

GCSE Biology A (Gateway)

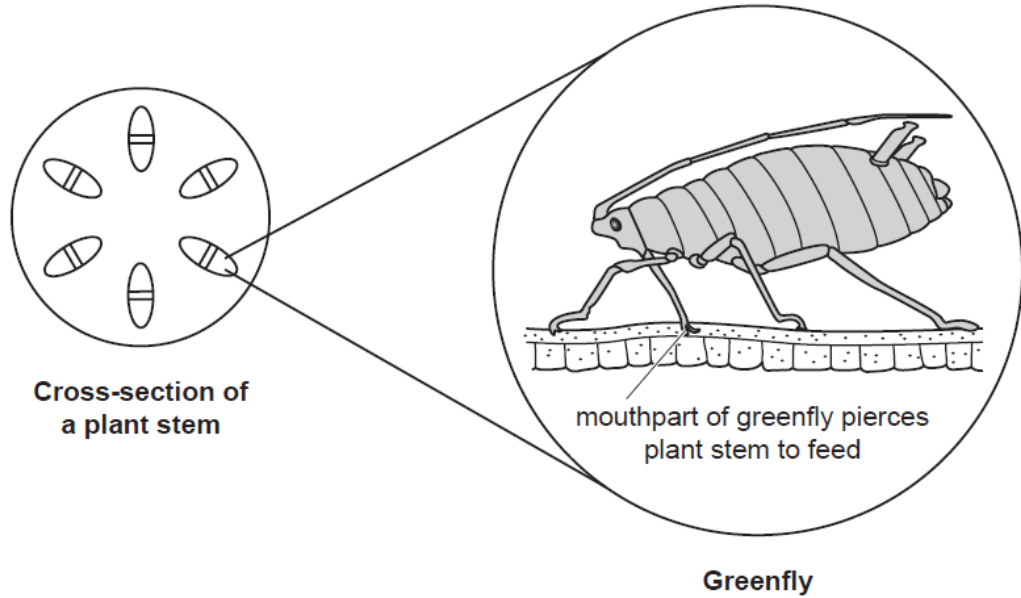
J247/01 B1-B3 and B7 Foundation (Foundation Tier)

Question Set 19

1

The diagram shows a cross-section of a plant stem.

A greenfly feeds on the plant by piercing through to the tissue shown in the cross-section of a plant stem.



- (a) (i) What is the name of the tissue in the stem that the greenfly is trying to reach with its mouthpart?

Tick (✓) one box.

- | | |
|-----------|--------------------------|
| Phloem | <input type="checkbox"/> |
| Root hair | <input type="checkbox"/> |
| Xylem | <input type="checkbox"/> |

[1]

- (ii) Explain why plants infested with greenfly have very poor growth.

[2]

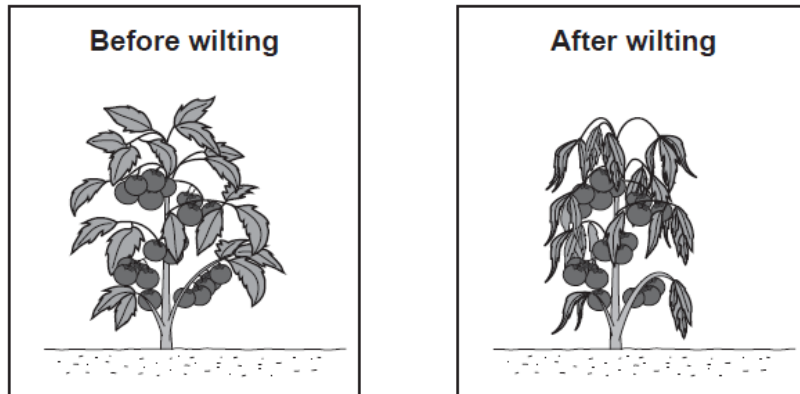
(b)

A gardener carries out an experiment using two similar tomato plants. The tomato plants are grown in pots.

She puts one inside a glasshouse and one outside beside the glasshouse.

To decide which plant loses the most water, the gardener looks to see which plant wilts first.

The diagrams show a plant before and after it has wilted.



(i) On a windy day, the plant **outside** the glasshouse wilts first.

Explain why.

[2]

(ii) The gardener's results do not provide very accurate information about the effect of wind on water loss.

How could the gardener improve the design of her experiment?

[3]

(c)

Fifty years ago, scientists experimenting on plants had to inject dyes to measure water flow.

Now they can use modern methods such as MRI and X-ray imaging.

Scientists are now developing new ideas on how water flows through a plant that are different from theories developed fifty years ago.

Explain why.

[2]

Total Marks for Question Set 19: 10

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