

**Human gas exchange – 2021 O Level 5090**

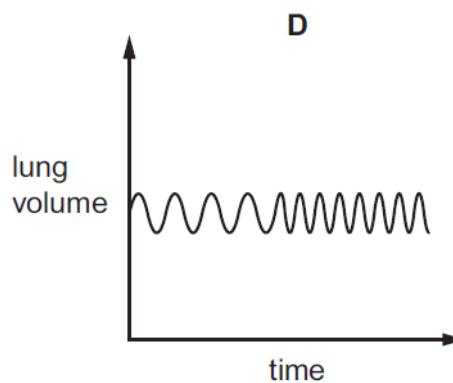
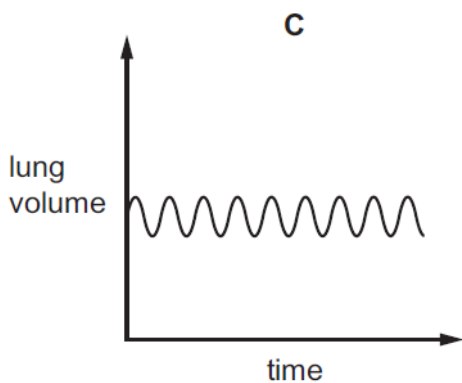
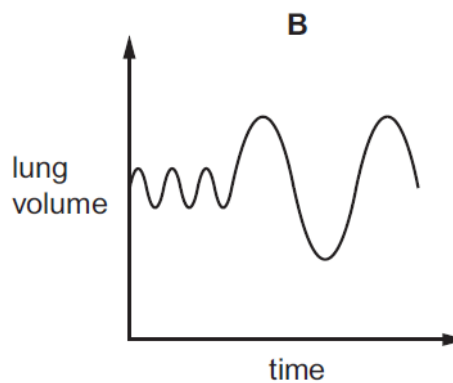
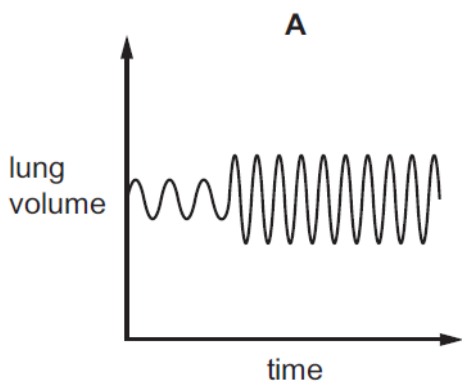
1. **Nov/2021/Paper\_11/No.17**

What are features of the alveoli?

	lined by cilia	lined with moisture	walls are one cell thick	
<b>A</b>	✓	x	✓	key ✓ = yes x = no
<b>B</b>	x	✓	x	
<b>C</b>	✓	x	x	
<b>D</b>	x	✓	✓	

2. **Nov/2021/Paper\_11/No.18**

Which graph shows a person's breathing when at rest and then exercising?



