

6. Plant nutrition

6.2 Leaf structure

Paper 3 and 4

Question Paper

Paper 3

Questions are applicable for both core and extended candidates

2 Fig. 4.1 shows a photomicrograph of a cross-section of part of a leaf.

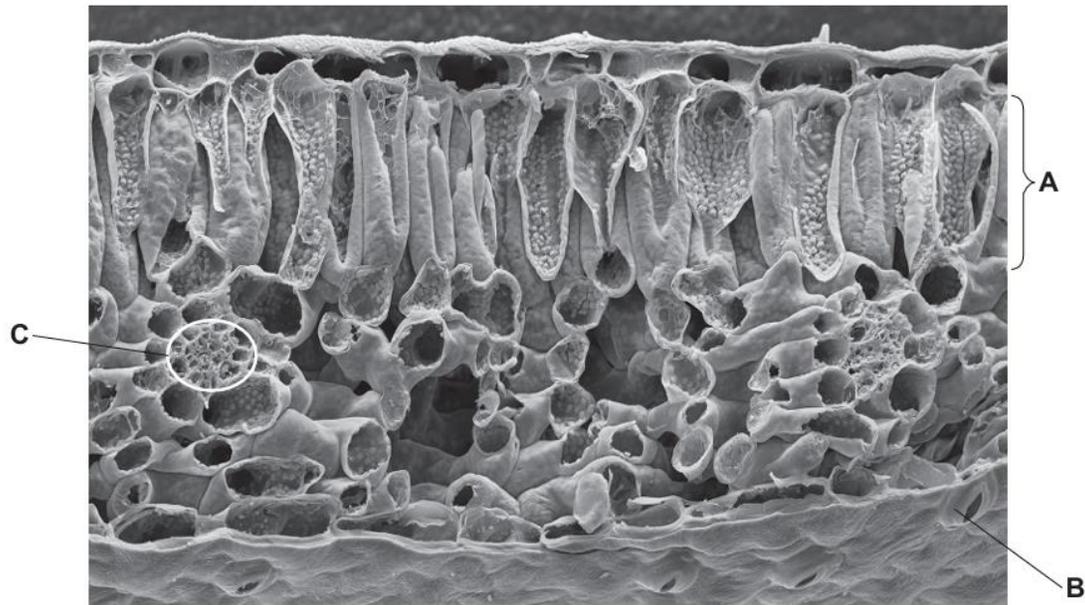


Fig. 4.1

(a) (i) Identify tissue **A** on Fig. 4.1 and state the name and function of this tissue.

name

function

[2]

(ii) Structure **C** in Fig. 4.1 is part of the transport system in the leaf.

State the names of **two** tissues that structure **C** contains.

1

2

[2]

(iii) Identify and state the name of cell **B** in Fig. 4.1.

..... [1]

- 3 (a) Fig. 7.1 is a photomicrograph of a cross-section of part of a leaf.

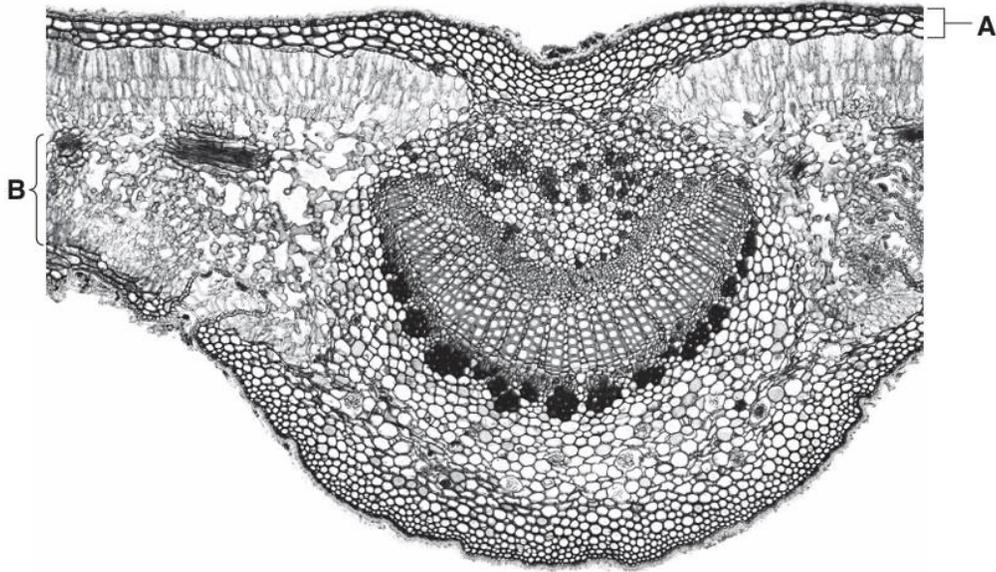


Fig. 7.1

- (i) Identify the parts of the leaf labelled **A** and **B** in Fig. 7.1.

