

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 (\checkmark) one box.

Organ

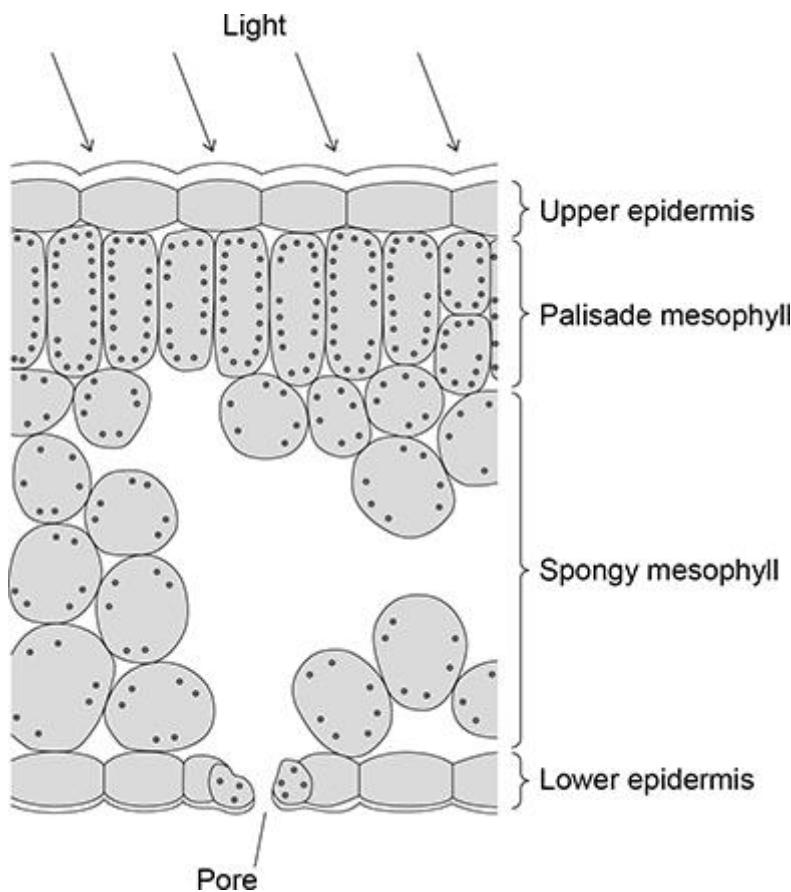
Organism

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
Palisade mesophyll	Contains many air spaces
Spongy mesophyll	Contains the most chloroplasts
	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	<input type="checkbox"/>
Respiration	<input type="checkbox"/>
Transpiration	<input type="checkbox"/>

(1)

- (d) Which substance strengthens xylem tissue?

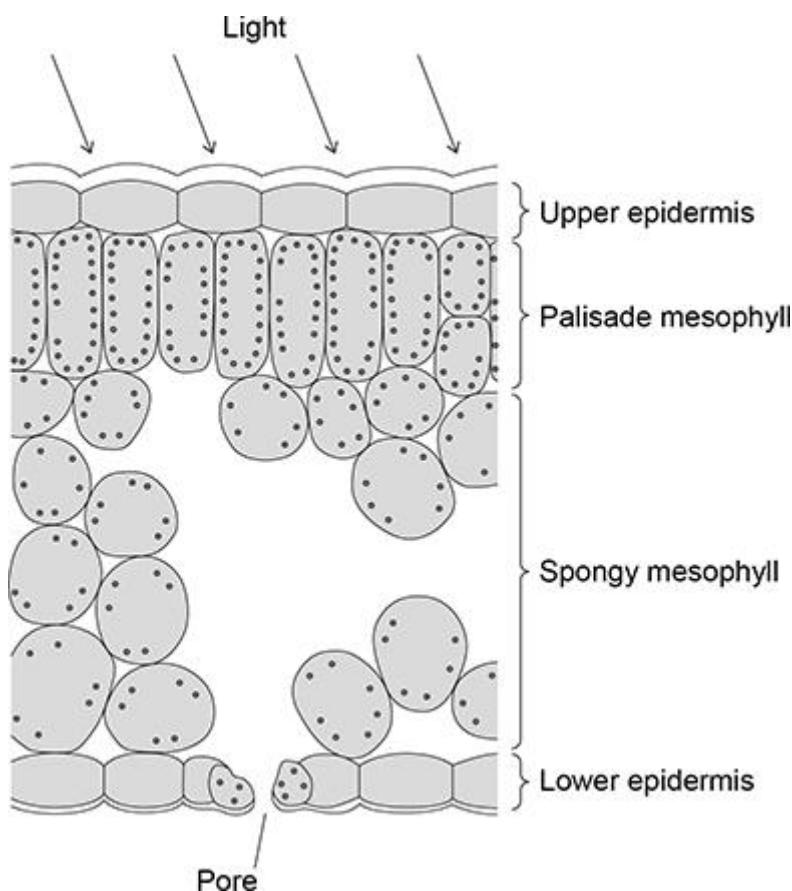
Tick (✓) **one** box.

