

Higher Combined version — Higher Tier (★) included; Separate-only (◆) removed.

**Q1. Write the balanced symbol equation for photosynthesis.**

[2 marks]

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**Q2. State where in the plant cell photosynthesis occurs, and name the pigment responsible for absorbing light energy.**

[2 marks]

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**Q3. List FOUR ways in which plants use the glucose produced by photosynthesis.**

[4 marks]

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★ HIGHER TIER

**Q4. ★ Explain why photosynthesis is described as an endothermic reaction.**

[2 marks]

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**Total: 10 marks**

**Q1 (2 marks)**

Write the balanced symbol equation for photosynthesis.

- $6\text{CO}_2 + 6\text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$  [2] — 1 mark if correct but unbalanced

**Q2 (2 marks)**

State where in the plant cell photosynthesis occurs, and name the pigment responsible for ...

- Chloroplasts [1]
- Chlorophyll [1]

**Q3 (4 marks)**

List FOUR ways in which plants use the glucose produced by photosynthesis.

- Respiration — releases energy as ATP [1]
- Converted to starch — for storage [1]
- Converted to cellulose — for cell walls [1]
- Used to make amino acids (with nitrates) → proteins / converted to lipids for seeds / sucrose for transport [1]

**Q4 (2 marks) [★ HT]**

★ Explain why photosynthesis is described as an endothermic reaction.

- Photosynthesis absorbs energy (from light) [1]
- More energy is taken in than released — energy is stored in the chemical bonds of glucose [1]