

12.2 Aerobic respiration

Name: _____ Class: _____ Date: _____

Total: 7 marks

KEY WORDS aerobic respiration • oxygen • glucose
• respiration • energy

Objective

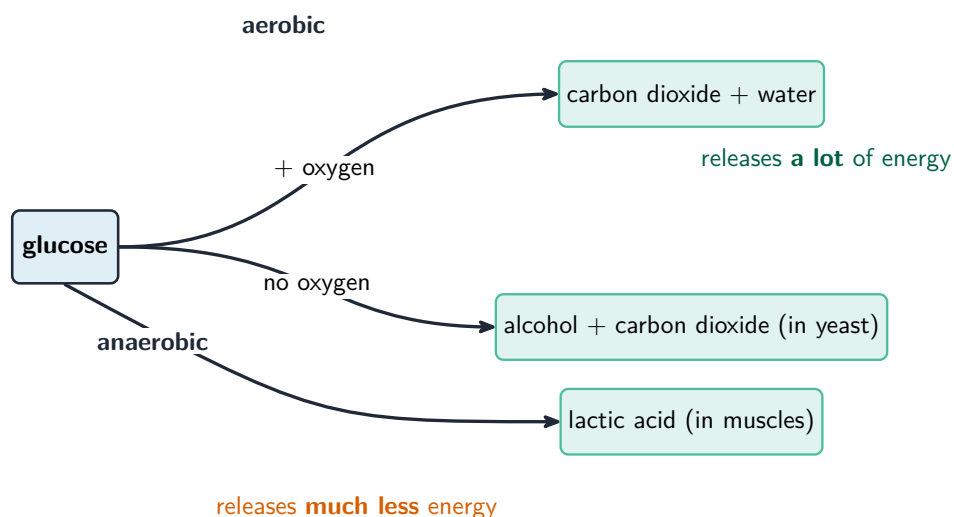
Build the skills to answer exam questions on **aerobic respiration** – the equation and the energy released.

You must be able to:

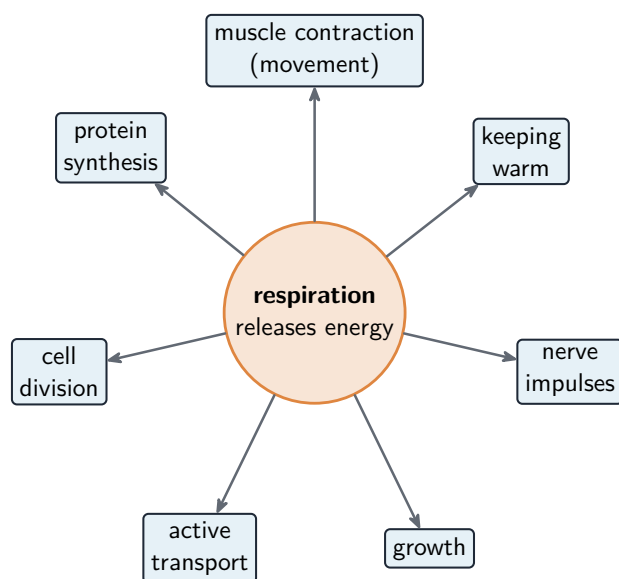
- write the word (and balanced) equation for aerobic respiration
- state that it needs oxygen and releases a lot of energy
- name the products

1 Key knowledge and 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

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

2.1

- glucose + oxygen → carbon dioxide + water

2.2

- aerobic respiration needs **oxygen**

3.1 C

- aerobic products are **carbon dioxide and water**
- A and B are anaerobic; D are reactants

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** than anaerobic