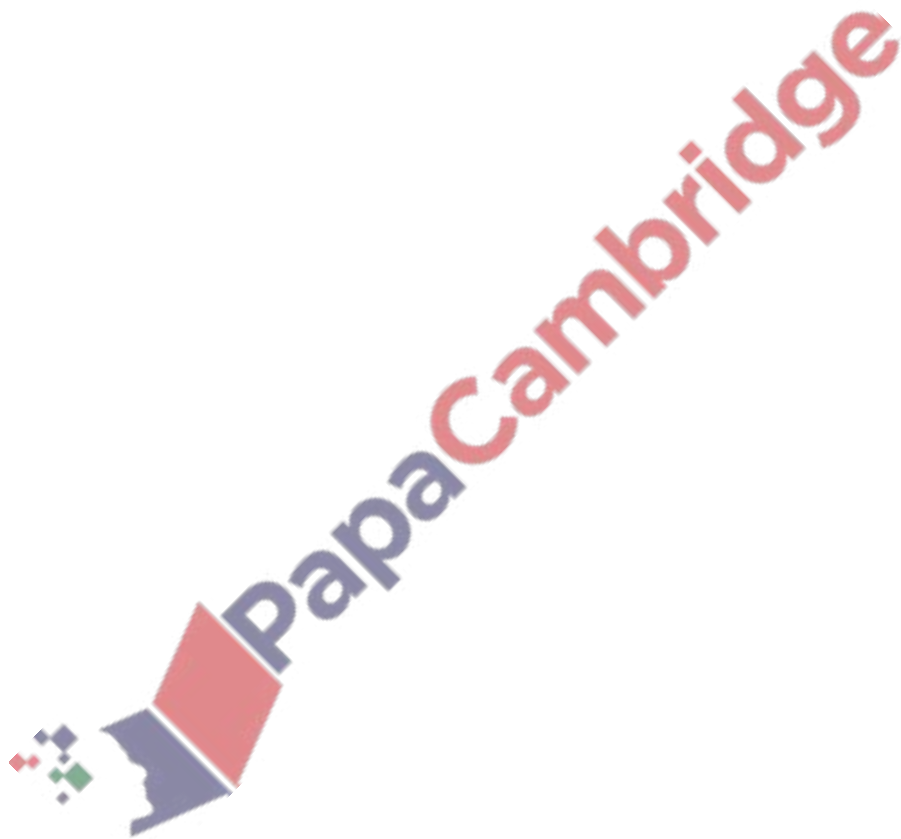
(iii) The student repeated the investigation using the fan at **half-speed**.

Draw a line on **Fig. 3.2** to show the result you would expect when the fan is at half-speed. [2]

(c) State **one** factor, other than wind speed, that affects the rate of transpiration.

..... [1]

[Total: 10]



(a) Fig. 6.1 is a diagram showing the pathway of water into a plant. The arrows show the direction of water movement.

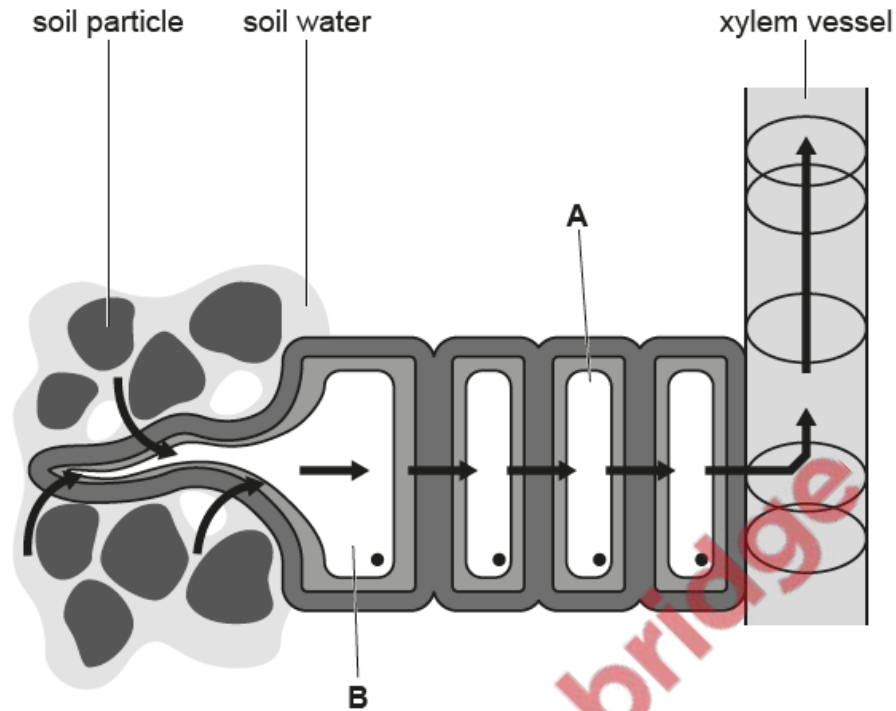


Fig. 6.1

(i) State the name of the cell labelled **A** in Fig. 6.1.
..... [1]

(ii) State the name of cell **B** and describe how it is adapted for absorption of water.
name

adaptation

..... [2]

(iii) State the name of the process by which cell **B** absorbs water.
..... [1]

(b) State **two** uses of water in plants.

1

2

[2]

(c) State **two** environmental factors that will affect the rate of water loss from a plant.

1

2

[2]

[Total: 8]

