

# 9Ba REACTIONS IN PLANTS

- 1 Some plants have variegated leaves like the one in the diagram. Cells in the green region contain chloroplasts, cells in the white region do not. All cells contain mitochondria. *Respiration happens in the mitochondria*



Tick (✓) one box to show what happens in the leaf.

- ☒ **A** Photosynthesis happens in the green region, respiration happens in all cells.  
☐ **B** Photosynthesis and respiration only happen in the green region.  
☐ **C** Photosynthesis happens in all cells, respiration happens in the green region.  
☐ **D** Photosynthesis happens in the white region, respiration happens in all cells.

- 2 Complete the symbol equation for photosynthesis.

6 \_\_\_\_\_ + 6 \_\_\_\_\_ → \_\_\_\_\_ + 6 \_\_\_\_\_

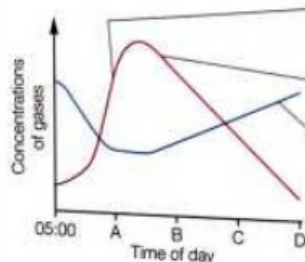
- 3 Complete the text using words from the box.

energy      phloem      photosynthesis      respiration      sugars

Glucose produced by photosynthesis is converted to sugars which dissolve in water. Specialised transport tissue called phloem carries this solution around the plant. Inside cells the sugars may be converted back to glucose, which is broken down in respiration to release energy for other processes.

- 4 The graph shows the concentrations of oxygen and carbon dioxide in the water around a pond plant.

How the concentrations of two gases dissolved in water vary over 18 hours in a beaker containing pondweed



**oxygen**  
The gas increases in concentration because rate of photosynthesis increases as light intensity increases.  
**oxygen**  
The gas decreases in concentration because rate of photosynthesis decreases as light intensity decreases.  
**Carbon dioxide**  
The gas increases in concentration because rate of photosynthesis decreases so less carbon dioxide is converted to glucose

- a State which colour on the graph shows which gas.  
oxygen = red, carbon dioxide = blue  
b Complete the labels on the graph. Then compare your labels in your group to look for improvements. Mark any improvements in a different colour.

- 5 Where in a plant cell does photosynthesis occur? Chloroplast

