
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. | <hr/> | [1] |
| 2. | <hr/> | [1] |
| 3. | <hr/> | [1] |
| 4. | <hr/> | [1] |
| 5. | <hr/> | [1] |
| 6. | <hr/> | [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.

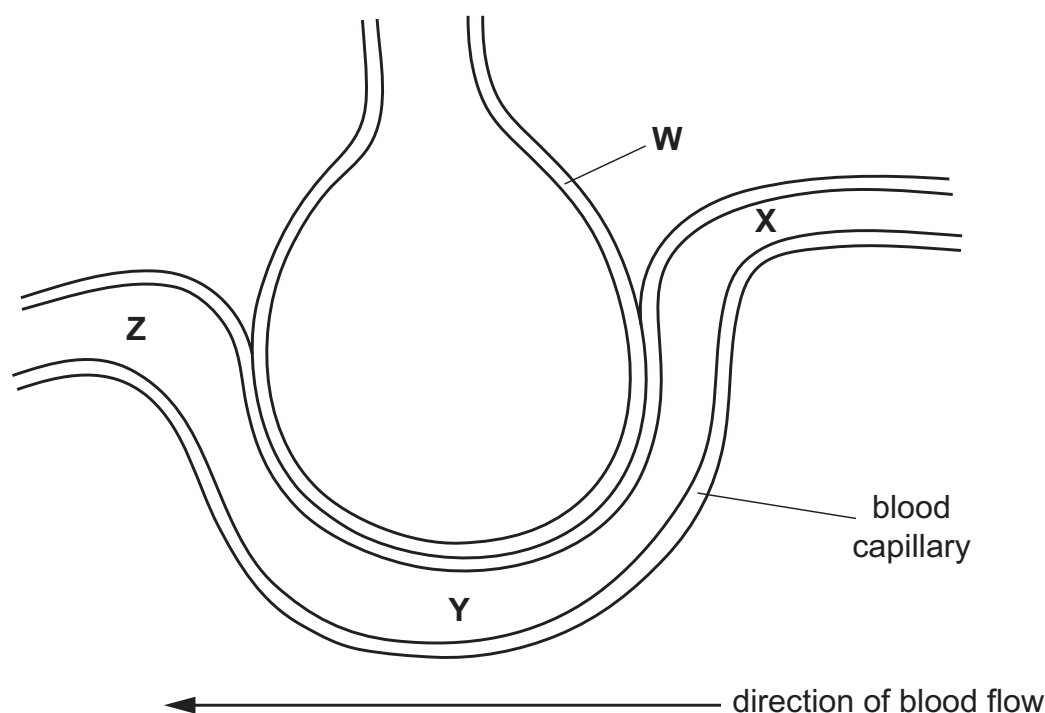


Fig. 5.1

- (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.

