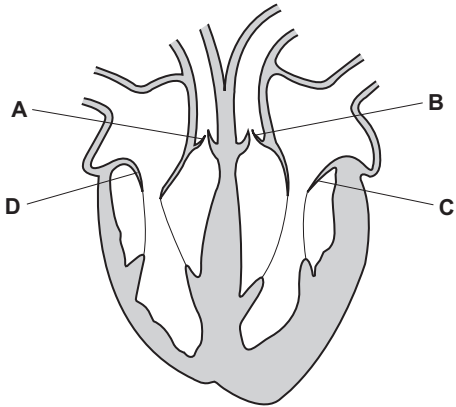


- 15 Which statement describes a double circulatory system?
- A Blood goes through the lungs twice every time it goes round the body.
 - B Blood goes through the kidneys twice every time it goes round the body.
 - C Blood goes through the heart twice every time it goes round the body.
 - D Blood goes through the brain twice every time it goes round the body.

- 15 What is a feature of veins?
- A one-cell-thick wall
 - B narrow lumen
 - C thick muscular walls
 - D valves are present
- 16 The diagram shows a section through a human heart.
- Which structure is an atrioventricular valve in the right side of the heart?



- 2 (a) Fig. 2.1 is a diagram of part of the human circulatory system.
- The arrows show the direction of blood flow.

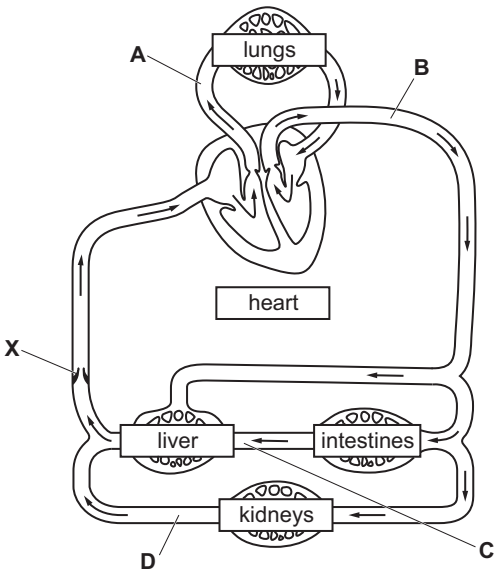


Fig. 2.1

- (i) Complete Table 2.1 by naming the blood vessels in Fig. 2.1 and stating whether the blood in each vessel is oxygenated.

Table 2.1

letter in Fig. 2.1	name of the blood vessel	carries oxygenated blood (yes / no)
A		
B		
C		
D		

[4]

- (ii) State the name of structure X in Fig. 2.1 and outline its function.

name

function

[2]

(b) Fig. 2.2 is a diagram of part of a fish circulatory system.

The arrows show the direction of blood flow.

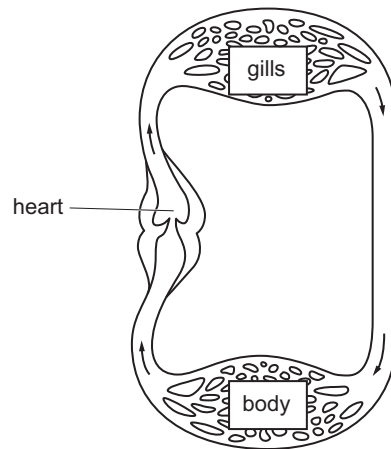


Fig. 2.2

(i) Describe how the structure of the fish heart in Fig. 2.2 differs from a human heart.

.....

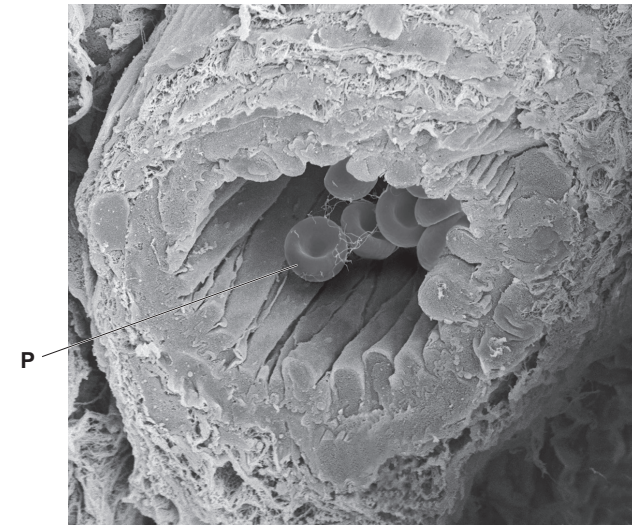
 [2]

(ii) Explain the advantages of the type of circulatory system found in humans, compared with the circulatory system shown in Fig. 2.2.

