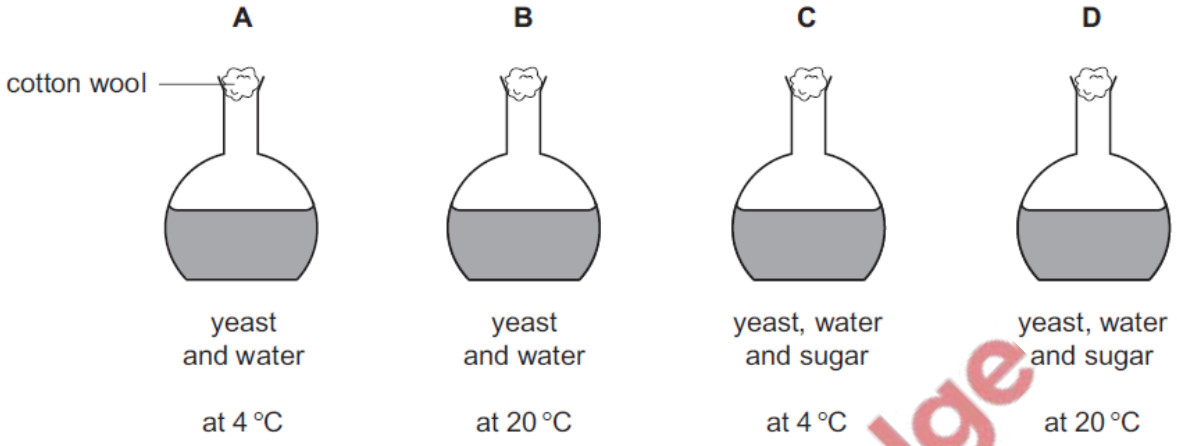
Respiration – 2020 IGCSE 0610

1. March/2020/Paper_12/No.23

Four flasks are sterilised and are set up as shown.

Which flask will contain the most alcohol after several hours?



2. March/2020/Paper_12/No.30

Which environmental factor is **not** always a requirement for seed germination?

A light

B oxygen

C suitable temperature

D water

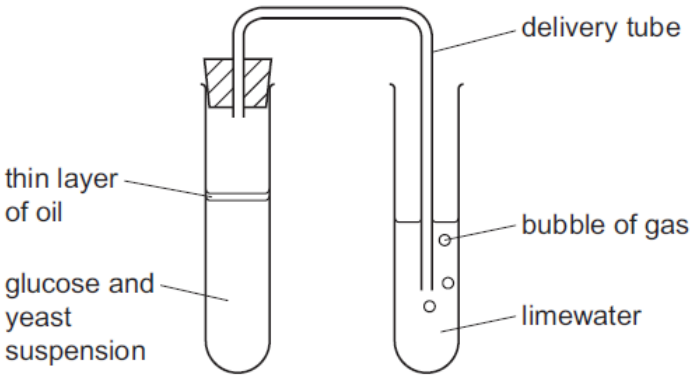
3. March/2020/Paper_22/No.24

How many molecules of ethanol are released from the anaerobic respiration of one molecule of glucose?

A 1 **B** 2 **C** 4 **D** 6

4. June/2020/Paper_11/No.19

The diagram shows an experiment to investigate the respiration of yeast. Oil prevents oxygen entering the glucose and yeast suspension.



If **no** oxygen is present in the glucose and yeast suspension, what will occur?

A Ethanol will be produced and the limewater will stay clear.

B Ethanol will be produced and the limewater will go cloudy.

C Lactic acid will be produced and the limewater will stay clear.

D Lactic acid will be produced and the limewater will go cloudy.

5. June/2020/Paper_11/No.37

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

6. June/2020/Paper_12/No.19

The substances listed are associated with aerobic respiration.

1 carbon dioxide

2 glucose

3 oxygen

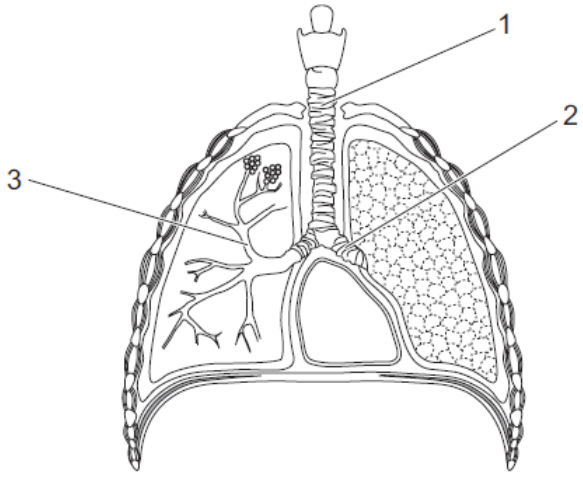
4 water

Which substances are the products of aerobic respiration?