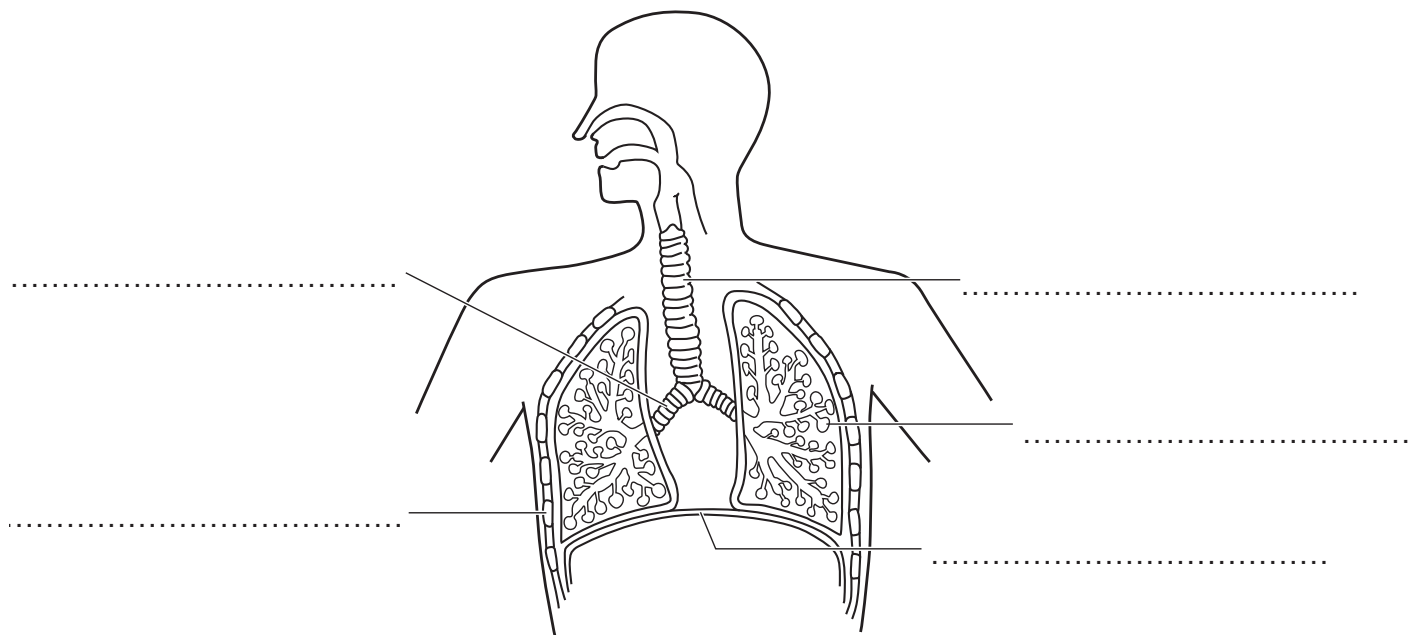


Fig. 5.1

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]

[Total: 10]

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

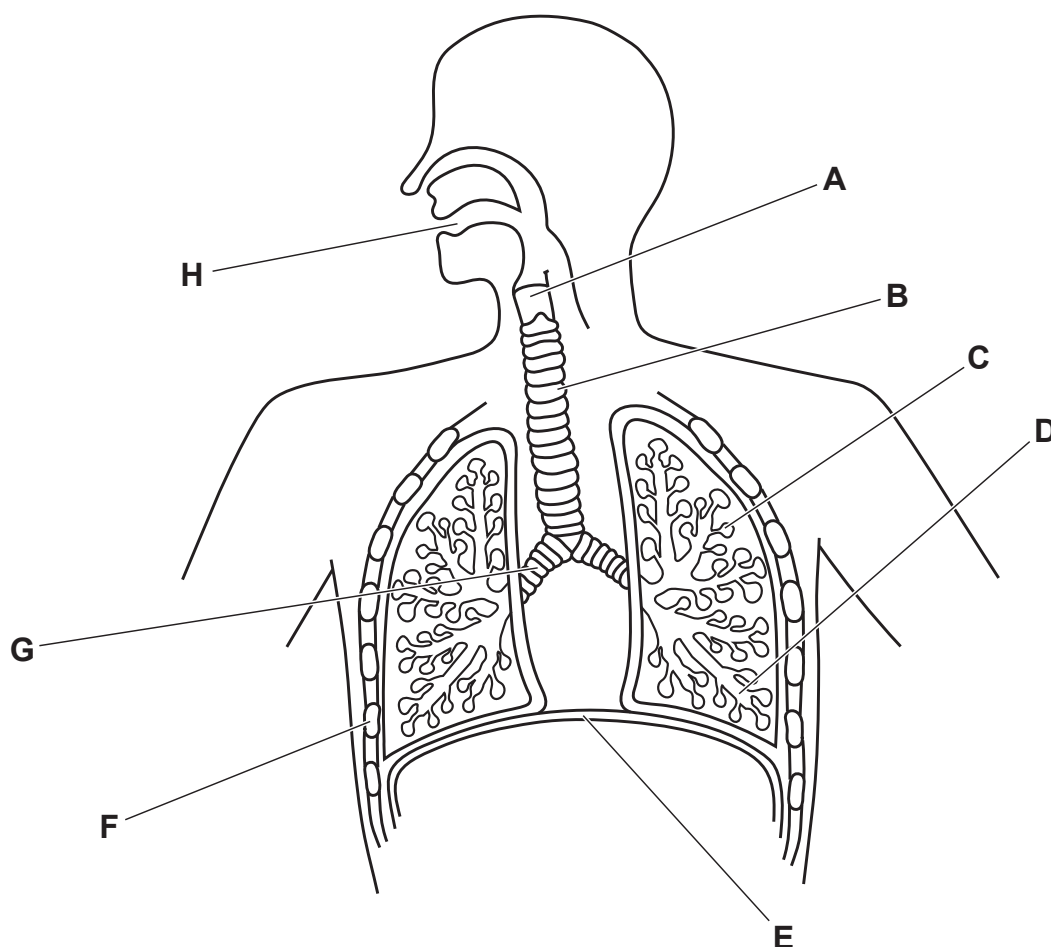


Fig. 5.1

(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**).

