

Anaerobic Respiration

Question Paper

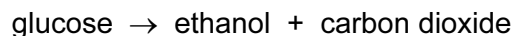
Level	O Level
Subject	Biology
Exam Board	Cambridge International Examinations
Topic	Respiration
Sub Topic	Anaerobic Respiration
Booklet	Question Paper

Time Allowed: 15 minutes

Score: /12

Percentage: /100

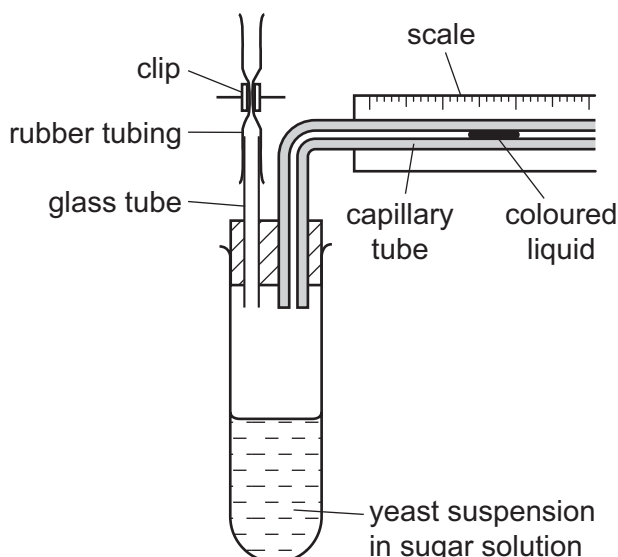
1 Anaerobic respiration in yeast can be summarised as follows.



How many molecules of carbon dioxide will be produced from the breakdown of two molecules of glucose?

- A** 2 **B** 4 **C** 6 **D** 12

2 The diagram shows apparatus that can be used to measure the rate of anaerobic respiration of yeast.



Which precautions must be taken during the setting up of this apparatus?

- P A layer of oil must be poured over the surface of the yeast suspension.
- Q The clip must not be closed until the yeast suspension has had time to reach room temperature.
- R The coloured liquid must be near the right hand end of the capillary tube.
- S The yeast suspension must be made with boiled and cooled water.

- A** P, Q and R **B** Q, R and S **C** R, S and P **D** S, P and Q

3 Which equation for anaerobic respiration in yeast is correct?

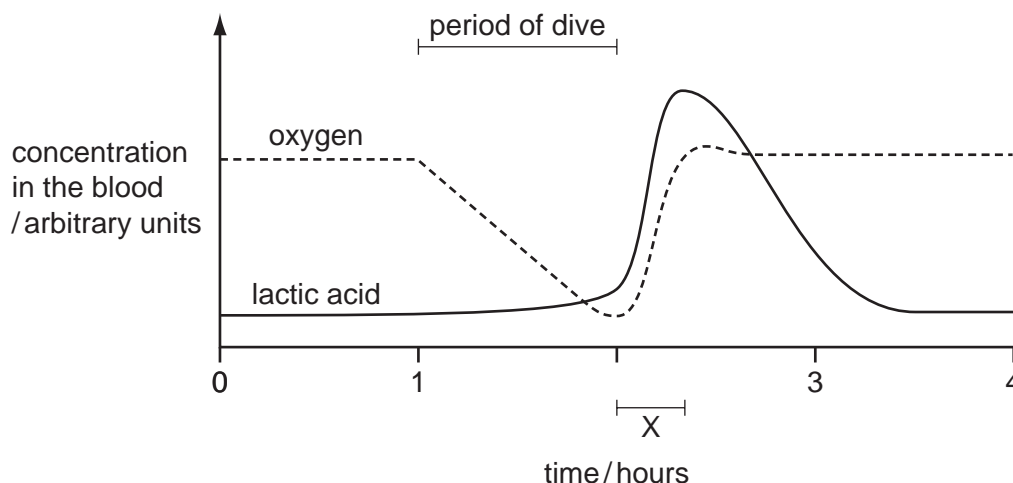
- A $C_6H_{12}O_6 + 6O_2 = 6CO_2 + 6H_2O$
- B $C_6H_{12}O_6 + 6O_2 = 6CH_3-CH_2-OH + 6CO_2$
- C $C_6H_{12}O_6 = 2CH_3-CH_2-OH + 2CO_2$
- D $6CO_2 + 6H_2O = C_6H_{12}O_6 + 6O_2$

