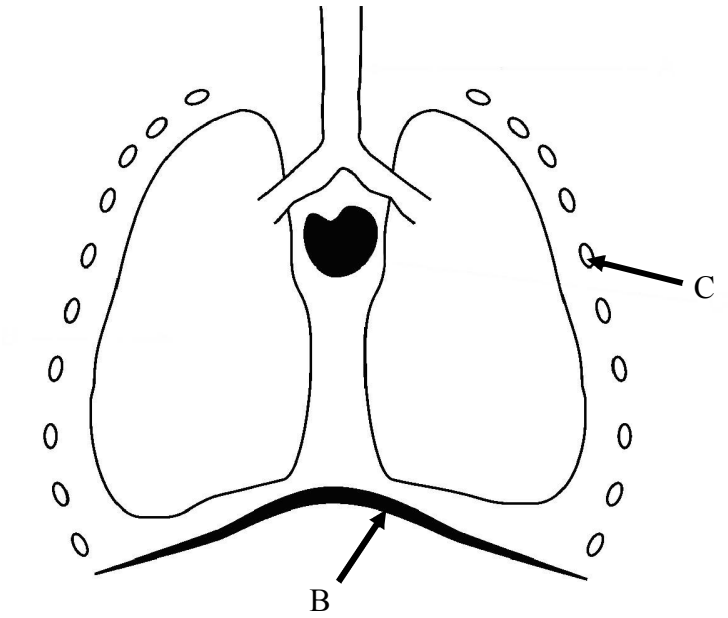
Standard Grade Biology

The Body in Action **The Need for Energy**

1. State three differences between inhaled and exhaled air.

(3)

2. The following diagram shows a section through the human chest.



(a) Name parts B and C.

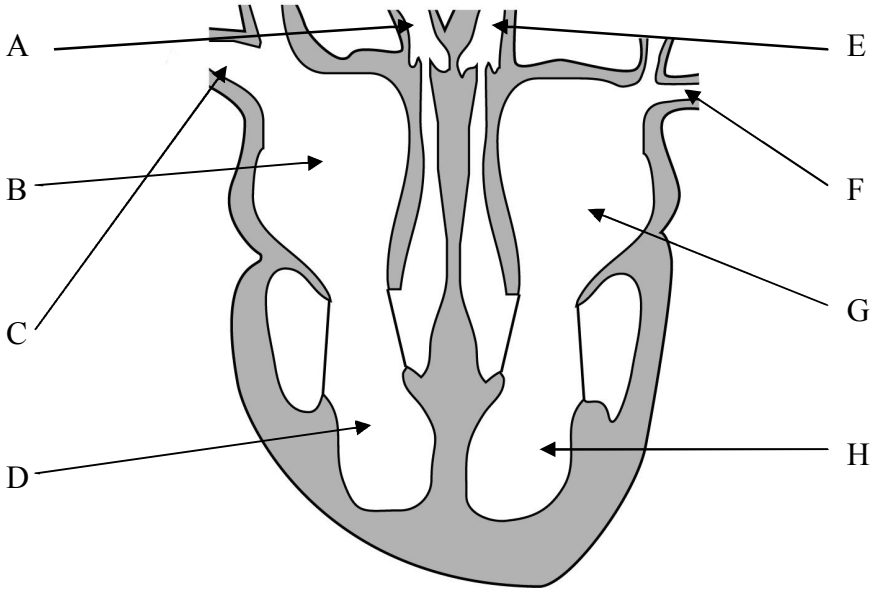
(1)

(b) Describe the changes which take place in the chest when a person breathes in.

(2)

3. The following diagram shows the human heart. Name parts A-H.

(8)



4. Explain the function of the cilia and mucus in the trachea and bronchi.

(2)

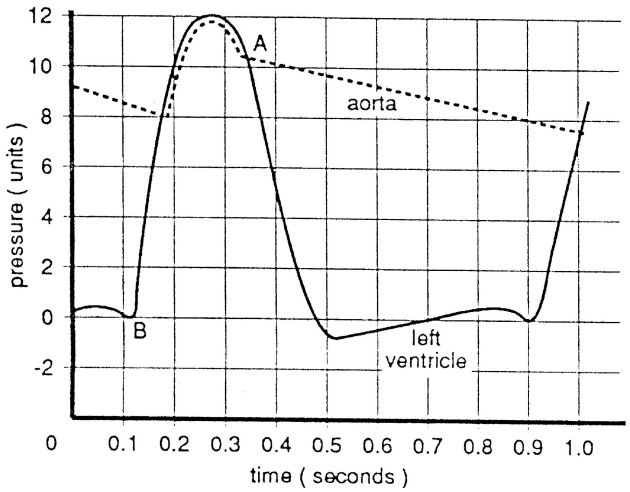
5. Describe three features which make the lungs efficient organs of gas exchange.

(3)

6. Name three functions of the blood.

(3)

7. The graph below shows pressure changes in the left ventricle and aorta of an adult. The value for pressure is in units where 1 represents a low pressure and 12 represents a high pressure.



(a) Give two ways in which the curve for pressure in the left ventricle is different from that of the aorta.

(2)

(b) What was the highest pressure recorded in the aorta?

(1)

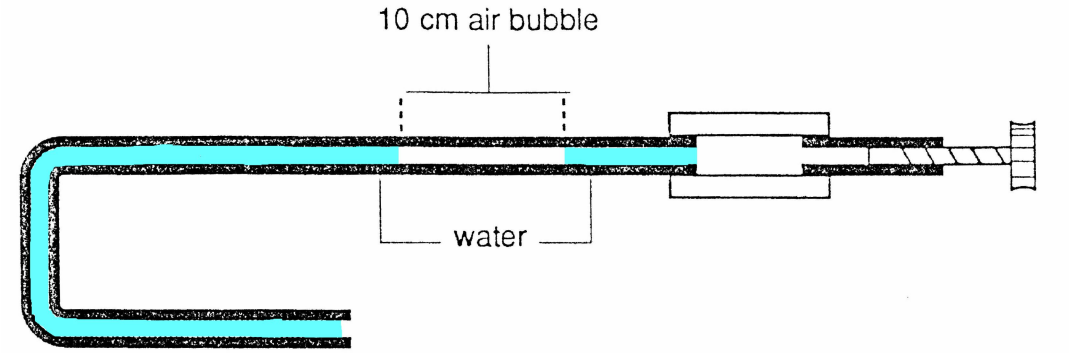
(c) What was the lowest pressure recorded in the ventricle?

(1)

(d) The letters A and B on the diagram indicate when two of the heart valves shut. At B the bicuspid valve is closing and at A the semi-lunar valve to the aorta shuts. With the help of the information from the graph, explain why the valves shut at these points.

(2)

8. Shown below is a diagram of a piece of apparatus which can be used to analyse the composition of air.



The sample bubble of air was measured and found to be 10cm long. A chemical to absorb carbon dioxide was added and the length of the air bubble decreased to 9.7 cm.

(a) Work out the percentage of carbon dioxide in the air sample.

(1)

(b) Both measurements of the air bubble were made at the same temperature. Suggest a reason for this.

(1)

Total - 30