

Respiration

IGCSE Biology Topical Questions Paper 1

May/June 2003

21 Why does anaerobic respiration by yeast release less energy than aerobic respiration?

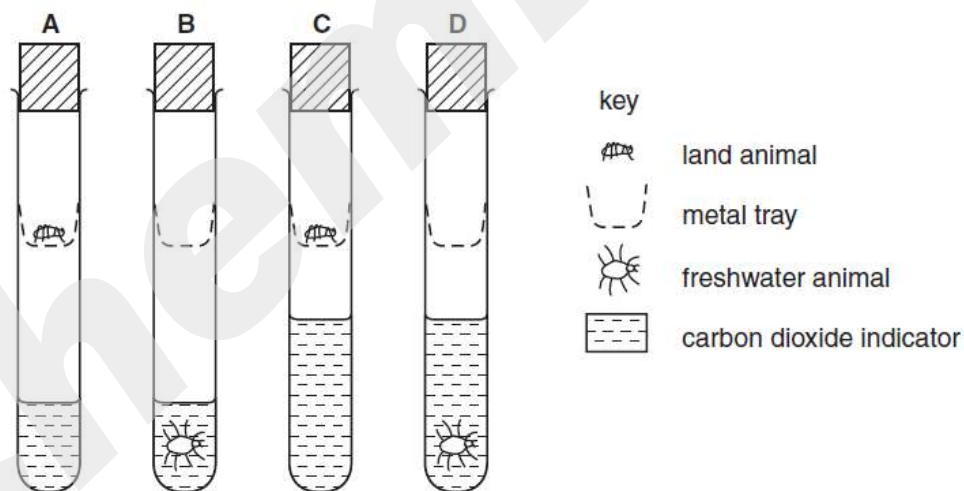
- A Energy is lost in carbon dioxide.
- B Energy is lost in oxygen.
- C Energy remains trapped in ethanol.
- D Energy remains trapped in lactic acid.

Oct/Nov 2003

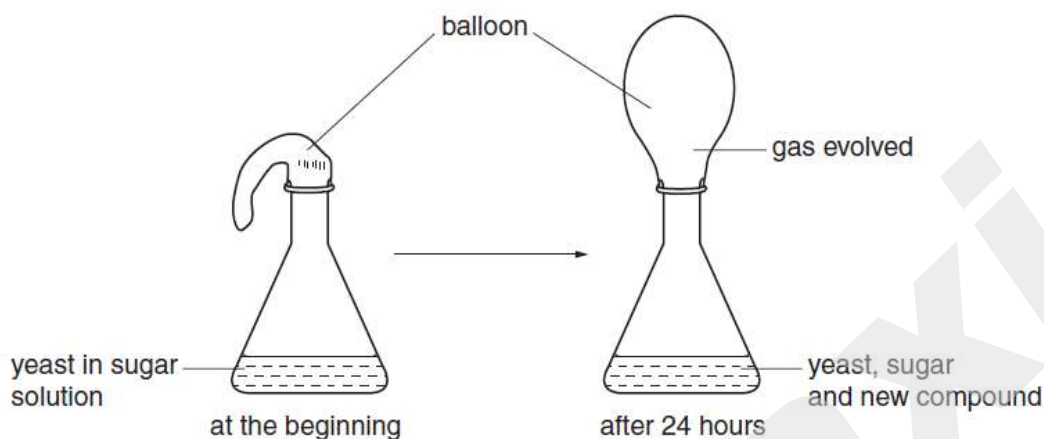
19 The diagram shows an experiment to find out the rate at which small land animals and freshwater animals give off carbon dioxide during respiration.

All the tubes were kept at the same temperature and all animals were equally active.

In which tube would the indicator be the first to change colour?



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



Which gas is evolved and which new compound is present?

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

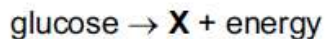
May/June 2004

19 Which word equation represents anaerobic respiration in muscles?

- A** glucose → lactic acid + energy
- B** glucose → ethanol + carbon dioxide + energy
- C** glucose + oxygen → carbon dioxide + water + energy
- D** glucose + oxygen → lactic acid + water + energy