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

7. June/2020/Paper_12/No.20

The diagram shows the breathing system.



What are the labelled structures?

	1	2	3
A	bronchus	bronchiole	trachea
B	bronchiole	bronchus	trachea
C	trachea	bronchus	bronchiole
D	trachea	diaphragm	bronchus

8. June/2020/Paper_12/No.27

Which conditions are always required for the germination of seeds?

	condition			
	light	oxygen	suitable temperature	water
A	✓	✓	✗	✓
B	✓	✗	✓	✗
C	✗	✓	✗	✓
D	✗	✓	✓	✓

key

✓ = required

✗ = not required

9. June/2020/Paper_12/No.37

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

10. June/2020/Paper_13/No.19

Which examples of respiration produce carbon dioxide?

	aerobic respiration in human muscles	anaerobic respiration in human muscles	anaerobic respiration in yeast
A	✓	✓	✗
B	✓	✗	✓
C	✗	✓	✓
D	✓	✓	✓

key

✓ = yes

✗ = no

11. June/2020/Paper_13/No.37

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

A to produce alcohol to flavour the bread

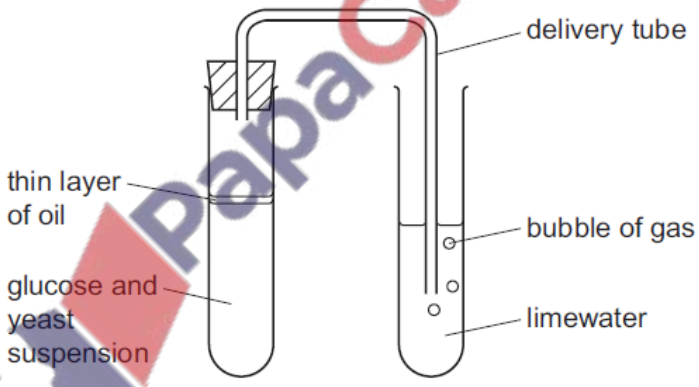
B to produce gas to make the bread rise

C to release enough energy to bake the bread

D to release enough lactic acid to kill the yeast

12. June/2020/Paper_21/No.21

The diagram shows an experiment to investigate the respiration of yeast. Oil prevents oxygen entering the glucose and yeast suspension.



If **no** oxygen is present in the glucose and yeast suspension, what will occur?

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B Ethanol will be produced and the limewater will go cloudy.

C Lactic acid will be produced and the limewater will stay clear.

D Lactic acid will be produced and the limewater will go cloudy.

13. June/2020/Paper_21/No.37

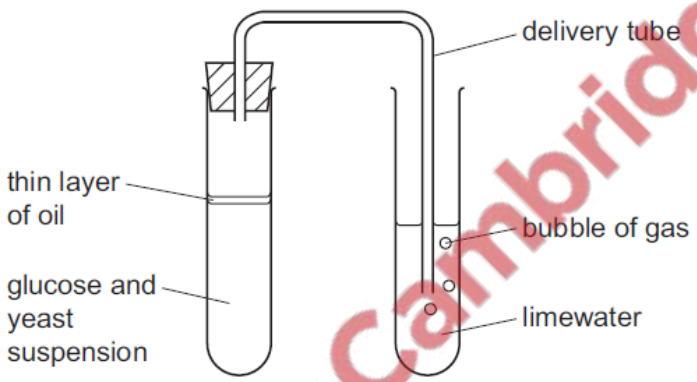
Which row correctly completes the balanced equation for aerobic respiration?

$$X + 6O_2 \rightarrow 6CO_2 + Y$$

	X	Y
A	$6C_6H_{12}O_6$	H_2O
B	$C_6H_{12}O_6$	$6H_2O$
C	$6H_2O$	$C_6H_{12}O_6$
D	$C_6H_{10}O_6$	$6H_2O$

14. June/2020/Paper_21/No.21

The diagram shows an experiment to investigate the respiration of yeast. Oil prevents oxygen entering the glucose and yeast suspension.



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15. June/2020/Paper_21/No.22

Which row correctly completes the balanced equation for aerobic respiration?

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	X	Y
A	$6C_6H_{12}O_6$	H_2O
B	$C_6H_{12}O_6$	$6H_2O$
C	$6H_2O$	$C_6H_{12}O_6$
D	$C_6H_{10}O_6$	$6H_2O$

16. June/2020/Paper_22/No.22

The formula C_2H_5OH represents a chemical produced during anaerobic respiration.

What is this chemical?

