GRADE 8
REVISION 2
CHAPTER
RESPIRATION & GAS EXCHANGE
MCQS

RESPIRATION MCQS

1 What is produced by anaerobic respiration in yeast?

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

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

A carbon dioxide + water → glucose + oxygen

B glucose + carbon dioxide → water + oxygen

✓ **C** glucose + oxygen → carbon dioxide + water

D glucose + water → carbon dioxide + oxygen

4 During aerobic respiration glucose is broken down.

What is released in this process?

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

5 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

6 Which description of anaerobic respiration in yeast is correct?

	it produces alcohol	it releases more energy than aerobic respiration
A	no	no
B	no	yes
C	yes	no
D	yes	yes

7 What is produced by yeast during anaerobic respiration?

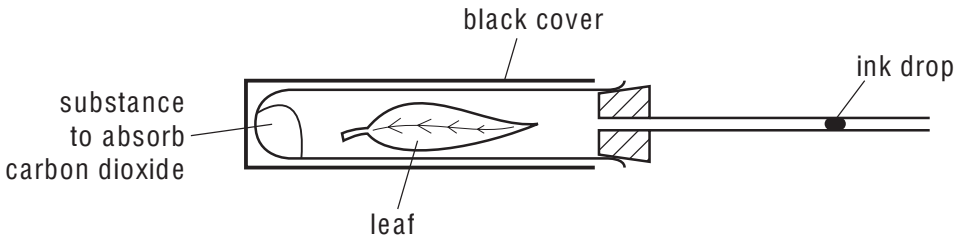
A carbon dioxide and water

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?