Oct/Nov 2004

19 Anaerobic respiration in muscles can be summarised by the following equation.



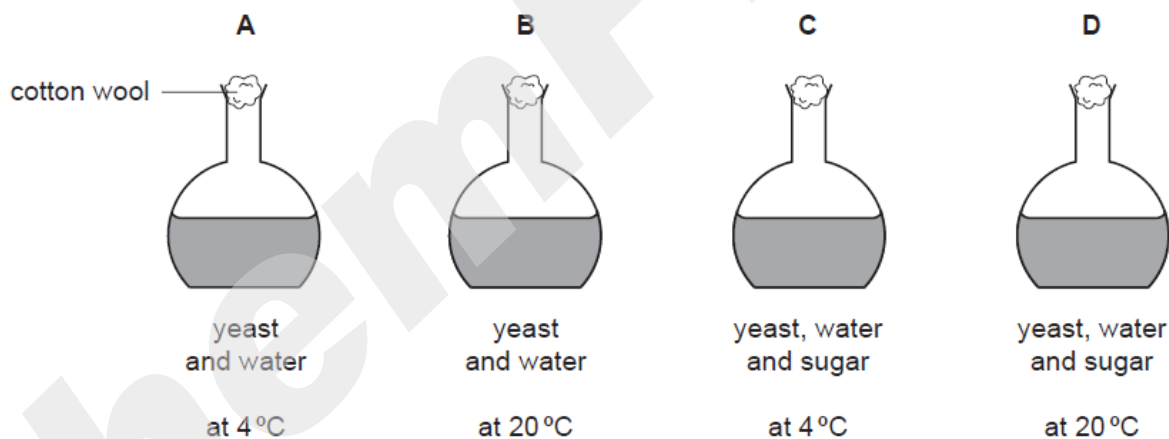
What is X?

- A** ethanol
- B** hydrogen
- C** lactic acid
- D** water

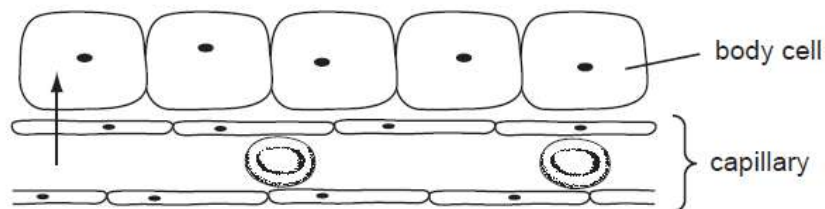
May/June 2005

20 Four flasks are sterilised and are set up as shown.

Which flask will contain most alcohol after several hours?



21 The diagram shows some body cells and a nearby capillary.



Which substances must pass in the direction of the arrow for the cells to respire aerobically?

- A carbon dioxide and water
- B glucose and oxygen
- C salts and glucose
- D water and salts

Oct/Nov 2005

19 What describes anaerobic respiration?

	energy released	oxygen required	waste products
A	a little	no	lactic acid
B	a little	yes	carbon dioxide and water
C	a lot	no	lactic acid
D	a lot	yes	carbon dioxide and water

May/June 2006

19 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

Oct/Nov 2006

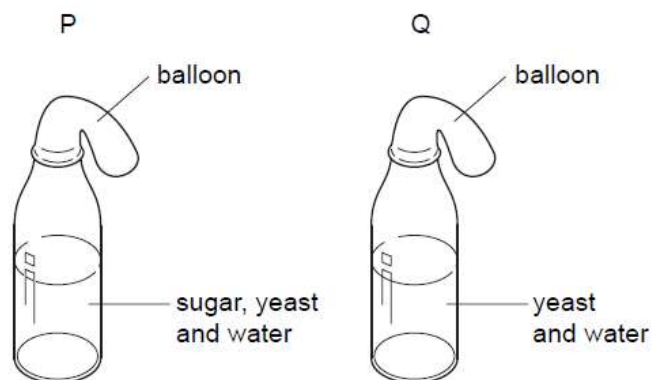
18 What is produced during anaerobic respiration in muscles?