Glucose	<input type="checkbox"/>
Lignin	<input type="checkbox"/>
Starch	<input type="checkbox"/>

(1)

Figure 1 is repeated below.

Figure 1



- (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

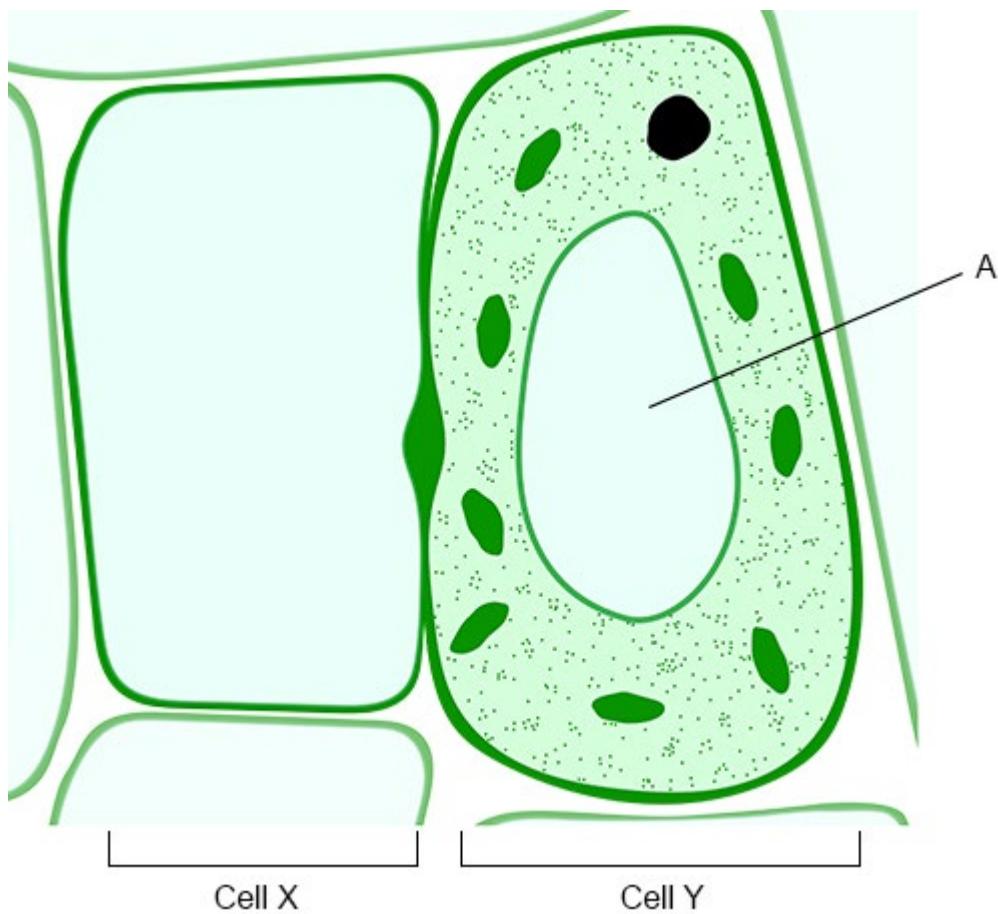
The pores in the lower epidermis of a leaf are called _____.

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 (\checkmark) **one** box.

Active transport

Diffusion

Osmosis

(1)

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

Tick (\checkmark) **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)