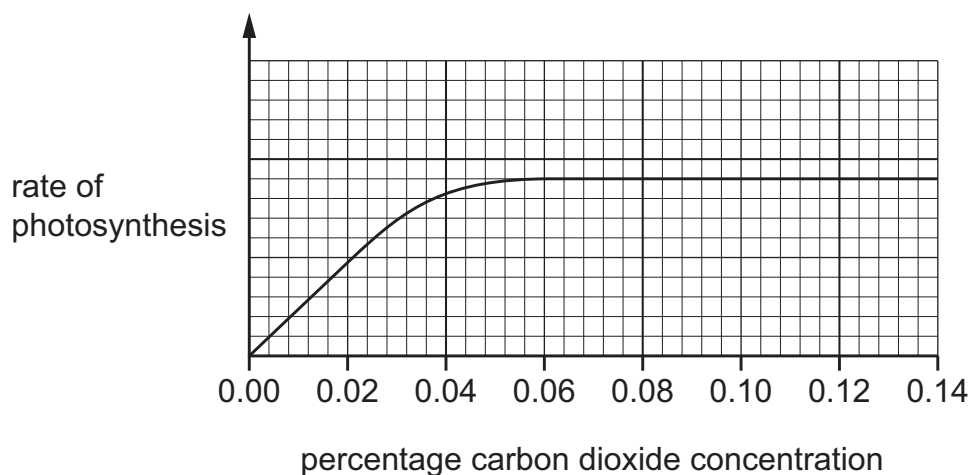


- 8 The graph shows the rate of photosynthesis of a plant in full sunlight in different concentrations of carbon dioxide. All other factors were kept constant.



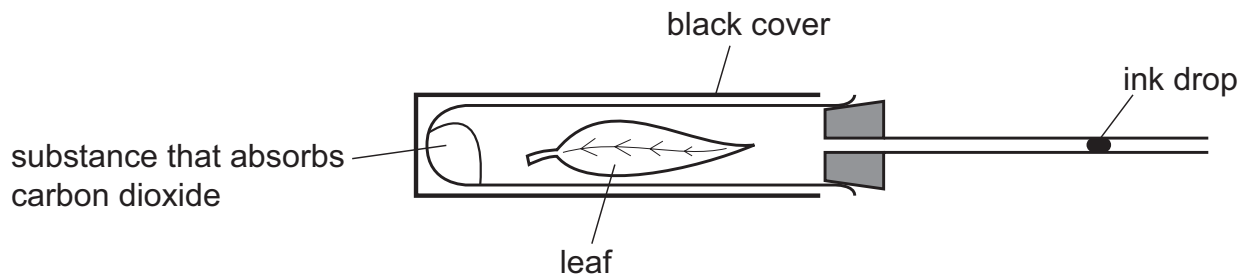
What limits the rate of photosynthesis at 0.02% carbon dioxide concentration?

- A carbon dioxide concentration
- B humidity
- C light intensity
- D temperature

- 8 Which substance contains magnesium ions?

- A cellulose
- B chlorophyll
- C glucose
- D glycerol

10 The diagram shows an experiment to investigate gas exchange in a leaf.



In which direction does the ink drop move and for what reason?

	direction	reason
A	towards the leaf	photosynthesis
B	towards the leaf	respiration
C	away from the leaf	photosynthesis
D	away from the leaf	respiration

5 (a) (i) State the balanced chemical equation for photosynthesis.

..... [2]

(ii) Chlorophyll is needed for photosynthesis.

State the name of the mineral ion needed to make chlorophyll.

..... [1]

(iii) State the name of the carbohydrate used for energy storage in a plant.

..... [1]

(b) A plant shoot was placed in a light-proof box. A hole was cut in one side of the box and a light was shone into the box.

Fig. 5.1 shows the plant shoot at the start of the investigation and after one week.