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

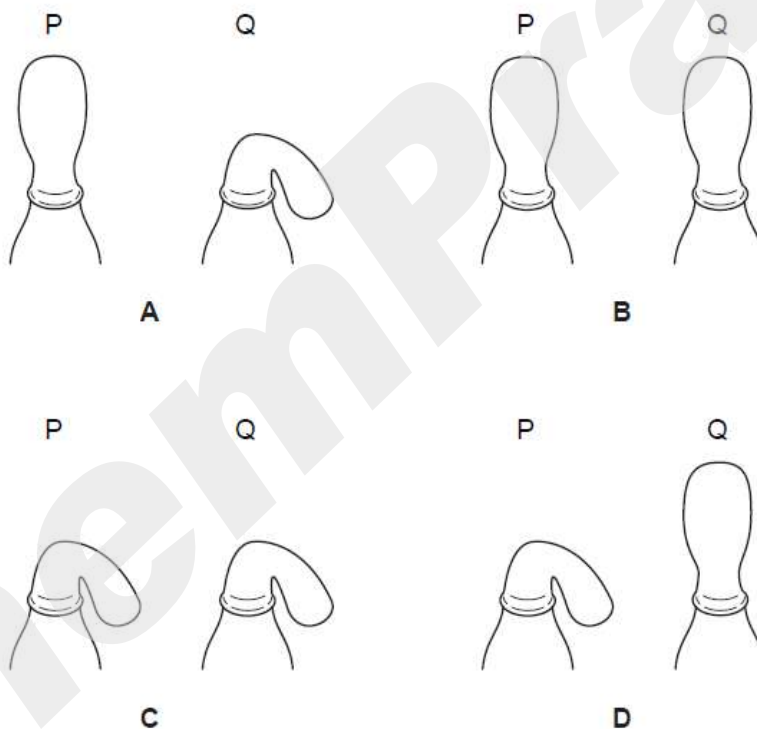
19 Which chemical contains energy that is released in aerobic respiration?

- A** carbon dioxide
- B** glucose
- C** oxygen
- D** water

20 In an experiment to investigate anaerobic respiration, two bottles are set up in a warm room, as shown in the diagram.



What would happen to each balloon after one day?



May/June 2007

19 Why is yeast used in breadmaking?

- A to provide alcohol
- B to provide carbon dioxide
- C to provide oxygen
- D to provide lactic acid

Oct/Nov 2007

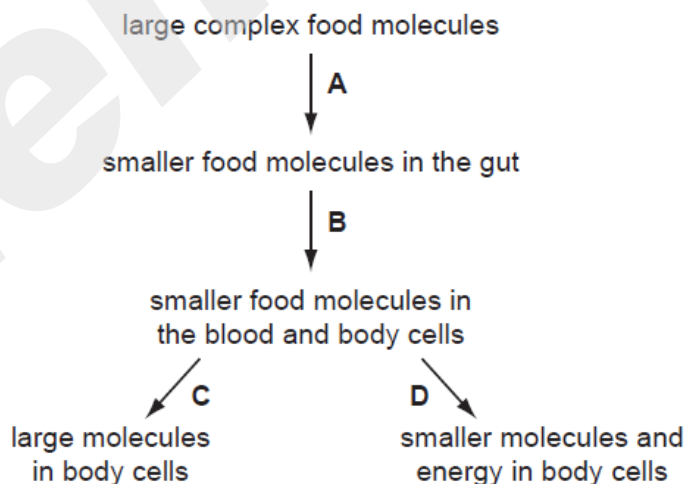
20 An athlete produces lactic acid in the leg muscles while running a race. After the race he is seen to breathe faster and deeper.

How does this help to remove the lactic acid?

- A More carbon dioxide is used up.
- B More energy is needed.
- C More lactic acid is breathed out.
- D More oxygen is breathed in.

21 The flow diagram shows what happens to food in humans.

Which stage shows human respiration?



May/June 2008

20 Which products of anaerobic respiration are important for making beer and bread?

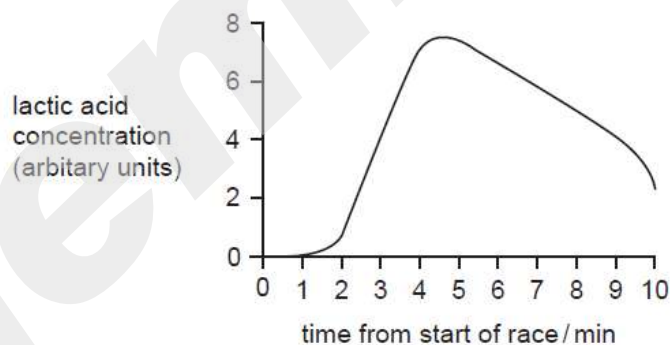
	beer	bread
A	carbon dioxide	simple sugar
B	ethanol	carbon dioxide
C	lactic acid	ethanol
D	simple sugar	lactic acid

Oct/Nov 2008

19 What is the role of anaerobic respiration in bread-making?

- A** to produce alcohol to flavour the bread
- B** to produce gas to make the bread rise
- C** to release enough energy to bake the bread
- D** to release enough lactic acid to kill the yeast

21 An athlete runs a race. The graph shows how the concentration of lactic acid in his leg muscles changes.



For how long did the athlete run?

