

Questions are for both separate science and combined science students**Q1.**

Plants are made of different tissues.

(a) Which term describes a group of tissues working together?

Tick (✓) **one** box.

Organ

☐

Organism

☐

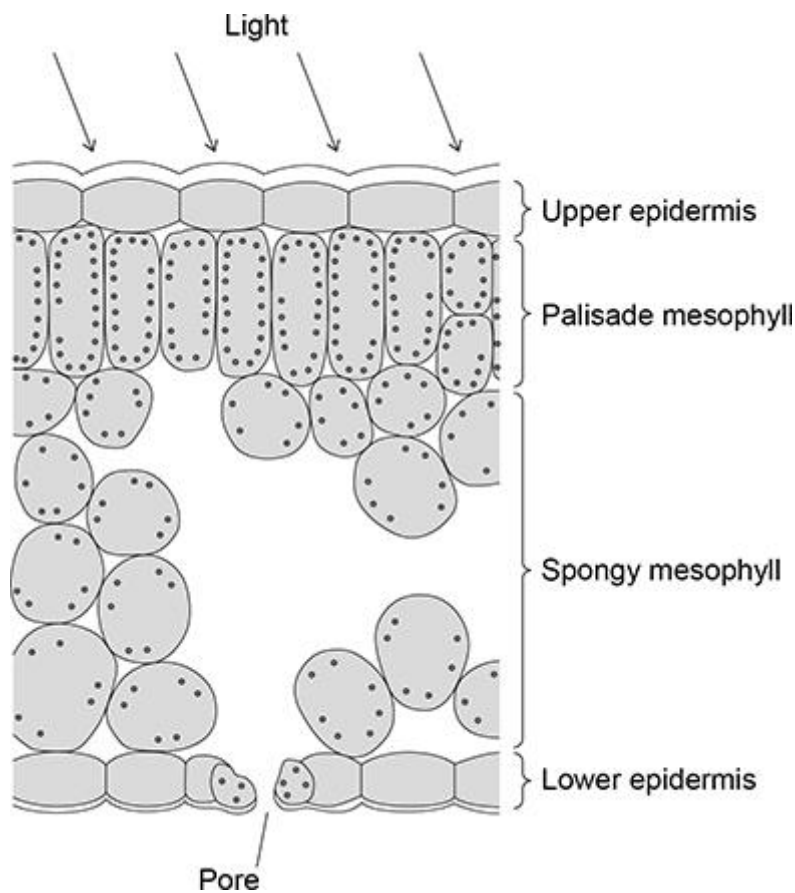
Organ system

☐

(1)

Figure 1 shows the tissues in a leaf.

Figure 1



- (b) Draw **one** line from each leaf tissue to an important feature of the tissue.

Leaf tissue	Feature
	Contains many air spaces
Palisade mesophyll	
	Contains the most chloroplasts
Spongy mesophyll	
	Made of dead cells

(2)

- (c) Xylem tissue transports water to the leaves.

Which term describes the loss of water from the leaves?

Tick (✓) **one** box.

Photosynthesis

☐

Respiration

☐

Transpiration

☐

(1)

- (d) Which substance strengthens xylem tissue?

Tick (✓) **one** box.

Glucose

☐

Lignin

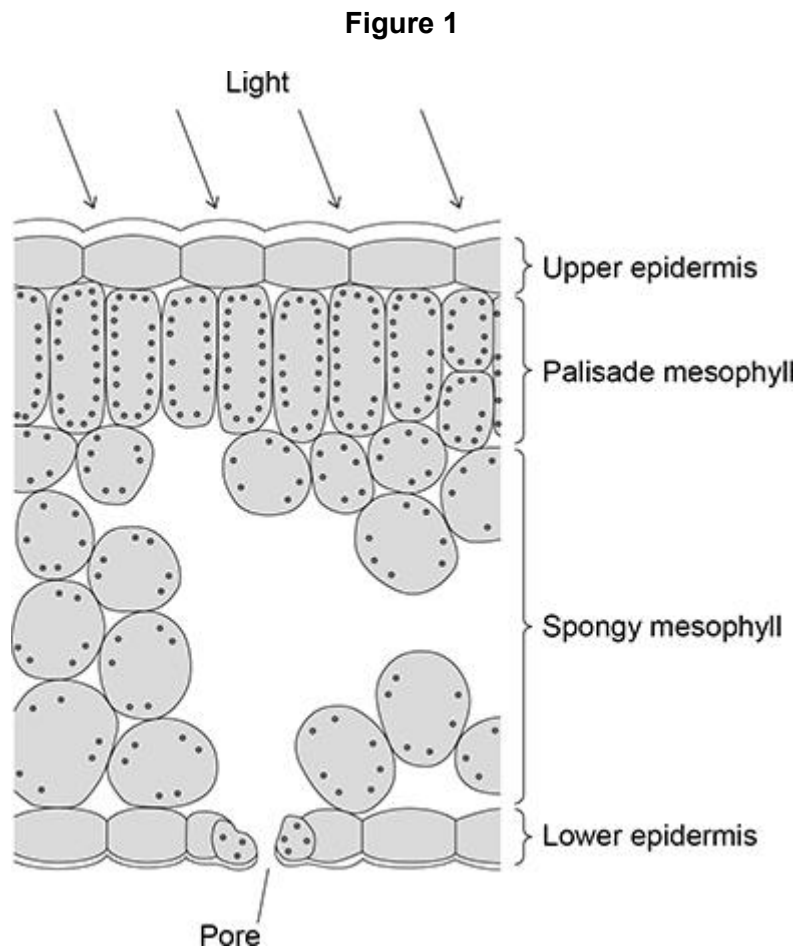
☐

Starch

☐

(1)

Figure 1 is repeated below.