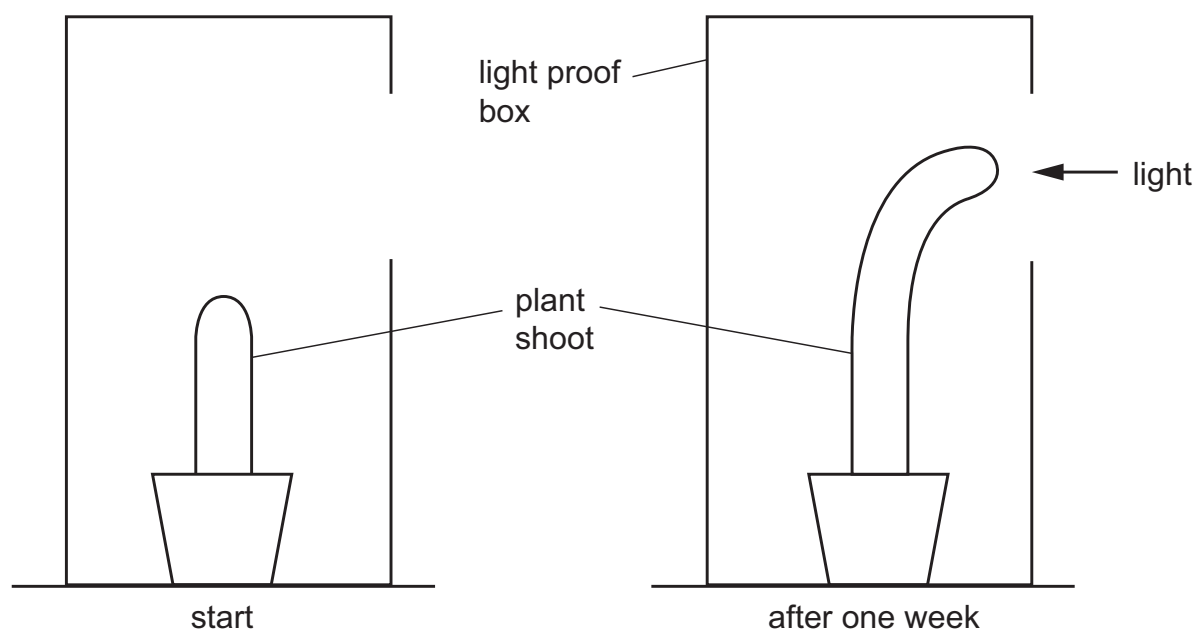


Fig. 5.1

(i) Identify the tropic response shown by the plant shoot in Fig. 5.1.

..... [1]

(ii) Explain the chemical control of the tropic response shown by the plant shoot in Fig. 5.1.

[4]

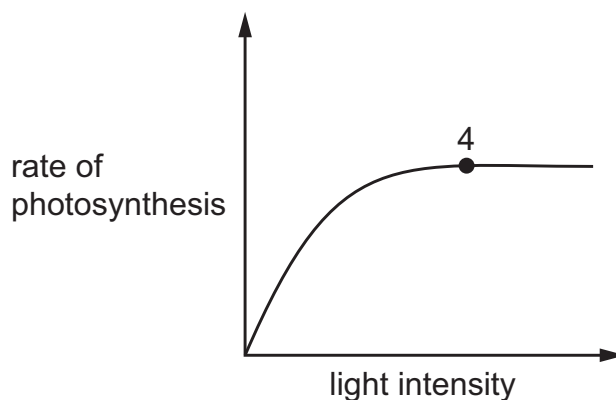
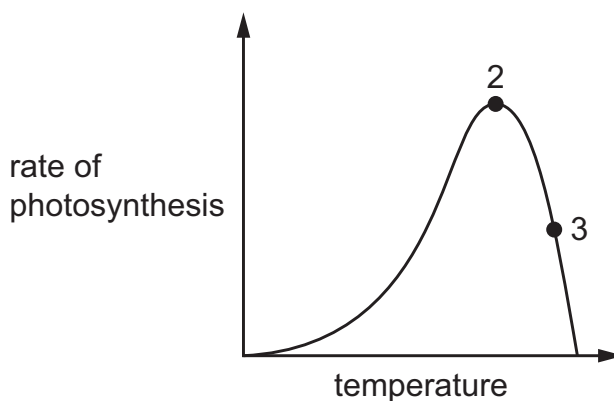
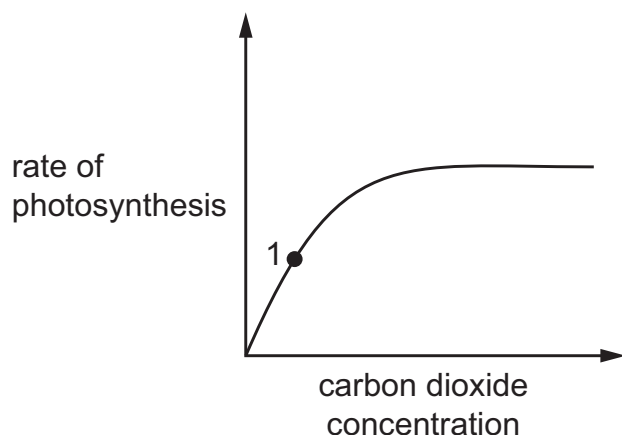
(iii) Explain how the type of tropic response shown in Fig. 5.1 is an advantage to a plant.

..... [2]

[Total: 11]

- 9 A student investigated how the rate of photosynthesis is affected by carbon dioxide concentration, temperature and light intensity.

The graphs show the results.



What is a correct statement for these results?

- A Carbon dioxide concentration is a limiting factor at 1.
- B No enzymes are denatured at 3.
- C Light intensity is a limiting factor at 4.
- D Temperature is a limiting factor at 2.

- 6 What is the balanced chemical equation for photosynthesis?

- A $3\text{CO}_2 + 3\text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 3\text{O}_2$
- B $6\text{CO}_2 + 6\text{O}_2 \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{H}_2\text{O}$
- C $6\text{CO}_2 + 6\text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$
- D $6\text{CO}_2 + 6\text{H}_2\text{O} \rightarrow 6\text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$

- 10** The graphs show how the rate of photosynthesis and the rate of respiration in a plant changed over a 24-hour period.

Which graph shows the correct rate of photosynthesis and rate of respiration?

key

—— photosynthesis

----- respiration