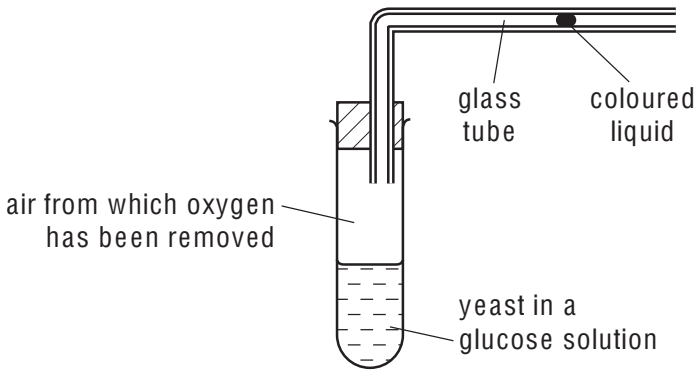
A ✓ aerobic respiration

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 → glucose + oxygen

2 glucose → alcohol + carbon dioxide

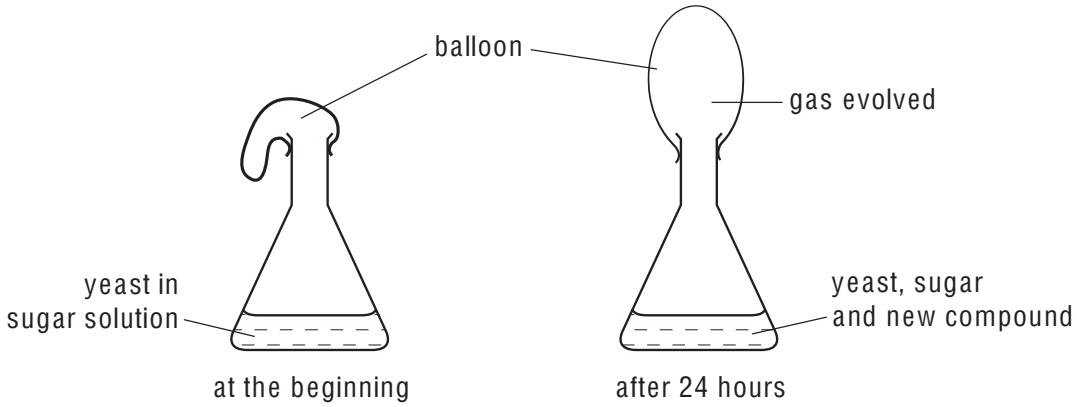
3 glucose → lactic acid

4 glucose + oxygen → 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

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	✓	✗
C	✗	✓
D	✗	✗

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 ✓

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

21 What contains the greatest concentration of lactic acid?

A a bottle of alcoholic drink

B a loaf of freshly baked bread

C muscle cells during vigorous exercise

D yeast cells kept in glucose at 70 °C for 30 minutes

22 Which process uses the greatest amount of energy?

A gaseous diffusion

B protein synthesis

C respiration

D starch digestion

23 Which chemical could be used to show that cells are respiring aerobically?

A Benedict's solution

B dilute sulfuric acid

C ethanol

D limewater

24 When does respiration take place in animals and plants?

	animals	plants
A	all the time	all the time
B	all the time	night time only
C	day time only	day time only
D	day time only	night time only

26 What is produced by anaerobic respiration in a muscle?

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

key

✓ = produced

✗ = not produced

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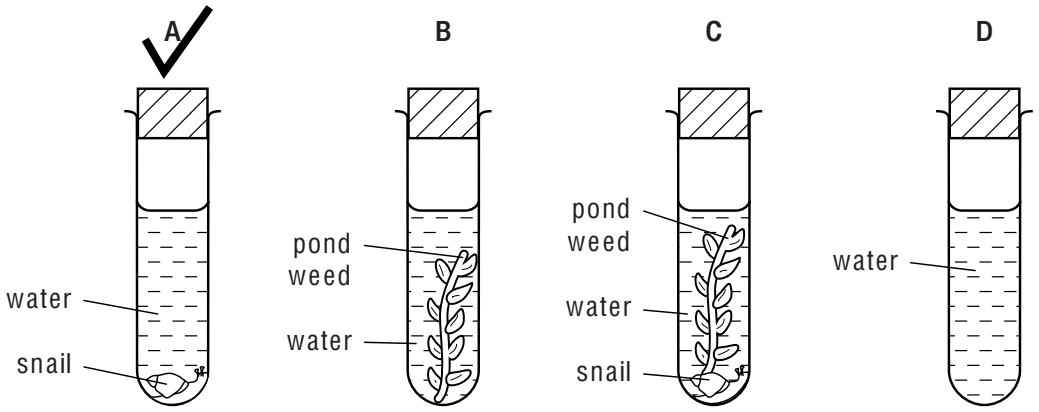
27 Four test-tubes were set up as shown in the diagram and left in full sunlight.

After several hours, which test-tube would contain the most dissolved carbon dioxide?



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28 Which process depends on energy from respiration?

A diffusion

B osmosis

C peristalsis

D photosynthesis

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29 Which process, inside cells, releases energy useful to the human body?

A digestion

B excretion

C mitosis

✓ **D** respiration

30 How are aerobic and anaerobic respiration similar?

✓ **A** Both involve breaking down glucose.

B Both need a low concentration of oxygen.

C In muscles, both produce carbon dioxide.

D In yeast, both produce alcohol.

GAS EXCHNAGE MCQS

6 What helps oxygen to be absorbed rapidly into the blood in the lungs?

A Air breathed in has less oxygen than air breathed out.

B Alveoli have thick walls and a large surface area.

✓ **C** Alveoli have thin walls and a large surface area.

D The concentration of oxygen in the blood is higher than in the alveoli.

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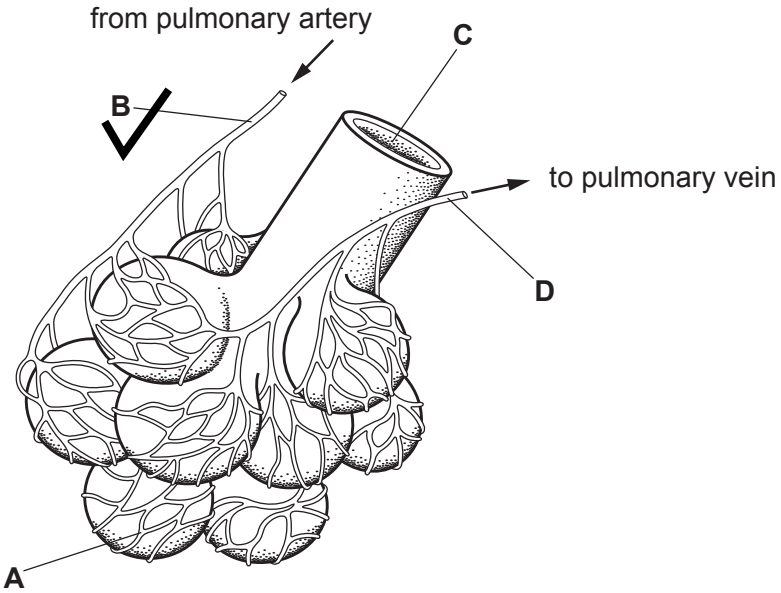
8 The diagram shows some of the structures in a human lung.