- (e) The upper epidermis is transparent.

Explain why the upper epidermis needs to be transparent.

Use **Figure 1**.

(2)

(f) Complete the sentences.

Choose answers from the box.

chloroplasts	guard cells	meristems	stomata
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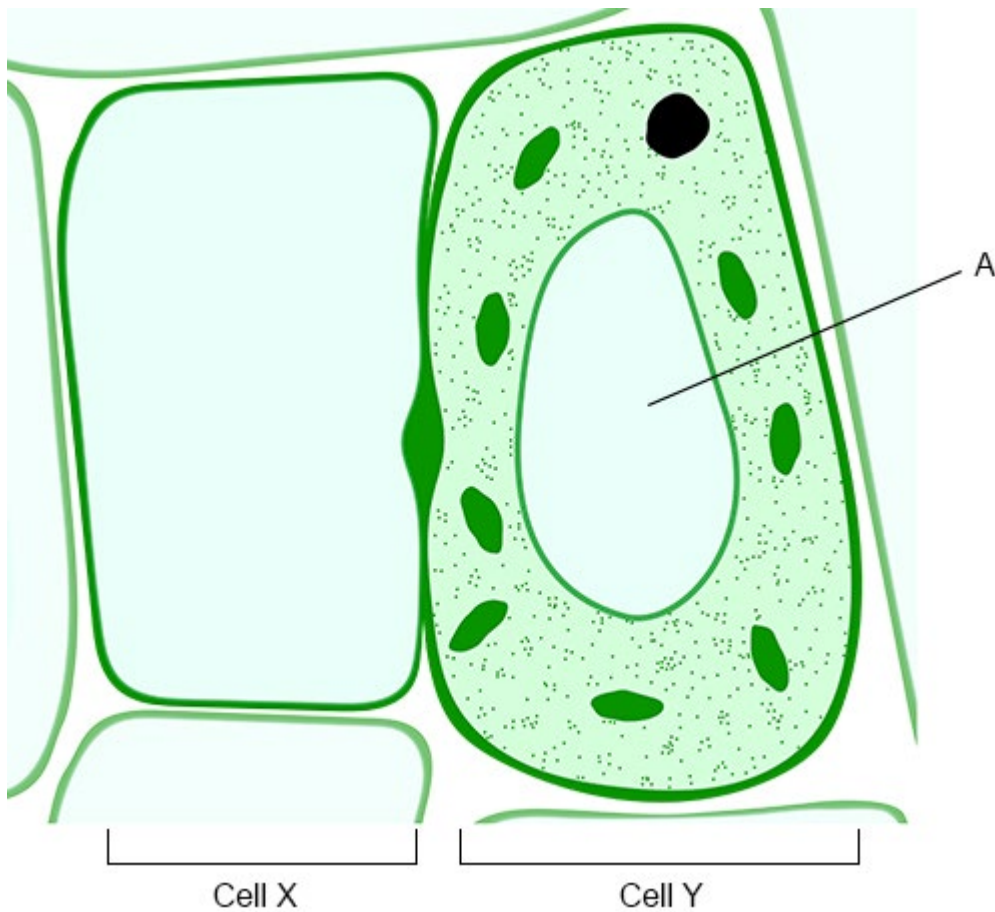
The pores in the lower epidermis of a leaf are called _____.

The opening and closing of the pores in the lower epidermis is controlled by _____.

(2)

Figure 2 shows two cells from phloem tissue.

Figure 2



(g) Part **A** in **Figure 2** contains cell sap.

Name part **A** in **Figure 2**.

(1)

Sugars move from cell **Y** into cell **X** against the concentration gradient.

Energy is needed to move sugars against the concentration gradient.

(h) Which process moves sugars against the concentration gradient?

Tick (✓) **one** box.

Active transport

☐

Diffusion

☐

Osmosis

☐

(1)

(i) Which cell structures are needed to provide energy to move sugars?

Tick (✓) **one** box.

Chloroplasts

☐

Chromosomes

☐

Mitochondria

☐

(1)

(Total 12 marks)

Q2.

A root is a plant organ.

Plant roots contain many different types of tissue.

(a) What is a tissue?

(1)

(b) Tissue in the tip of a plant root contains stem cells.

Stem cells can differentiate into any type of cell.

Name the type of tissue in plants that contains stem cells.

(1)

(Total 2 marks)