- A** 2 minutes
- B** 4 minutes
- C** 6 minutes
- D** 10 minutes

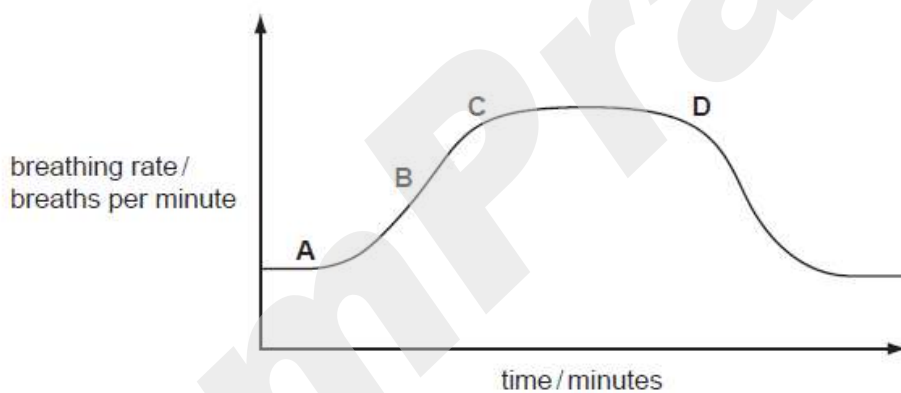
May/June 2009

19 Which substances are formed during anaerobic respiration in animals and yeast?

	animals	yeast
A	alcohol	alcohol and lactic acid
B	alcohol and carbon dioxide	alcohol
C	lactic acid	alcohol and carbon dioxide
D	lactic acid and water	lactic acid

Oct/Nov 2009

18 From the graph, when did the person begin a period of vigorous exercise after resting?

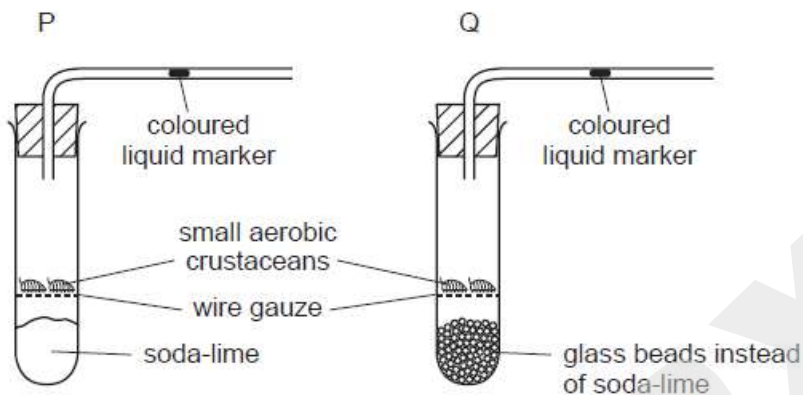


19 Which word equation represents anaerobic respiration in human muscle?

- A** glucose → carbon dioxide + ethanol (alcohol)
- B** glucose → carbon dioxide + lactic acid
- C** glucose → ethanol (alcohol)
- D** glucose → lactic acid

20 The diagram shows two experiments on the gaseous exchange in small aerobic crustaceans.

Soda-lime absorbs carbon dioxide.



Which way does the liquid marker move?

	P	Q
A	left	right
B	left	stays still
C	right	left
D	right	stays still

May/June 2010(11)

19 The table shows some of the features of respiration.

Which row is correct for anaerobic respiration?

	energy remaining in products	amount of energy released	chemical pathway	releases carbon dioxide
A	high	high	always the same	sometimes
B	high	low	different in different organisms	sometimes
C	low	high	different in different organisms	always
D	low	low	always the same	always

20 Four words are shown below.

alcohol anaerobic sugar yeast

These words can be used in the spaces P, Q, R and S to complete the sentence below.

'In brewing and bread making, respiration takes place. The micro-organism calledP.....
usesQ..... as a source of food. The product of thisR..... respiration isS.....'

Which combination of words correctly completes the sentences?

	alcohol	anaerobic	sugar	yeast
A	P	Q	R	S
B	Q	P	S	R
C	R	S	Q	P
D	S	R	Q	P