.....

 [4]

(c) Fig. 2.3 is a photomicrograph of an arteriole.



magnification $\times 1430$

Fig. 2.3

(i) Identify the structure labelled **P** in Fig. 2.3.

..... [1]

(ii) The magnification of the image is provided. Write the formula that would be used to calculate the actual diameter of the lumen of the arteriole in Fig. 2.3.

..... [1]

(iii) The actual diameter of the lumen of the arteriole shown in Fig. 2.3 is 0.0315 mm.

Convert 0.0315 mm to micrometres (μm).

..... μm [1]

[Total:15]

4 Fig. 4.1 shows a section through a human heart and the main blood vessels.

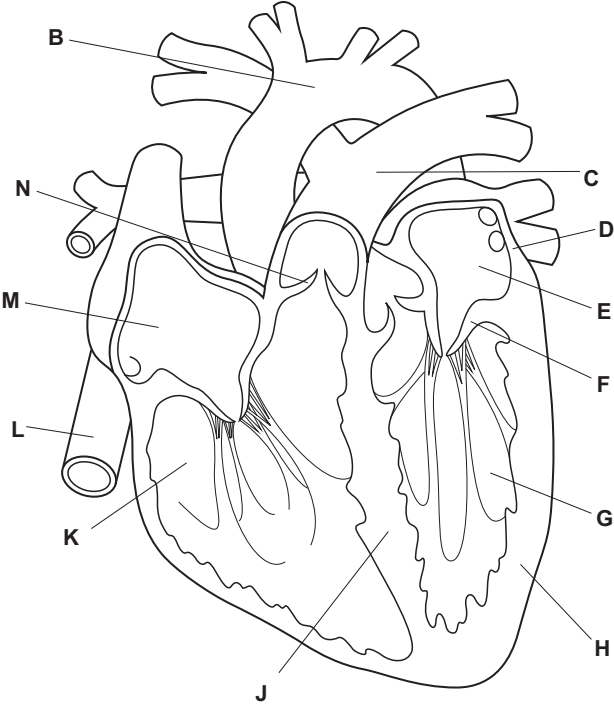


Fig. 4.1

- (a) (i)

State the letter in Fig. 4.1 that identifies:
the structure that separates oxygenated and deoxygenated blood
an atrioventricular valve.

[2]
- (ii)

Explain why the heart wall at H is thicker than the heart wall at D in Fig. 4.1.
.....
.....
.....
.....
.....

[2]

- (iii)
- Table 4.1 contains eight descriptions of parts of the pathway a red blood cell takes as it moves from the vena cava to the aorta.

Using Fig. 4.1, complete Table 4.1 by numbering the descriptions to show the correct sequence.

Two have been done for you.

Table 4.1

description	sequence
blood enters C	
blood enters E and then E contracts	
blood enters M and then M contracts	1
blood travels to lungs	
blood moves into G	
blood moves into B	8
N opens	
blood moves into K	

(b) Fig. 4.2 shows the effect of exercise on heart rate.

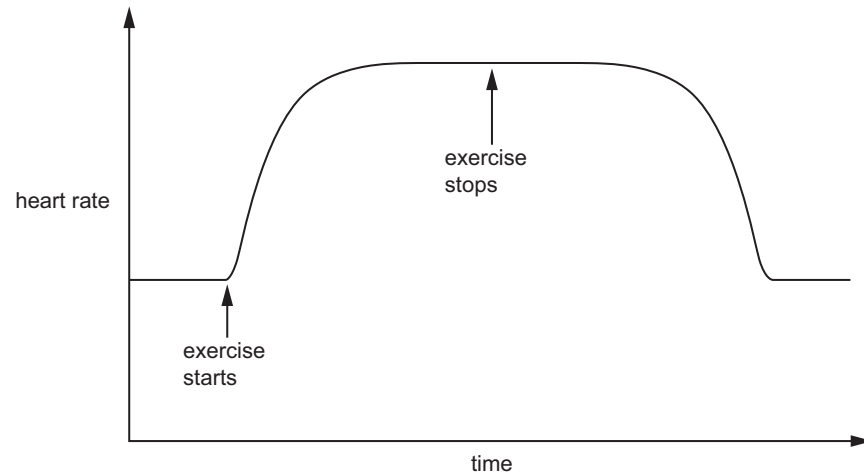


Fig. 4.2

(i) Explain the effect of exercise on heart rate shown in Fig. 4.2.

..... [5]

(ii) A lack of exercise can increase the risk of coronary heart disease.

State **three** other factors that can increase the risk of coronary heart disease.

1
2
3 [3]

[Total: 14]

14 Which structures in humans and in plants normally carry amino acids?

	arteries	phloem
A	yes	yes
B	yes	no
C	no	yes
D	no	no