## 3. Nov/2021/Paper\_12/No.17

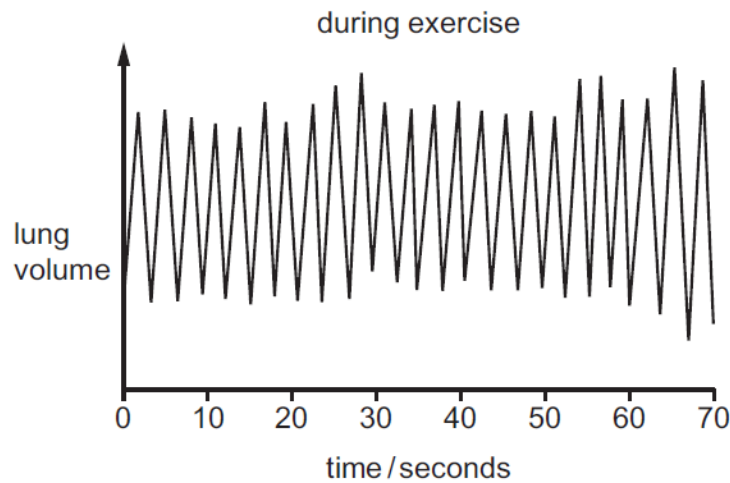
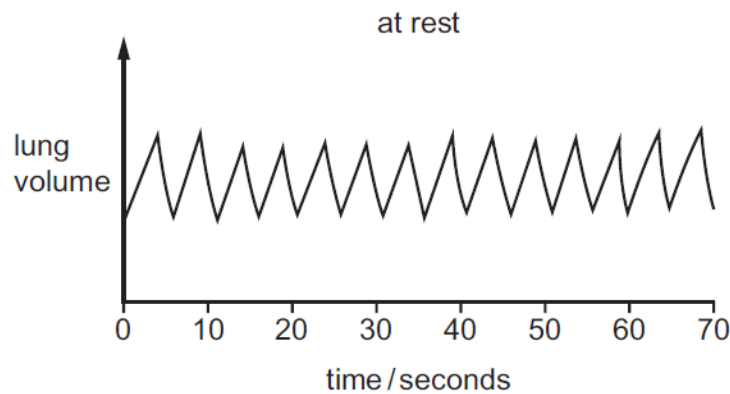
Which statements about gaseous exchange in the alveoli are correct?

- 1 The alveolus wall is one cell thick.
- 2 Carbon dioxide can diffuse through the alveolus wall.
- 3 Oxygen dissolves in moisture on the surface of the alveolus before diffusing into the blood.

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

## 4. Nov/2021/Paper\_12/No.18

The graphs show records of a person's breathing at rest and during exercise.

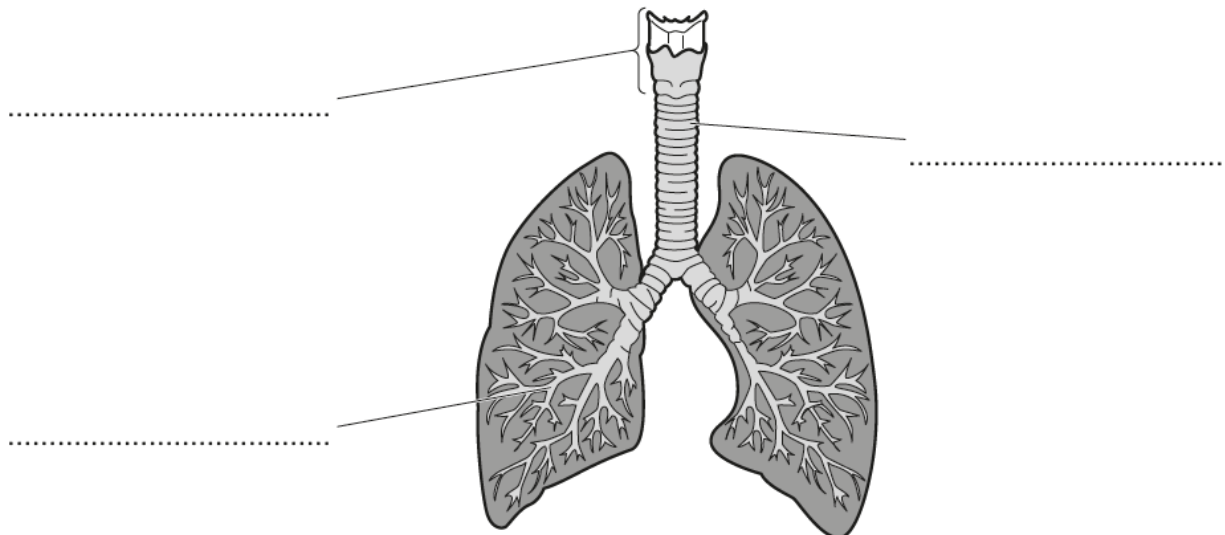


What is the increase in breathing rate when the person is at rest and then exercises?

- A** 9 breaths per minute
- B** 12 breaths per minute
- C** 21 breaths per minute
- D** 60 breaths per minute

5. Nov/2021/Paper\_21/No.1

The diagram shows the human lungs and associated structures.