4 What gives the comparison between anaerobic respiration in humans and in yeast?

	chemical	anaerobic respiration in humans	anaerobic respiration in yeast
A	alcohol	more is produced	less is produced
B	carbon dioxide	not produced	produced
C	glucose	used	not used
D	oxygen	not used	used

- 5 Seals are marine mammals. When they dive under water, they are capable of respiring anaerobically for long periods. During this time, blood flow to the muscles is greatly reduced but the muscles are able to tolerate high concentrations of lactic acid.

The graph shows the concentrations of lactic acid and oxygen in the blood of a seal before, during and after a dive.



What explains the change in lactic acid concentration during time X?

- A increased lactic acid production
 - B increased blood flow to the muscles
 - C increased rate of aerobic respiration
 - D reduced rate of anaerobic respiration
- 6 Which substance builds up in a muscle as a result of anaerobic respiration?
- A carbon dioxide
 - B ethanol
 - C lactic acid
 - D oxygen

7 What are the products of anaerobic respiration in muscle?

	alcohol	carbon dioxide	glucose	lactic acid	water
A	✓	✓	✓	x	x
B	x	✓	x	✓	✓
C	✓	x	✓	x	✓
D	x	x	x	✓	x

8 What are the products of anaerobic respiration in humans and in yeast?

	humans	yeast
A	ethanol	acid
B	ethanol and carbon dioxide	lactic acid and carbon dioxide
C	lactic acid	ethanol and carbon dioxide
D	lactic acid and carbon dioxide	ethanol

9 Fitness training increases the concentration of lactic acid that runners can build up in their muscles before pain stops them running.

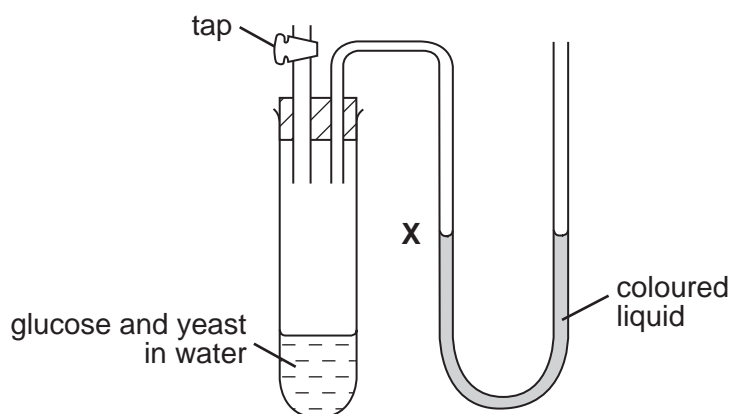
What is a consequence of this increase?

- A** Aerobic respiration in muscles can be more rapid.
- B** Blood flow to the muscles is increased.
- C** More anaerobic respiration can take place in muscles.
- D** More energy is needed by the muscles.

10 Which equation represents anaerobic respiration in yeast?

- A glucose → alcohol + carbon dioxide
- B glucose → alcohol + water
- C glucose → lactic acid + carbon dioxide
- D glucose → lactic acid + water

11 The test-tube contains glucose and yeast in water.



The tap is closed and the yeast respire anaerobically.

What is observed at **X** and which explanation is correct?

	observation at X	explanation
A	liquid level falls	carbon dioxide is produced
B	liquid level falls	oxygen is used
C	liquid level rises	carbon dioxide is produced
D	liquid level rises	oxygen is used

12 When yeast cells respire anaerobically, what substance is used and what substances are produced?

	substance used	substances produced
A	alcohol	carbon dioxide and water
B	alcohol	lactic acid and water
C	sugar	alcohol and carbon dioxide
D	sugar	carbon dioxide and water