

Leaf structure: practice questions

5 questions • 14 marks • mark scheme at the back

For Cambridge IGCSE Biology 0610 (and 0970, which has the same content). **Supplement** is Extended content, only examined on Papers 2 and 4.

Name

Total / 14

1 Which part of a leaf contains the most chloroplasts? [1 mark]

- A. ☐ Upper epidermis
- B. ☐ Palisade mesophyll
- C. ☐ Spongy mesophyll
- D. ☐ Guard cells

2 State two ways in which most leaves are adapted for photosynthesis because of their shape, and explain one of them. [3 marks]

3 The diagram of a leaf cross-section has four labelled parts: W (upper epidermis), X (palisade mesophyll), Y (air spaces) and Z (stoma). Describe the function of each part in photosynthesis. [4] [4 marks]

- 4** (a) Name the two tissues found in the vascular bundle of a leaf. [1] (b) State the role of each tissue in a leaf. [2] (c) Explain why the cells of the palisade mesophyll are close to the upper surface of the leaf. [2] **[5 marks]**

.....

.....

.....

.....

.....

.....

.....

- 5** What is the main function of the guard cells? **[1 mark]**

- A. ☐ to absorb light
- B. ☐ to open and close the stomata
- C. ☐ to carry water to the leaf
- D. ☐ to store starch

Mark scheme

One mark for each point unless a maximum is given. Words in brackets are not needed for the mark.

1. [1]

B B (1)

2. [3]

- large surface area (1)
- thin (1)
- large surface area absorbs more light / thin so light reaches all cells / thin so short distance for carbon dioxide to diffuse (1)

3. [4]

- W: transparent / lets light through to the cells below (1)
- X: contains many chloroplasts / absorbs light for photosynthesis (1)
- Y: allow carbon dioxide to diffuse through to the cells (1)
- Z: allows carbon dioxide to enter (and oxygen to leave) (1)

4. [5]

- (a) xylem and phloem (1)
- (b) xylem: brings water to the leaf (1)
- (b) phloem: carries sucrose / products of photosynthesis away from the leaf (1)
- (c) this is where the most light reaches (1)
- (c) so more light is absorbed by the chloroplasts for photosynthesis (1)

5. [1]

B B (1)