

Revision Sheet

IGCSE Biology · Unit 11 Gas exchange in humans

6 vocabulary items · 31 marks of exam questions (5 questions)

Part 1 · Vocabulary review (6 items). The terms this unit is examined on most. Mark it yourself from the answer key.

Section A · Chinese to English

Write the English word.

1.

[1]
2.

[1]
3.

[1]
4.

[1]
5.

[1]
6.

[1]

Part 2 · Exam questions (31 marks, 5 questions) begins on the next page. They are ordered easy to difficult and none of them has been set before.

7 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

8 These changes occur in the human body during exercise.

- 1

breathing rate increases
- 2

the rate of respiration increases
- 3

nerve impulses sent from the brain to the intercostal muscles and diaphragm
- 4

receptors in the brain detect increased concentration of carbon dioxide in the blood

What is the correct order for these changes?

- A 1 → 2 → 4 → 3
- B 1 → 3 → 4 → 2
- C 2 → 1 → 4 → 3
- D 2 → 4 → 3 → 1

9 (a) Complete the sentences about the features of the human gas exchange system.

Gas exchange surfaces have a surface area.

The distance across the gas exchange surfaces is very

The gas exchange system has a blood supply and good with air.

[4]

(b) Fig. 5.1 shows part of the gas exchange system in the lungs of a human.

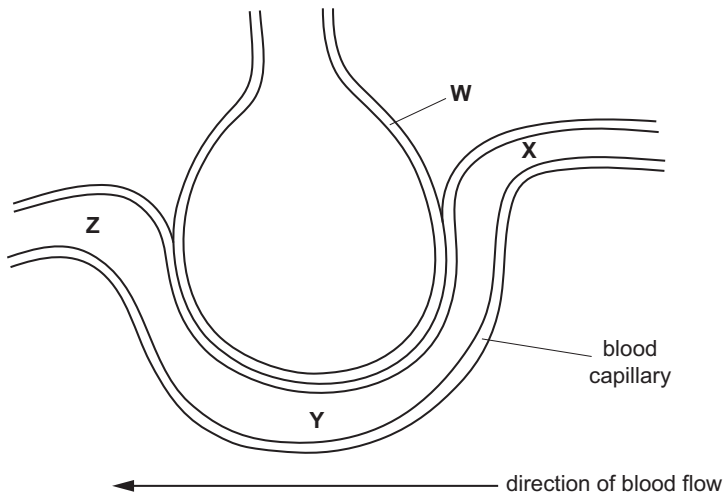


Fig. 5.1

- (i) State the name of structure **W** in Fig. 5.1.
- [1]
- (ii) State the letter in Fig. 5.1 that shows where the concentration of:
- carbon dioxide in the blood is highest
 - oxygen in the blood is highest
- [2]
- (iii) State the name of the process where molecules move down a concentration gradient.
- [1]
- [Total: 8]

10 (a) Fig. 5.1 is a diagram of the human gas exchange system.

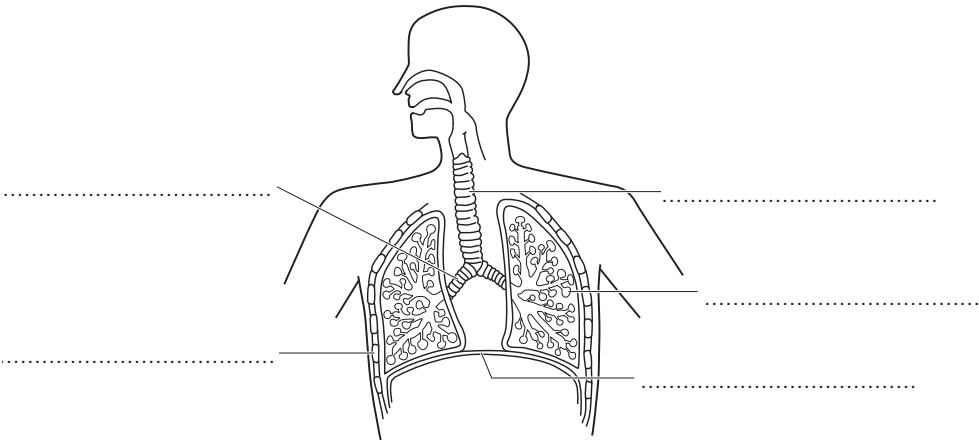


Fig. 5.1

The list shows the names of some of the parts of the human gas exchange system.

- | | | | |
|----------|------------|----------|-----------|
| alveolus | bronchiole | bronchus | diaphragm |
| | larynx | rib | trachea |

Use the words from the list to label Fig. 5.1.

You do not need to use every word.

