

Respiration

Question Paper 1

Level	IGCSE
Subject	Biology (0610/0970)
Exam Board	Cambridge International Examinations (CIE)
Topic	Respiration
Sub-Topic	
Booklet	Question Paper 1

Time Allowed: 24 minutes

Score: /20

Percentage: /100

Grade Boundaries:

9	8	7	6	5	4	3	2	1
>85%	75%	68%	60%	53%	48%	40%	33%	<25%

1 What is produced by anaerobic respiration in yeast?

	lactic acid	carbon dioxide
A	✓	✓
B	✓	x
C	x	✓
D	x	x

2 During aerobic respiration glucose is broken down.

What is released in this process?

	carbon dioxide	energy	water
A	✓	✓	✓
B	✓	✓	x
C	✓	x	✓
D	x	✓	✓

3 Which processes depend on the action of enzymes?

- 1 digestion
- 2 osmosis
- 3 respiration

A 1 and 2 **B** 1 and 3 **C** 1 only **D** 2 and 3

4 What is the word equation for aerobic respiration in plants?

- A carbon dioxide + water \rightarrow glucose + oxygen
- B glucose + carbon dioxide \rightarrow water + oxygen
- C glucose + oxygen \rightarrow carbon dioxide + water
- D glucose + water \rightarrow carbon dioxide + oxygen

5 Lactic acid builds up in the muscles during vigorous exercise.

During recovery, how is this lactic acid removed?

- A aerobic respiration of lactic acid in the liver
- B anaerobic respiration of lactic acid in the muscles
- C excretion of lactic acid by the kidneys
- D removal of lactic acid by the alimentary canal

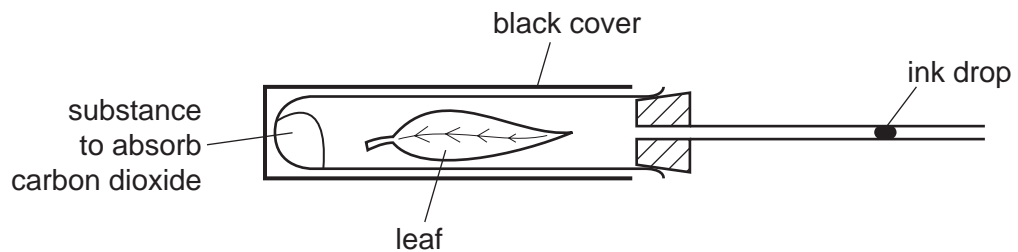
6 What is the equation for aerobic respiration?

- A $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O$
- B $C_6H_{12}O_6 \rightarrow 2C_3H_6O_3$
- C $C_6H_{12}O_6 \rightarrow 2C_2H_5OH + 2CO_2$
- D $6CO_2 + 6H_2O \rightarrow C_6H_{12}O_6 + 6O_2$

7 What is produced by yeast during anaerobic respiration?

- A carbon dioxide and water
- B ethanol and carbon dioxide
- C ethanol and water
- D lactic acid

8 The diagram shows an experiment to investigate gas exchange in a leaf.



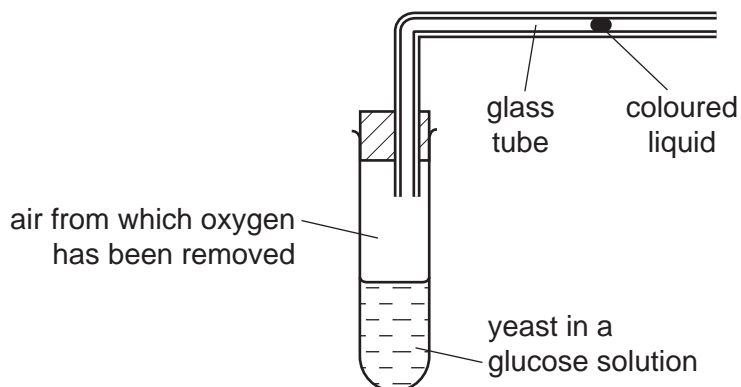
In which direction does the ink drop move and for what reason?

	direction	reason
A	to the left	photosynthesis
B	to the left	respiration
C	to the right	photosynthesis
D	to the right	respiration

9 Which process releases the most energy from one molecule of glucose?

- A aerobic respiration
- B anaerobic respiration in muscle
- C anaerobic respiration in yeast
- D photosynthesis

10 The diagram shows apparatus used to investigate anaerobic respiration in yeast.



What happens to the coloured liquid?