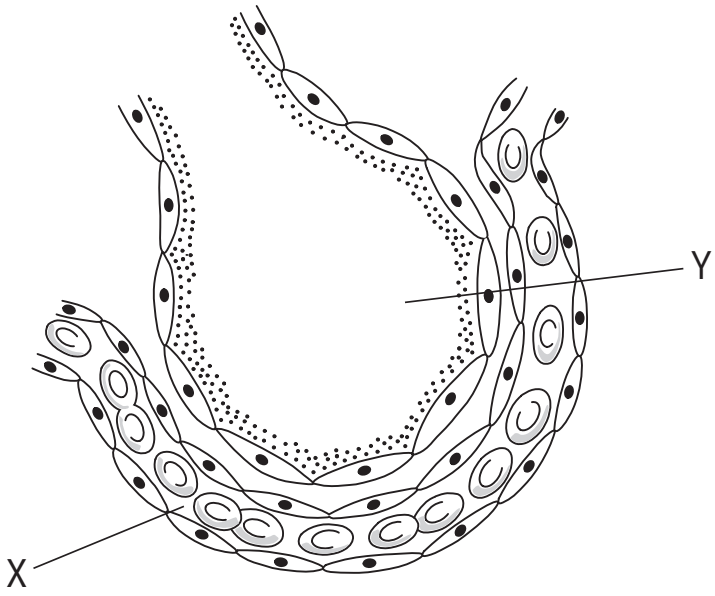
Where is the carbon dioxide concentration highest?



11 What makes alveoli suitable as a gas exchange surface?

	large total surface area	well-supplied with blood vessels
A	✓	✓
B	✓	✗
C	✗	✓
D	✗	✗

14 The diagram shows a section through an alveolus and a capillary.



Why does carbon dioxide move from X to Y?

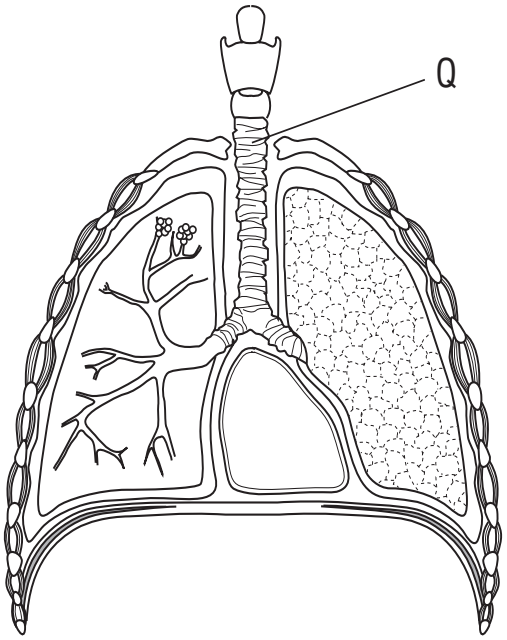
A Air has a lower concentration of carbon dioxide than blood. ✓

B Carbon dioxide moves more freely in air than in blood.

C Carbon dioxide must replace oxygen.

D Diffusion of carbon dioxide can only be out of the blood.

15 The diagram shows some structures in the human neck and thorax.



The lining of tube Q has cilia.

What is an important function of the cilia?

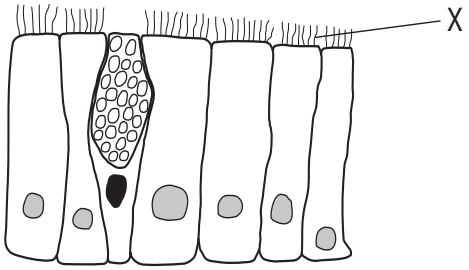
A to help in the exchange of gases

B to increase the internal surface area of tube Q

C to moisten the air entering and leaving the lungs

D to move mucus towards the throat

16 The diagram shows some ciliated cells from the trachea.



What is the function of the parts labelled X?