(a) Complete the diagram by naming the labelled parts. [3]

(b) Explain why a human needs lungs.

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..... [3]

[Total: 6]

6. Jun/2021/Paper\_11/No.18

Why does oxygen enter the blood in the lungs?

- A Aerobic respiration takes place in the lungs.
- B Carbon dioxide diffuses out of the blood into the alveoli.
- C The air in alveoli contains a higher concentration of oxygen than the blood in the lung capillaries.
- D The air in alveoli contains a lower concentration of oxygen than the blood in the lung capillaries.

**7. Jun/2021/Paper\_12/No.18**

During exercise, a person breathes more deeply and more frequently.

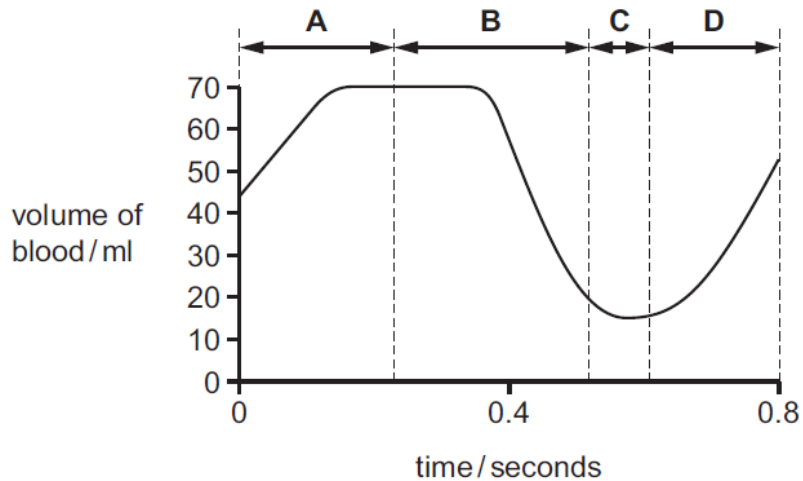
Which is a result of this?

- A** Carbon dioxide is removed more rapidly.
- B** Heat loss is decreased.
- C** Less glucose is delivered to the working muscles.
- D** Less oxygen diffuses into the blood.

**8. Jun/2021/Paper\_12/No.14**

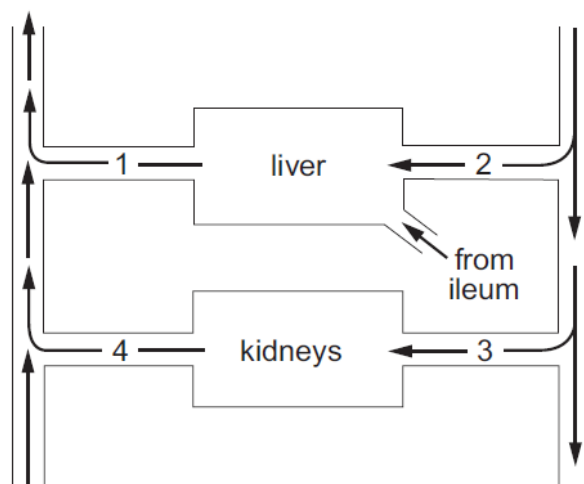
The diagram shows how the volume of blood in the left ventricle of a human heart changes during one heart beat.

When is the left ventricle contracting?



9. Jun/2021/Paper\_12/No.15

The diagram represents the blood supply to the liver and to the kidneys.



Which vessels contain blood with the highest and lowest concentrations of urea?

	highest	lowest
<b>A</b>	1	2
<b>B</b>	1	4
<b>C</b>	3	2
<b>D</b>	3	4

10. Jun/2021/Paper\_21/No.9

(a) Describe how air is breathed in, using the rib cage and diaphragm, so that it reaches the alveoli.

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..... [5]

(b) Bronchitis is a condition that can be triggered by breathing in substances that cause the bronchi to become inflamed and produce a large amount of mucus.

Suggest how this condition can affect a person and explain how a person may be able to avoid developing the condition.

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..... [5]

[Total: 10]