- A moves rapidly to the left
- B moves slowly to the left
- C moves to the right
- D stays still

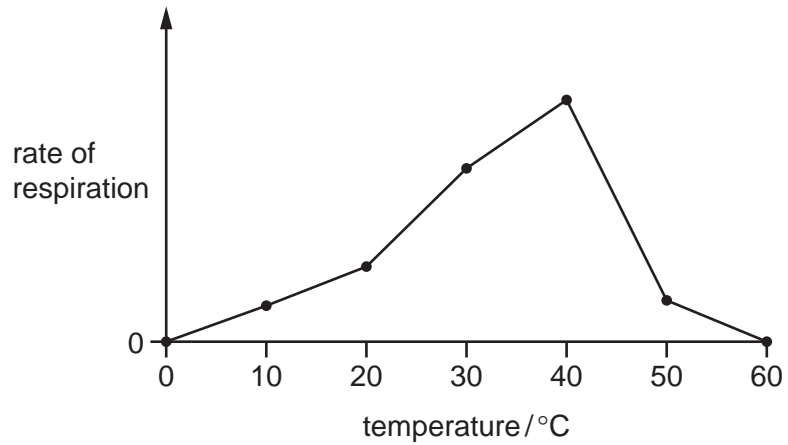
11 The list shows four metabolic processes.

- 1 carbon dioxide + water \rightarrow glucose + oxygen
- 2 glucose \rightarrow alcohol + carbon dioxide
- 3 glucose \rightarrow lactic acid
- 4 glucose + oxygen \rightarrow carbon dioxide + water

Which of these processes occur in muscles?

- A 1 and 2
- B 2 and 3
- C 3 and 4
- D 4 and 1

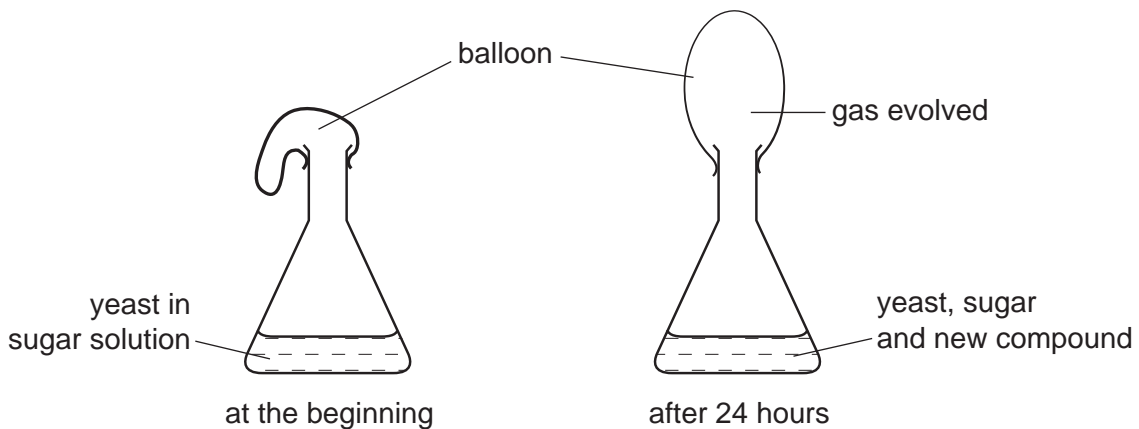
- 12 The graph shows the results of an experiment to investigate the rate of respiration of an organism at different temperatures.



What explains the difference between the rate of respiration at 50 °C and that at 30 °C?

- A enzymes working faster at 50 °C
- B enzymes working more slowly at 50 °C
- C less oxygen available at 50 °C
- D more oxygen available at 50 °C

13 The diagram shows an experiment to investigate the respiration of yeast.



Which gas is evolved and which new compound is present after 24 hours?

	gas evolved	new compound
A	carbon dioxide	ethanol (alcohol)
B	carbon dioxide	lactic acid
C	oxygen	ethanol (alcohol)
D	oxygen	lactic acid

14 In which conditions do the leaves of a green plant respire?

	bright light	darkness
A	✓	✓
B	✓	x
C	x	✓
D	x	x

- 15 Why does anaerobic respiration in muscles release less energy than aerobic respiration?
- A Energy is lost in carbon dioxide.
 - B Energy is lost in oxygen.
 - C Energy remains trapped in ethanol.
 - D Energy remains trapped in lactic acid.
- 16 Which word equation represents anaerobic respiration in human muscle?
- A glucose → carbon dioxide + ethanol (alcohol)
 - B glucose → carbon dioxide + lactic acid
 - C glucose → ethanol (alcohol)
 - D glucose → lactic acid
- 17 What are the products of anaerobic respiration in muscles?
- A ethanol and carbon dioxide
 - B ethanol only
 - C lactic acid and carbon dioxide
 - D lactic acid only

