

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

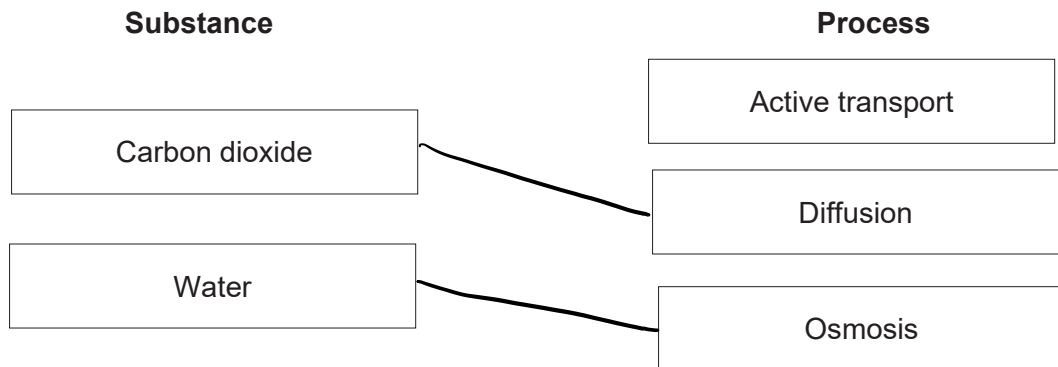
Question Set 15

1. Plants photosynthesise and respire.

(a) Carbon dioxide and water are needed by plant cells for photosynthesis.

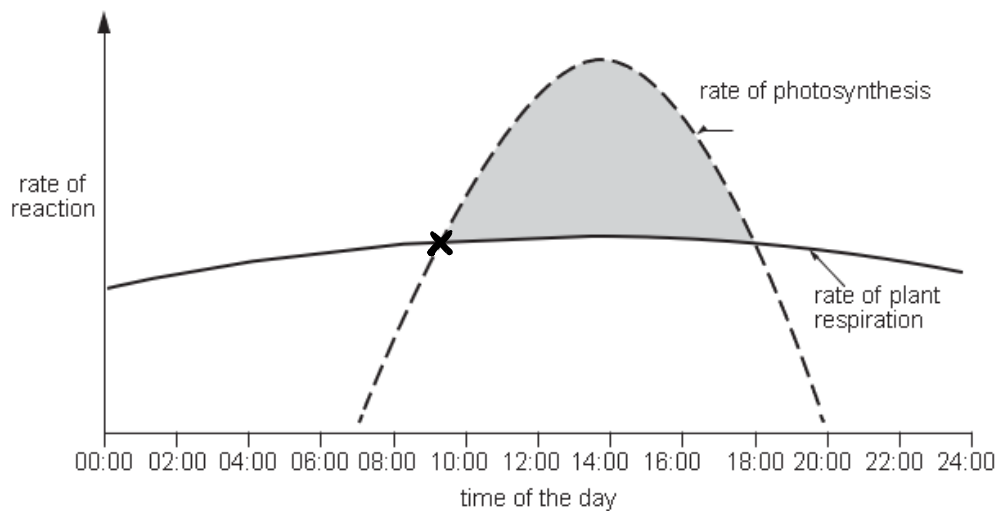
These substances need to be transported into the cells.

Draw a line from each **substance** to the **process** that transports it into a cell.



[2]

(b) The graph shows the rate of photosynthesis and respiration in a plant during one day.



(i) Over which period of time did the plant photosynthesise?

From 07:00 to 20:00 [1]

(ii) During which period of time was the rate of photosynthesis greater than the rate of respiration?

From 09:00 to 18:00 [1]

- (iii) A 'compensation point' is a point where the rate of photosynthesis is the same as the rate of respiration.

On the graph place an X to show a compensation point.

[1]

- (c) Plants need magnesium to make chlorophyll.

One of Amy's plants is not getting enough magnesium from the soil. It is shorter than the other plants.

Explain why not getting enough magnesium has affected the plant's growth.

- magnesium ^{ions} required to make chlorophyll pigment in leaves [3]
- chlorophyll in chloroplasts trap sunlight required for photosynthesis
- photosynthesis makes glucose needed for respiration & growth of plant

(∴ limits photosynthesis.)

Total Marks for Question Set 15: 8

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