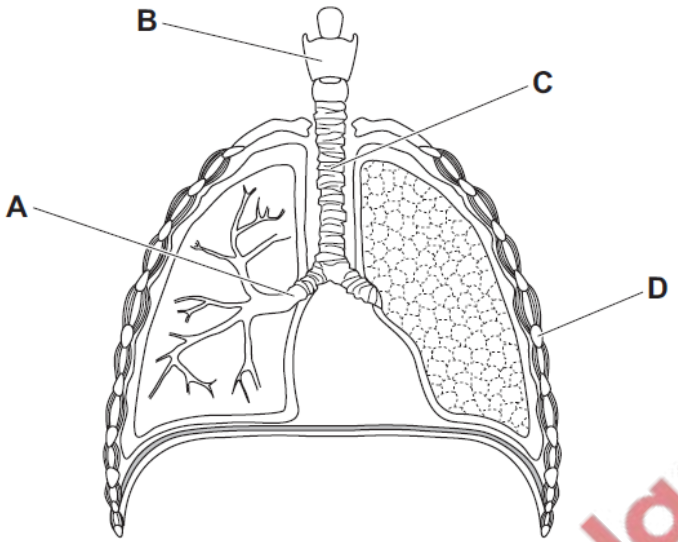
Gas exchange in humans – 2021 IGCSE 0610

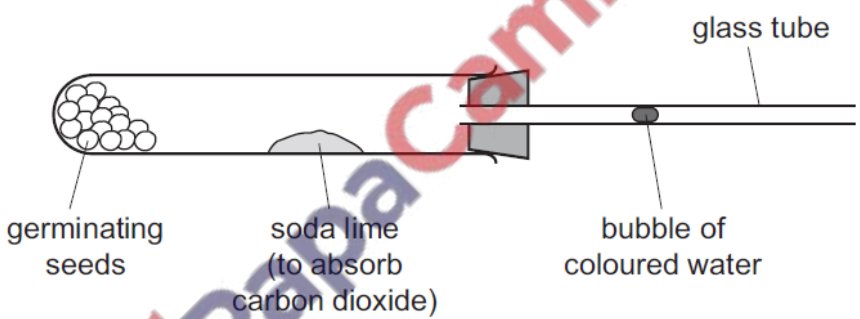
1. Nov/2021/Paper_11/No.22

Which structure is a bronchus?



2. Nov/2021/Paper_12/No.22

The diagram shows the apparatus used to measure the rate of respiration in germinating seeds. As the seeds respire, the bubble of coloured water moves along the glass tube.



The temperature is increased from 20 °C to 40 °C.

What happens to the movement of the bubble as the temperature increases?

A The bubble moves more quickly towards the seeds at 40 °C than at 20 °C.

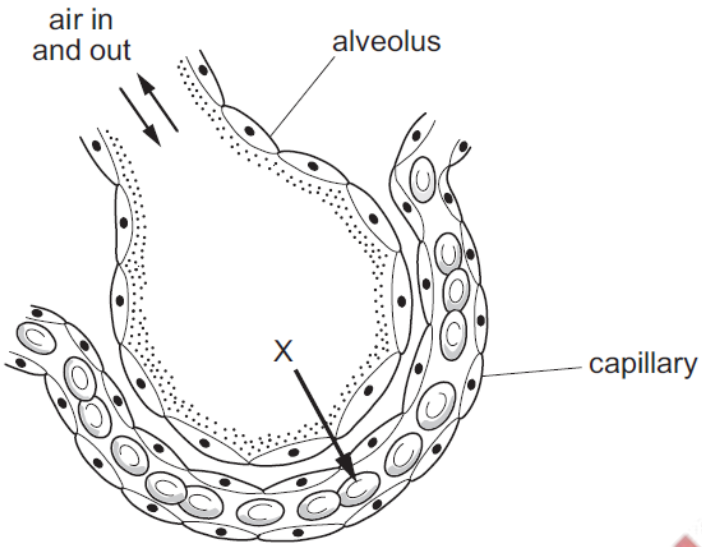
B The bubble moves more quickly away from the seeds at 40 °C than at 20 °C.