Write your answers on the answer lines provided in Fig. 5.1. [5]

- (b) State the name of the part of the body through which air enters and leaves.
- [1]
- (c) Complete the sentences about the differences between inspired and expired air.
- Inspired air contains oxygen than expired air.
- Inspired air contains carbon dioxide than expired air.
- The concentration of water in inspired and expired air varies.
- [3]
- (d) Carbon dioxide is one of the components of inspired and expired air.
- State the name of the chemical used to test for the presence of carbon dioxide.
- [1]

11 Fig. 5.1 is a diagram of the breathing system in humans.

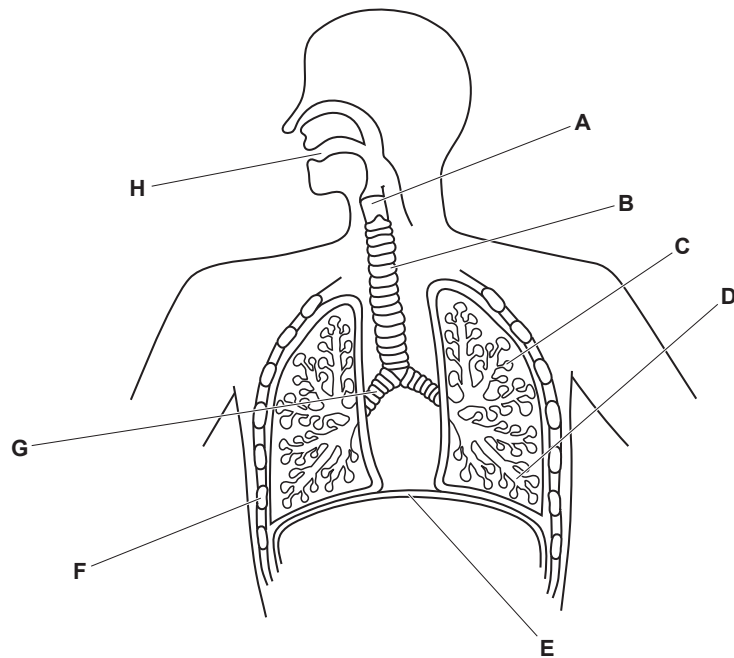


Fig. 5.1

(a) State the names of the parts labelled **A**, **D** and **E** in Fig. 5.1.

A

D

E [3]

(b) Part **B** in Fig. 5.1 contains specialised cells that move mucus.

State the name of these specialised cells.

..... [1]

(c) State the letter of a part shown in Fig. 5.1 that also has a role in digestion and name **one** type of digestion that occurs here.

letter

type of digestion

[2]

(d) The alveoli are the gas exchange surface.

Scientists estimated the total alveolar surface area in seven different species.

The results are shown in Fig. 5.2.

Species **A** to **G** are placed in order of body size from smallest (**A**) to largest (**G**).

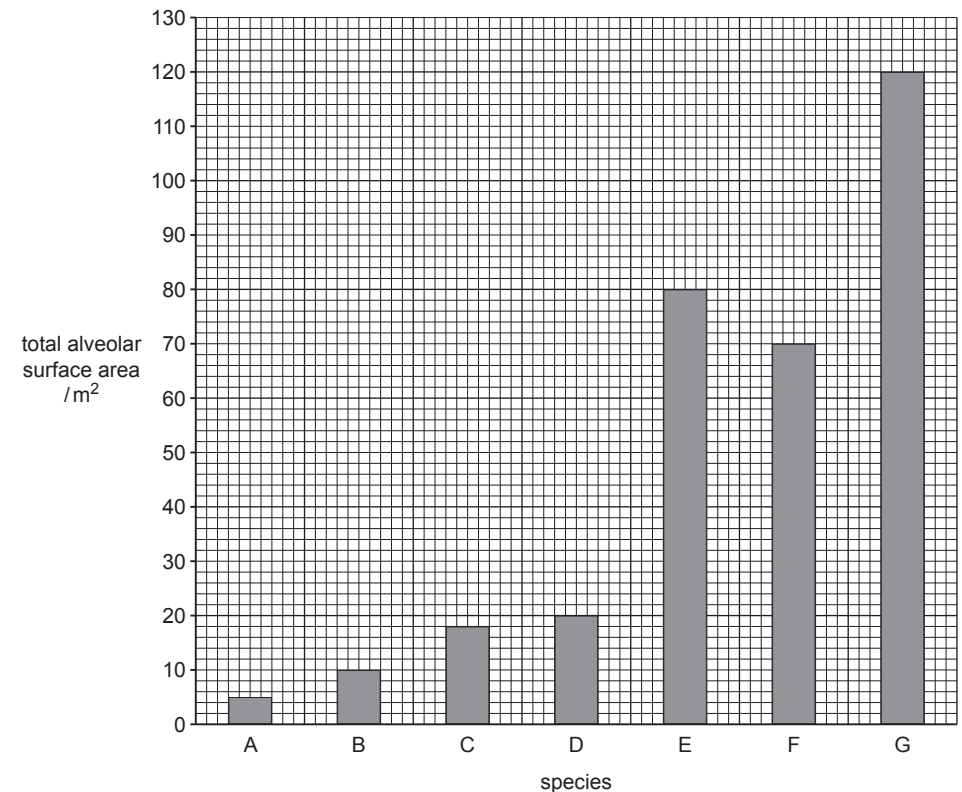


Fig. 5.2

A student made this statement:

'The larger the species, the larger the total alveolar surface area.'

(i) State **one** piece of evidence from Fig. 5.2 that supports this statement **and one** piece of evidence that does **not** support this statement.

supports

does **not** support

[2]

(ii) Calculate the difference in total alveolar surface area between species **D** and **G** shown in Fig. 5.2.

..... m² [1]

(e) A large surface area is one feature of gas exchange surfaces in humans.

State **two** other features.

1

2

[2]

[Total: 11]