

Solutions

Each answer shows the steps, then the **result**.

2.1

- $\text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2 \rightarrow 6\text{CO}_2 + 6\text{H}_2\text{O} (+ \text{ATP})$

2.2

- Glycolysis, the Krebs cycle, the electron transport chain

2.3

- It is the final electron acceptor in the electron transport chain

3.1 C

- the electron transport chain

3.2

(a)

- Glycolysis occurs in the cytoplasm; its product is pyruvate

(b)

- Without oxygen the electron transport chain stops, so most ATP production halts and the cell relies on the small amount from glycolysis (fermentation)

3.3

- They are opposites — photosynthesis uses CO_2 and water to make glucose and O_2 ; respiration uses glucose and O_2 to make CO_2 and water — so the products of one are the reactants of the other