C The bubble moves more quickly towards the seeds at 20 °C than at 40 °C.

D The bubble moves more quickly away from the seeds at 20 °C than at 40 °C.

3. Nov/2021/Paper_13/No.22

The diagram shows an alveolus.



Which gas is represented by the pathway shown by arrow X?

A air

B carbon dioxide

C oxygen

D water vapour

4. Nov/2021/Paper_21/No.20

What causes the air pressure in the lungs to decrease during breathing in?

A contraction of the external intercostal muscles and diaphragm

B expansion of the lungs causing a decrease in the volume of the alveoli

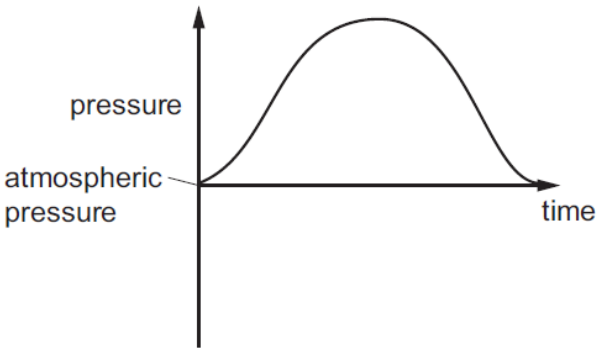
C outward movement of the ribs and upward movement of the diaphragm

D higher pressure in the atmosphere than in the lungs causing the alveoli to expand

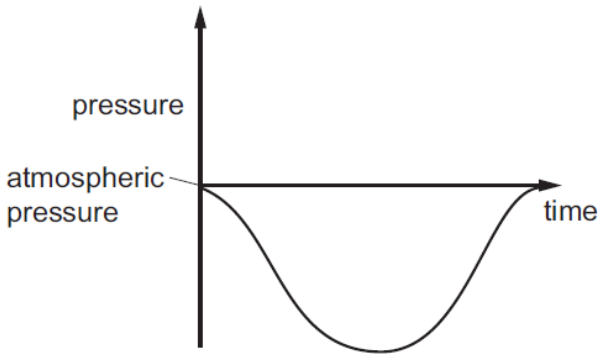
5. Nov/2021/Paper_22/No.20

Which graph shows how the pressure inside the lungs changes when taking one breath in?

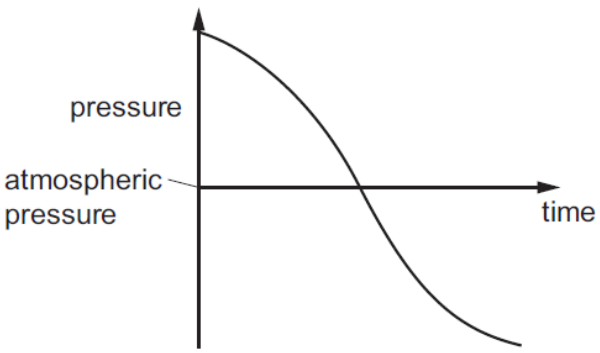
A



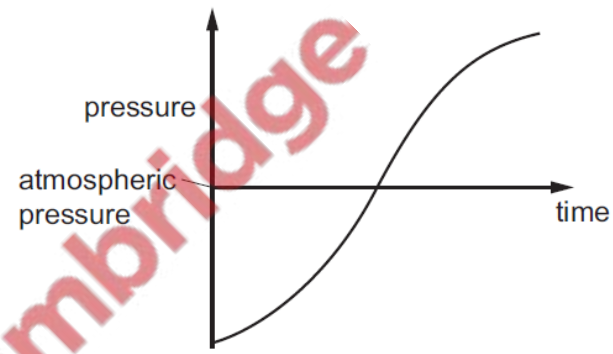
B



C



D



6. Nov/2021/Paper_23/No.20

Which row shows what happens at the start of inspiration?

	external intercostal muscles contract	internal intercostal muscles contract	diaphragm contracts	volume of thorax increases	air pressure in thorax increases
A	✓	✗	✓	✓	✗
B	✓	✗	✓	✗	✓
C	✗	✓	✗	✓	✗
D	✗	✓	✗	✗	✓