A

B

[2]

- (ii) Draw a circle around **one** vascular bundle on Fig. 7.1.

[1]

- (iii) Draw an arrow to show where an air space is on Fig. 7.1.

[1]

4 (b) Fig. 1.1 shows a section through part of a leaf.

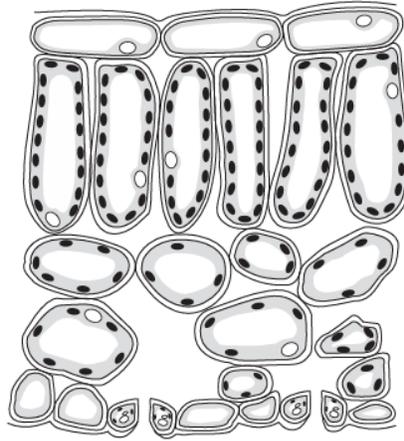


Fig. 1.1

(i) On Fig. 1.1 draw:

- a label line to identify one guard cell and label it **G**
- a label line to identify one of the stomata and label it **S**.

[2]

(ii) State **one** function of stomata.

.....

..... [1]

Paper 4

**Questions are applicable for both core and extended candidates
unless indicated in the question**

- 5 (b) Fig. 3.3 is a photomicrograph of a cross-section of part of a xerophyte leaf.

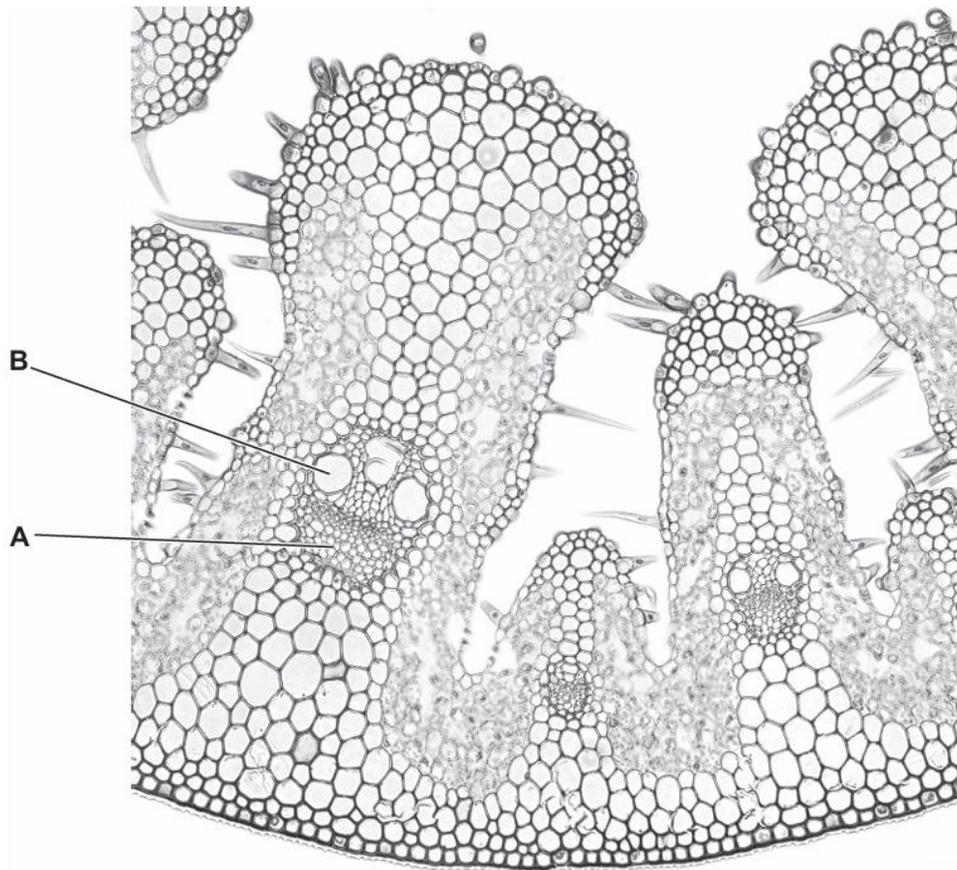


Fig. 3.3

- (i) Explain why the part labelled **A** in Fig. 3.3 is a tissue.

