

12.1 Respiration

Name: _____ Class: _____ Date: _____ **Total: 20 marks**

KEY WORDS temperature 温度 • respiration 呼吸作用 • yeast 酵母 • carbon dioxide 二氧化碳
• energy 能量

Objective

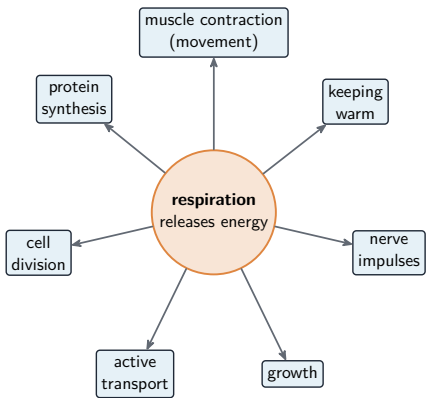
Build the skills to answer exam questions on **respiration** 呼吸作用 — what it is, why it is needed, and how it differs from breathing.

You must be able to:

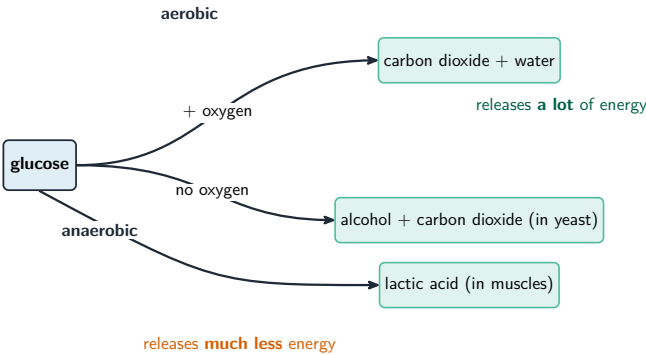
- define respiration as the release of energy from food in cells
- list the uses of the energy released
- distinguish respiration from breathing

1 Worked examples

■ Uses of energy



Respiration releases energy in all living cells, all the time (not the same as breathing)



Respiration can be aerobic or anaerobic

- **uses:** muscle contraction, protein synthesis, cell division, active transport, growth, nerve impulses, keeping warm.

2 Practice

2.1 Define respiration. [1]

2.2 State two uses cells make of the energy from respiration. [2]

3 Exam-style questions

3.1 Respiration takes place in: [1]

- | | |
|---|---|
| A | B |
| C | D |
- A the lungs only
B all living cells
C the blood only
D the air spaces

3.2 Respiration is often confused with breathing.

(a) State the difference between respiration and breathing. [2]

(b) In a yeast experiment, explain why warmer yeast gives off carbon dioxide faster (up to a point). [2]

3.3 Respiration and breathing are often confused.

(a) Write the word equation and the balanced symbol equation for aerobic respiration. [3]

(b) State **three** ways in which a cell uses the energy released by respiration. [3]

(c) Explain the difference between respiration and breathing. [3]

(d) A student says “plants respire only at night”. Explain why this is wrong. [3]
