

12.2 Aerobic respiration

Name: _____ Class: _____ Date: _____

Total: 7 marks

KEY WORDS aerobic respiration 有氧呼吸 • oxygen 氧气 • glucose 葡萄糖 • respiration 呼吸作用
• energy 能量

Objective

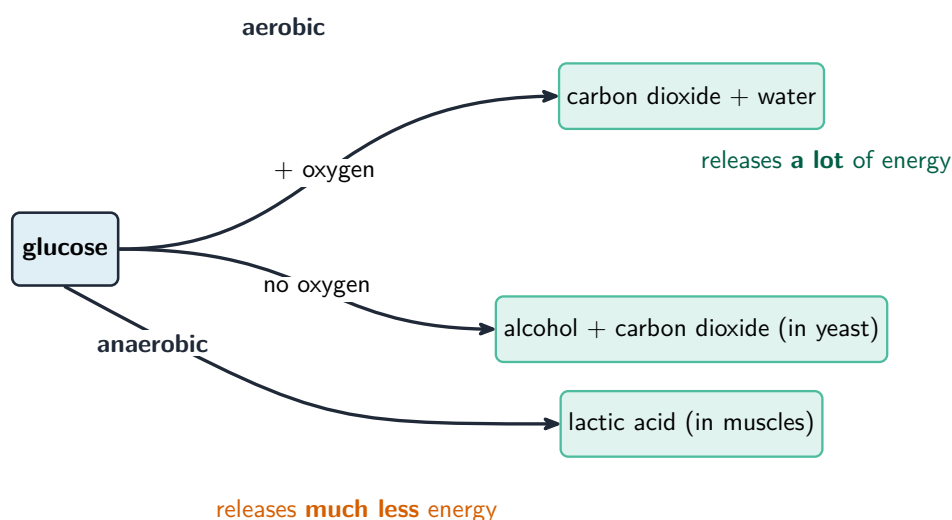
Build the skills to answer exam questions on **aerobic respiration** 有氧呼吸 — the equation and the energy released.

You must be able to:

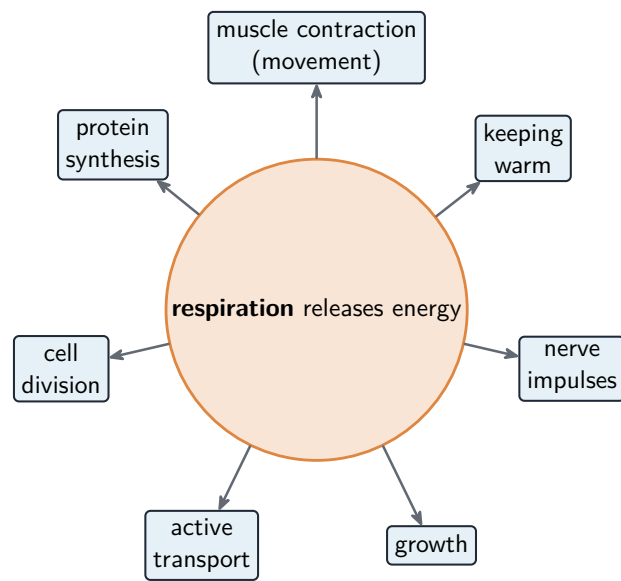
- write the word (and balanced) equation for aerobic respiration
- state that it needs oxygen and releases a lot of energy
- name the products

1 Worked examples

■ Aerobic respiration



Aerobic respiration needs oxygen and releases a lot of energy



Aerobic respiration releases energy for the cell

glucose + oxygen → carbon dioxide + water

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

2 Practice

2.1 Write the word equation for aerobic respiration.

[2]

2.2 State the gas needed for aerobic respiration.

[1]

3 Exam-style questions

3.1 The products of aerobic respiration are: [1]

- **A** alcohol and carbon dioxide
 - **B** lactic acid only
 - **C** carbon dioxide and water
 - **D** glucose and oxygen
-

3.2 Aerobic respiration releases energy from glucose.

(a) Write the balanced chemical equation. [2]

(b) State how the energy released compares with anaerobic respiration. [1]

Solutions

2.1 glucose + oxygen $\rightarrow$ carbon dioxide + water.

2.2 oxygen.

3.1 C. Aerobic respiration produces carbon dioxide and water.

3.2 (a) $\text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2 \rightarrow 6\text{CO}_2 + 6\text{H}_2\text{O}$.

(b) aerobic respiration releases much more energy.