.....

.....

.....

.....

..... [2]

- (ii) Describe **two** ways the structure labelled **B** in Fig. 3.3 is adapted for its function.

1

.....

2

.....

[2]

(iii) Describe **one** way the leaves of xerophytes are adapted to their environment. **(extended only)**

.....
.....
..... [1]

(iv) Describe **one** way the roots of xerophytes are adapted to their environment. **(extended only)**

.....
.....
..... [1]

6 Fig. 1.1 is a photomicrograph of a cross-section of part of a leaf.

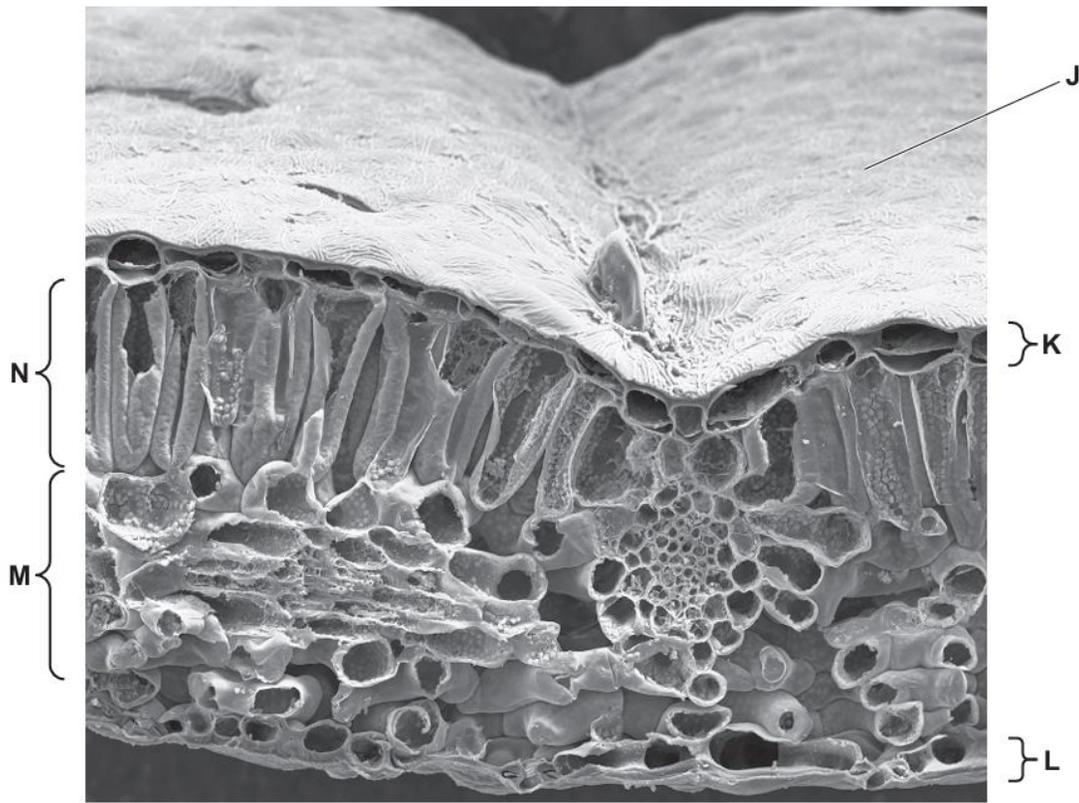


Fig. 1.1

(a) (i) State the letter in Fig. 1.1 that identifies where:

gas exchange is controlled

most photosynthesis occurs

spongy mesophyll cells are found.

[3]

(ii) Draw a circle **on Fig. 1.1** to identify a vascular bundle.

[1]

(iii) Translocation occurs in the vascular bundle.

State the names of **two** substances that are only moved by translocation. **(extended only)**

1

2

[2]

7 (c) Carbon dioxide is a raw material for photosynthesis.

(i) State the process by which carbon dioxide travels into the leaf from the air.

..... [1]

(ii) Describe the pathway taken by a molecule of carbon dioxide, from the air outside a leaf to a spongy mesophyll cell.

.....

.....

.....

.....

..... [2]

8 (c) The scientists also made observations of the leaf structure of the soybean plants.

Epidermis and mesophyll tissues are adapted for photosynthesis.

Complete Table 2.1 by stating **two** structural features of each of these tissues **and** explain how each feature is an adaptation for photosynthesis.

Table 2.1

tissue	feature	how the feature is an adaptation for photosynthesis
epidermis	1

	2
mesophyll

	2

[4]

