

Photosynthesis Quiz

Ten questions on the whole series. Answer them all, then turn the page round to check.

1 Which gas do plants take in from the air for photosynthesis?

A Oxygen

B Nitrogen

C Carbon dioxide

D Hydrogen

2 Which is the balanced symbol equation for photosynthesis?

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

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

C $\text{CO}_2 + \text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + \text{O}_2$

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

3 In which layer of a leaf does most photosynthesis happen?

A Upper epidermis

B Palisade mesophyll

C Spongy mesophyll

D Phloem

4 What do guard cells do?

A Carry water up the plant

B Open and close the stomata

C Store starch

D Make chlorophyll

5 Where does the oxygen released by photosynthesis come from?

A Carbon dioxide

B Glucose

C Water

D The soil

6 Pondweed makes bubbles faster as a lamp gets brighter, then the rate levels off. Why?

A Light is still limiting

B Another factor is now limiting

C The plant stops respiring

D The chlorophyll is used up

7 A lamp is moved from 10 cm to 20 cm away from a plant. What happens to the light intensity?

A It halves

B It falls to a quarter

C It doubles

D It stays the same

8 When do plants respire?

A Only at night

B Only in the light

C All the time

D Never: only animals respire

9 Which product made from glucose strengthens plant cell walls?

A Starch

B Cellulose

C Oil

D Amino acids

10 Who showed in 1779 that plants need light to 'restore' air?

A Joseph Priestley

B Jan Baptist van Helmont

C Jan Ingenhousz

D Melvin Calvin

ANSWERS

1. C: Carbon dioxide
2. A: $6\text{CO}_2 + 6\text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$ (B is aerobic respiration)
3. B: Palisade mesophyll
4. B: Open and close the stomata
5. C: Water (shown with an oxygen isotope tracer in 1941)
6. B: Another factor, such as CO_2 or temperature, is now limiting
7. B: It falls to a quarter ($1 \div 2^2 = 1/4$)
8. C: All the time, day and night
9. B: Cellulose
10. C: Jan Ingenhousz

SERIES COMPLETE

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