

GCSE Biology B (Twenty First Century Science)
J257/03 Breadth in Biology (Higher)

Question Set 27

- 1 (a) (i) The graph shows how temperature can affect the rate of photosynthesis for three different plant types, **A**, **B** and **C**.

© W Yamori, 'Temperature response of photosynthesis in C3, C4, and CAM plants: Temperature acclimation and temperature adaption', Fig. 4, Photosynthesis Research, Vol. 119 (1-2), June 2013. Item removed due to third party copyright restrictions.

Which **three** conclusions can be drawn from the graph?

Tick (✓) **three** boxes.

All plant types can photosynthesise over the same range of temperatures.

For all plant types, as temperature increases the rate of photosynthesis increases, peaks and then decreases.

The highest rate of photosynthesis for plant type **B** is at 25 °C.

The highest rate of photosynthesis for plant type **C** and **A** is the same.

The lowest rate of photosynthesis for plant type **C** is at 25 °C.

Plant type **C** is less tolerant of high temperatures.

[3]

- (ii) Explain why temperature affects the rate of photosynthesis.

[2]

- (b) Describe the **two** main stages of photosynthesis and the role of chloroplasts in this process.

[4]

Total Marks for Question Set 27: 9

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