CAMBRIDGE International Examinations

Activity 3

Example initial assessment

Photosynthesis assessment **Total 30 marks**

1. Complete the passage about photosynthesis using only terms from the list below. Each term can be used once, more than once, or not at all.

xylem	**chlorophyll**
oxygen	**light**
water	**mitochondrion**
cellulose	**glucose**
stomata	**carbohydrates**
raw	**starch**
chemical	**roots**
carbon dioxide	**chloroplast**
spongy	**phloem**

Plants can carry out photosynthesis, a process where ..... are manufactured from ..... materials using energy from ..... . One of these material is ....., which is taken into the plants in the ..... and is transported to the leaves in the ..... tissue. The other raw material is ....., which enters the leaves through the open ..... during the day. The sugar ..... is synthesised as a result of photosynthesis, and the waste product of photosynthesis is ..... . To absorb the light energy, the photosynthetic pigment ..... is required. The organelle that contains this pigment is known as the ..... In photosynthesis, the pigment is responsible in the transfer of energy into ..... energy in molecules, for the synthesis of the sugar. This sugar can be converted to a storage molecule known as .....

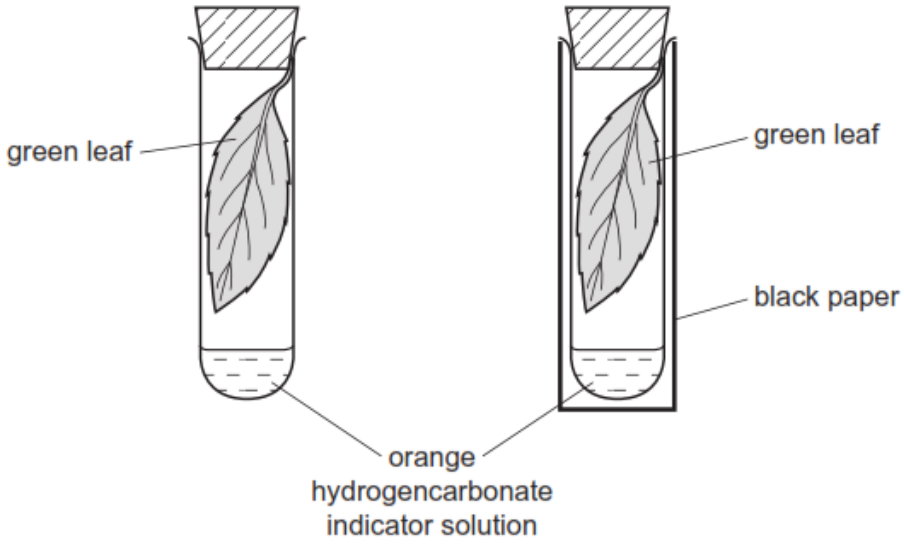
[14]

2. Write out the balanced chemical equation for photosynthesis.

[2]

3.

Two similar leaves are set up in test-tubes as shown. One is exposed to light, while the other is kept in the dark.

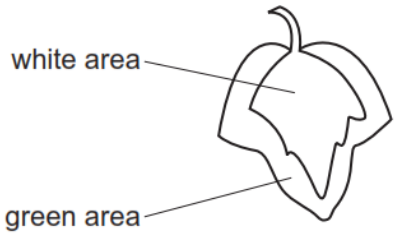


Describe and explain the results that you would see after a few hours.

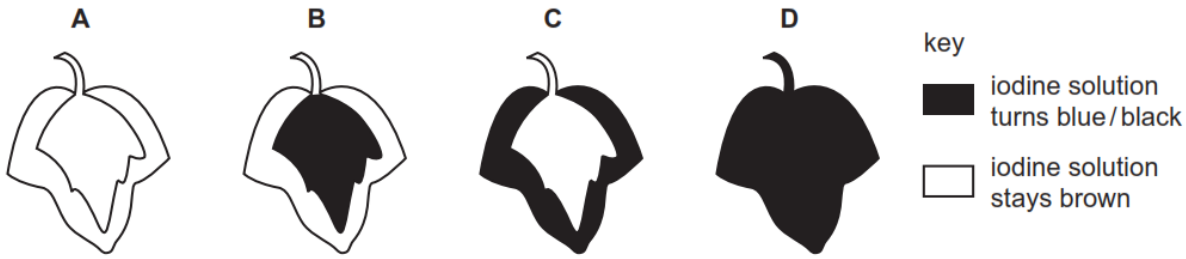
[3]

4. In a photosynthesis experiment, a plant is left in bright sunlight for several hours. A leaf is then removed from the plant and tested for starch, using iodine solution.

The diagram shows the leaf from the plant that was used in the experiment.

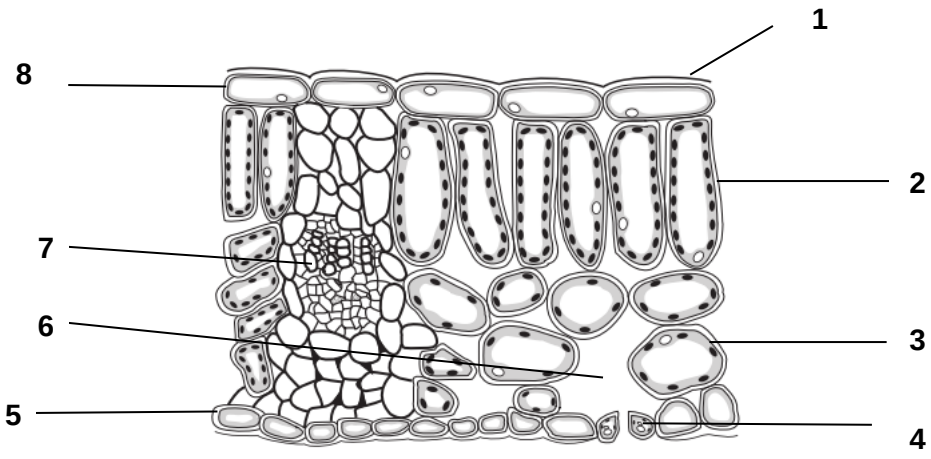


State and explain which of the diagrams below shows the results of the experiment.



[3]

5. Label the diagram of a vertical section through a leaf.



[8]