A detecting stimuli

B exchanging gases

C moving mucus

D trapping bacteria

17 What are the functions of the diaphragm and the cilia in the human gas exchange system?

	diaphragm	cilia
A	contracts to cause breathing in	carry mucus to the throat
B	contracts to cause breathing out	trap bacteria from the air
C	relaxes to cause breathing in	filter dust from the air
D	relaxes to cause breathing out	produce mucus

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23 What are the properties of an efficient gas exchange system, assuming it has a good blood supply?

A large surface and thick walls

B large surface and thin walls

C small surface and thick walls

D small surface and thin walls

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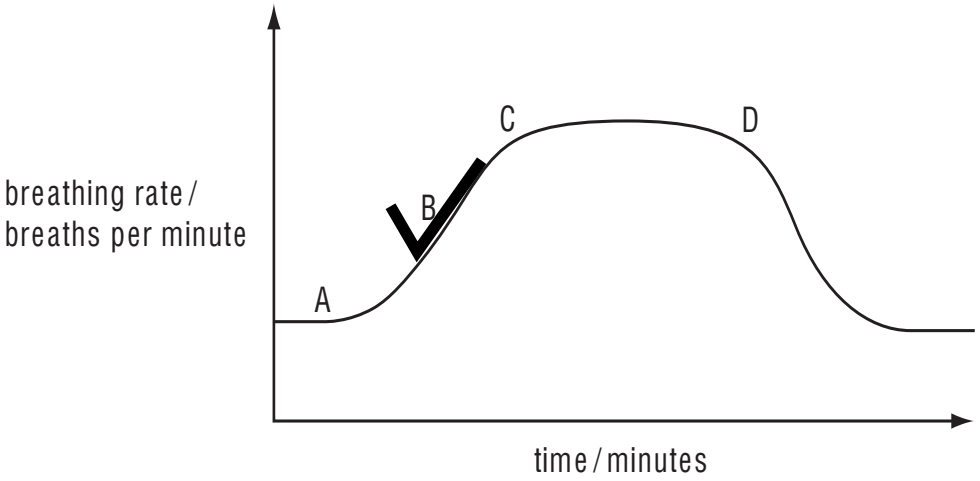
24 The diagram shows someone blowing up a balloon.

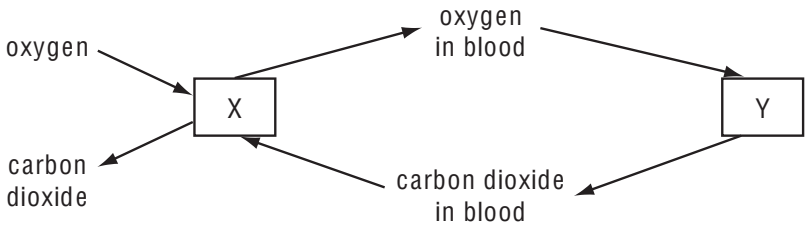
What percentage of the gas in the balloon is carbon dioxide?

A 0.04 % **B** 0.4 % **C** 4.0 % **D** 40 %

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



28 The diagram represents the exchange of gases during breathing and during respiration in the body.



What is represented by X and by Y?

	X	Y
A	lungs	air
B	lungs	body cells
C	body cells	air
D	body cells	lungs

30 Which route is taken by air passing into the lungs of a human?

A alveolus → trachea → bronchus

B bronchus → trachea → alveolus

C trachea → alveolus → bronchus

D ✓ trachea → bronchus → alveolus

31 What are features of gaseous exchange surfaces in animals?

A thick-walled, dry, large area

B thick-walled, moist, small area

C thin-walled, dry, small area

D ✓ thin-walled, moist, large area

32 Which features are present in gaseous exchange surfaces?

	large surface area	moist	thick walls
A ✓	✓	✓	✗
B	✓	✗	✓
C	✗	✓	✓
D	✓	✓	✓

key

✓ = present

✗ = not preser