




GCSE Biology B (Twenty First Century Science)
J257/01 Breadth in Biology (Foundation)

Question Set 29

1. (a) Sarah is learning about plants.

Draw a line to connect each **diagram** to the **name of the structure** and its **role in the plant**.

Diagram	Name of the structure	Role in the plant
	Xylem	Absorbs water and mineral ions
	Phloem	Transports sugars
	Root hair cell	Transports water and mineral ions

[5]

(b) Sarah's teacher tells her she can observe these structures using a light microscope.

Complete the sentences to describe how to use a light microscope.

Use words from the list.

You can use each word once, more than once, or not at all.

coverslip eyepiece lens focusing knob

light objective lens stage table

Place the slide with the specimen to be observed on the

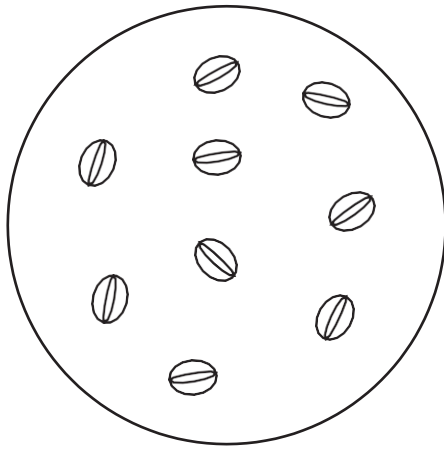
Select theto be used.

As you look down the microscope column, turn the

to bring the specimen into focus.

[3]

- (c) Sarah wants to estimate how many stomata there are on the underside of a leaf.
 Sarah uses a light microscope to do this.
 The diagram shows the field of view from her microscope.



- (i) Count how many stomata can be seen in the field of view.

Number of stomata = [1]

- (ii) The area covered by the field of view is approximately 1 mm^2 .

The total area of the underside of the leaf is 60 mm^2 .

Estimate how many stomata there will be on the underside of this leaf.

Use your answer to part (c)(i).

- (iii) Sarah does not think that her sample was representative of the whole leaf.
 Estimated number of stomata = [1]

Suggest how Sarah could improve her method.

- (iv) If the sample taken was not representative of the leaf, what impact would this have on Sarah's estimate? [2]

[1]

Total Marks for Question Set 29: 13

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