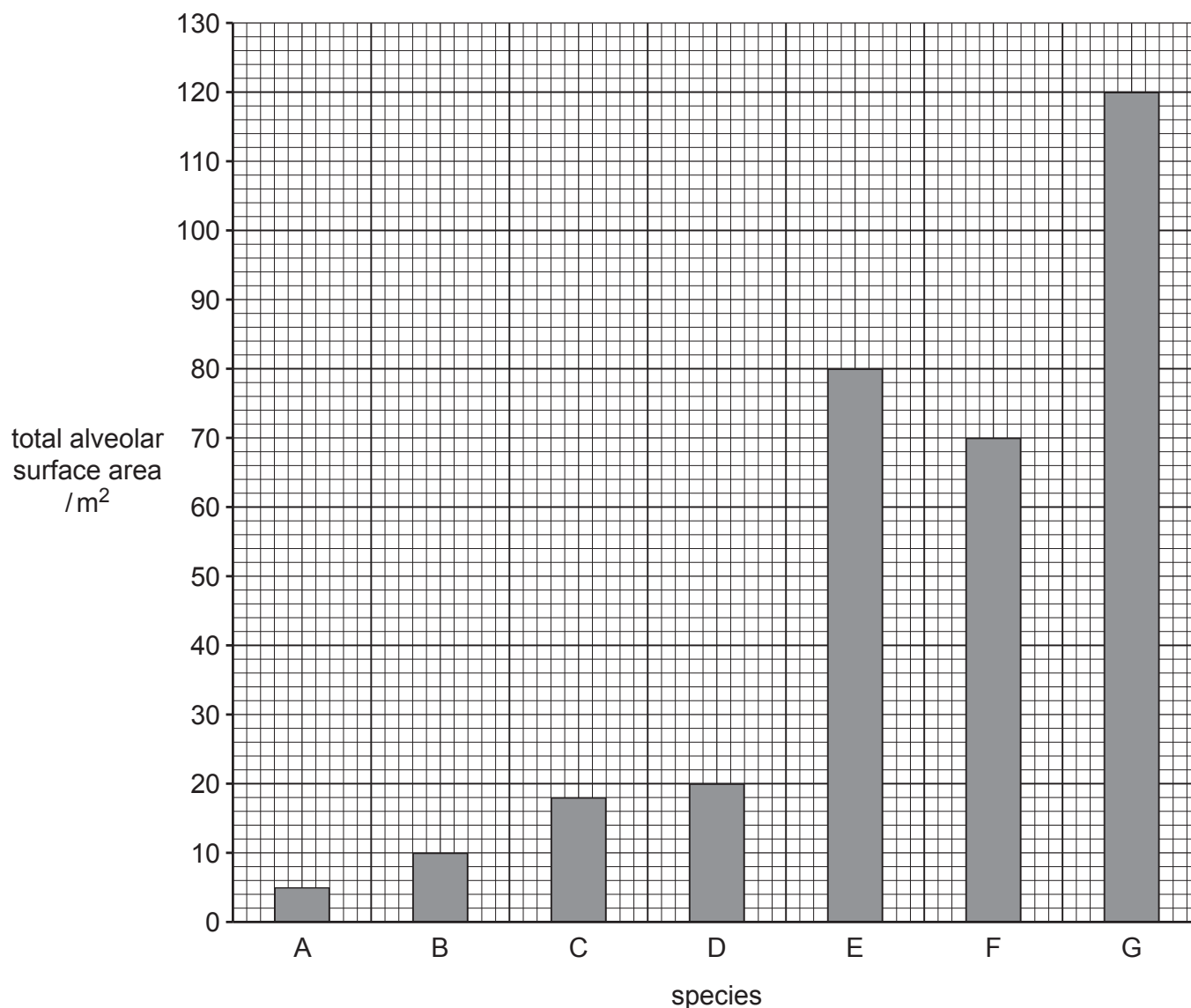


Fig. 5.2

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]