A alcohol

B glucose

C glycogen

D lactic acid

17. June/2020/Paper_23/No.21

The symbol equation for aerobic respiration is shown.

$$C_6H_xO_y + 6O_2 \rightarrow 6CO_z + 6H_2O$$

Which numbers represent the letters shown in the equation as x, y and z?

	x	y	z
A	2	12	6
B	6	2	12
C	6	12	2
D	12	6	2

18. June/2020/Paper_32/No.3

(a) A student investigated respiration in yeast. An equal mass of yeast was added to different types of sugar solution.

The student measured the volume of carbon dioxide released by the yeast using four different sugar solutions with the same concentrations.

The four different sugar solutions used were:

- dextrose
- lactose
- maltose
- sucrose.

Fig. 3.1 is a graph of the results.

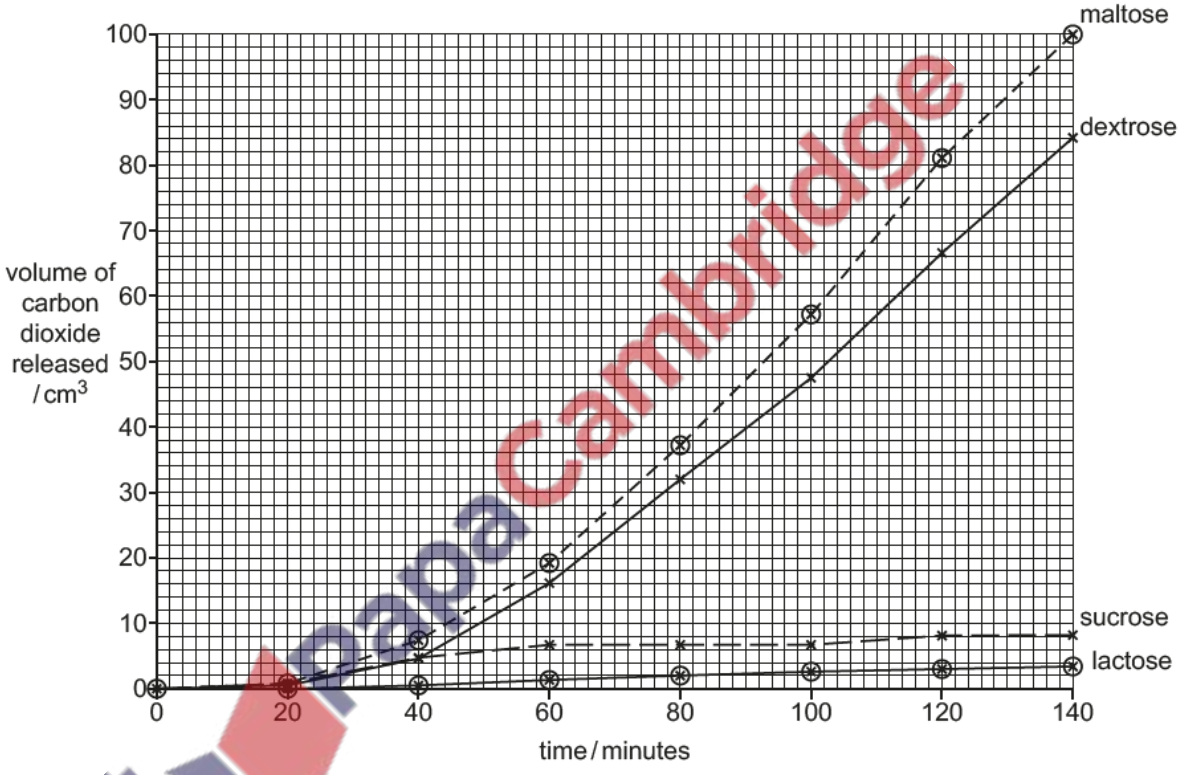

Fig. 3.1

(i) State the name of the sugar solution that produced the most carbon dioxide.

..... [1]

(ii) State the volume of carbon dioxide produced by yeast with the dextrose solution at 80 minutes.

..... cm^3 [1]

(b) The temperature during the investigation was maintained at 20 °C.

Predict the effect on the volume of carbon dioxide produced if the investigation was repeated at 30 °C.

.....

.....

..... [1]

(c) State **two** ways humans use anaerobic respiration in yeast to make useful products.

1 .....

2 .....

[2]

(d) Describe the similarities **and** differences between **anaerobic** respiration in yeast and **aerobic** respiration in humans.

similarities .....

.....

.....

.....

.....

differences .....

.....

.....

.....

.....

[4]

(e) State the word equation for **anaerobic** respiration in humans.

..... [2]

[Total: 11]