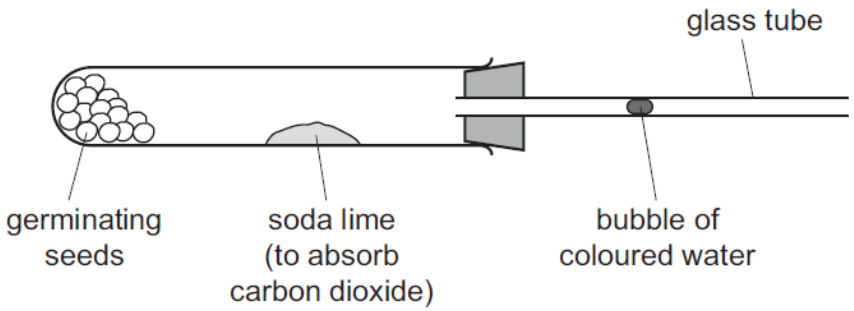
key

✓ = yes

✗ = no

7. Nov/2021/Paper_23/No.22

The diagram shows the apparatus used to measure the rate of respiration in germinating seeds. As the seeds respire, the bubble of coloured water moves along the glass tube.



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8. Nov/2021/Paper_32/No.2

(a) Table 2.1 shows the breathing rate of different organisms.

Table 2.1

name of organism	breathing rate /average number of breaths per minute
buffalo	17
camel	8
cat	20
chicken	18
elephant	12
goat	21
horse	10
human	16
sheep	20

(i) State the name of the organism with the lowest breathing rate.

..... [1]

(ii) State the name of **two** organisms with the same breathing rate.

..... and ..... [1]

(iii) State the name of the organism with the most **similar** breathing rate to humans.

..... [1]

(b) A person goes from resting to exercising.

Describe how their breathing changes.

.....

.....

.....

.....

..... [2]

(c) There is more carbon dioxide in expired air than in inspired air.

(i) State **two other** ways the composition of expired air is different from inspired air.

1 .....

.....

2 .....

.....

[2]

(ii) State the chemical used to test for the presence of carbon dioxide gas and the positive test result.

chemical .....

positive test result .....

[2]

(d) Fig. 2.1 is a diagram of the human gas exchange system.

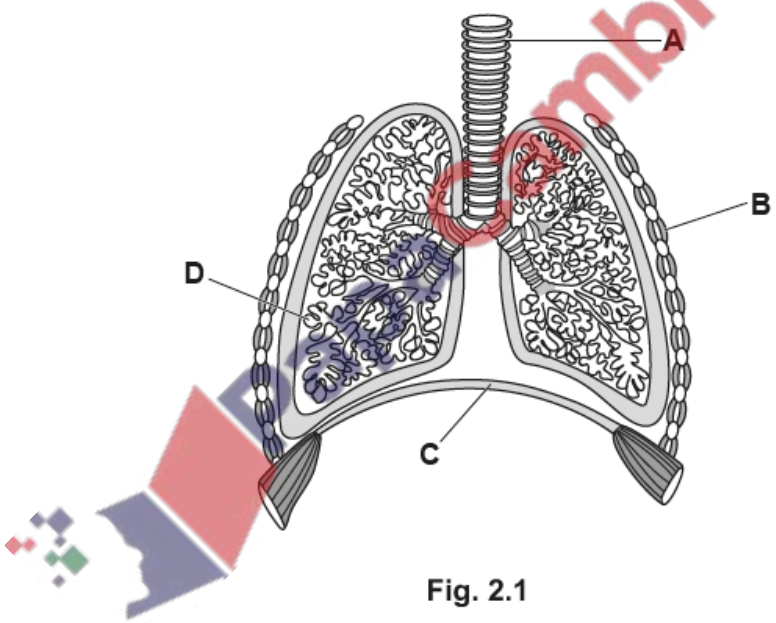

Fig. 2.1

Identify the parts labelled **A**, **B**, **C** and **D** in Fig. 2.1.

A .....

B .....

C .....

D .....

[4]

[Total: 13]