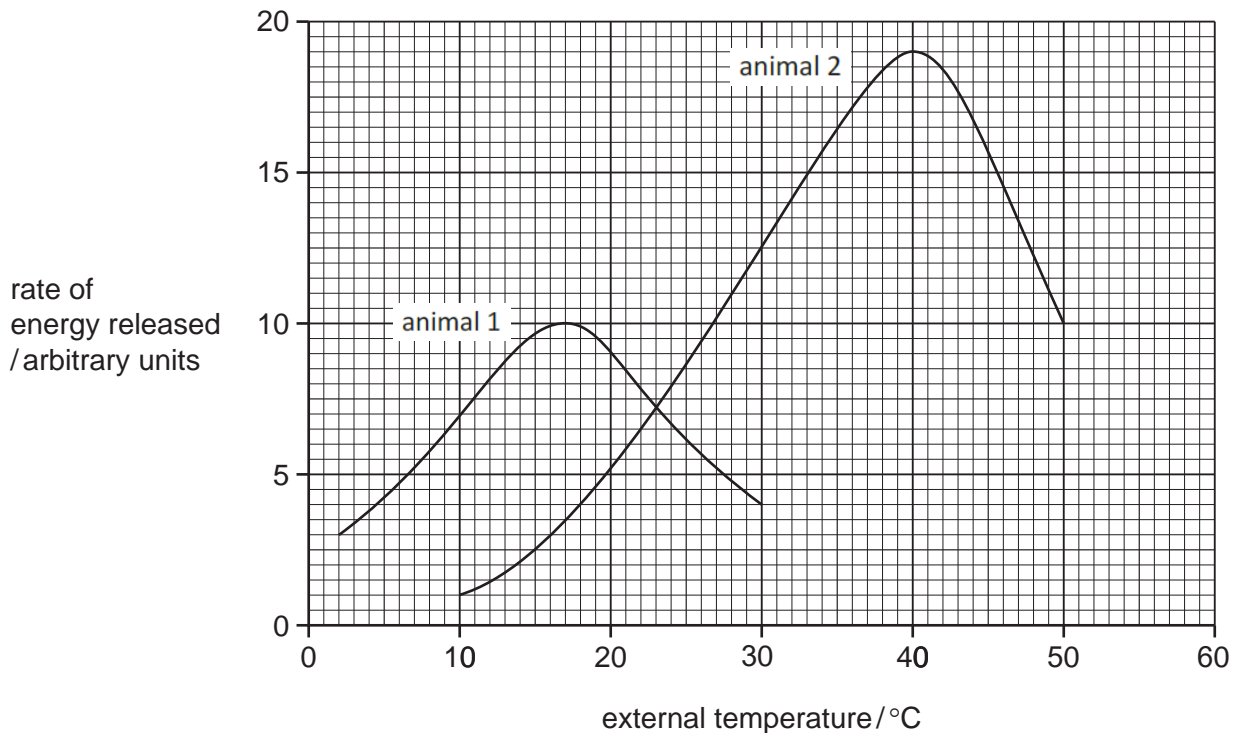
18 Four metabolic reactions are shown.

- 1 carbon dioxide + water → glucose + oxygen
- 2 glucose → ethanol + carbon dioxide
- 3 glucose → lactic acid
- 4 glucose + oxygen → carbon dioxide + water

Which reactions take place in human cells to release energy?

- A** 1 and 2 **B** 1 and 3 **C** 2 and 4 **D** 3 and 4

19 The graph shows the energy released by two animals through respiration as the external temperature changes.



Which conclusion can be drawn from the graph?

- A** Animals 1 and 2 release the least energy at 23 °C.
B Animal 2 always respire faster than animal 1.
C As the temperature rises, respiration always increases.
D The rate of respiration is the same for both animals at 23 °C.

20 Four word equations are shown.

P carbon dioxide + water → glucose + oxygen

Q glucose + oxygen → carbon dioxide + water

R glucose → lactic acid

S glucose → alcohol + carbon dioxide

What are the equations for anaerobic respiration in humans and anaerobic respiration in yeast?

	anaerobic respiration in humans	anaerobic respiration in yeast
A	Q	P
B	Q	S
C	R	P
D	R	S