

15 What is a feature of veins?

- A one-cell-thick wall
- B narrow lumen
- C thick muscular walls
- D valves are present

2 (a) Fig. 2.1 is a diagram of part of the human circulatory system.

The arrows show the direction of blood flow.

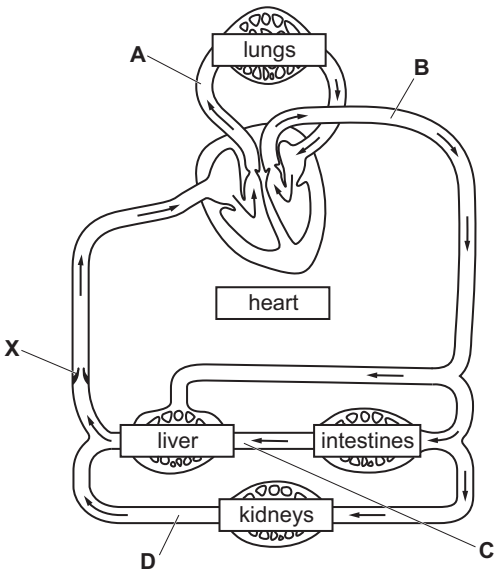


Fig. 2.1

(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

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

The arrows show the direction of blood flow.

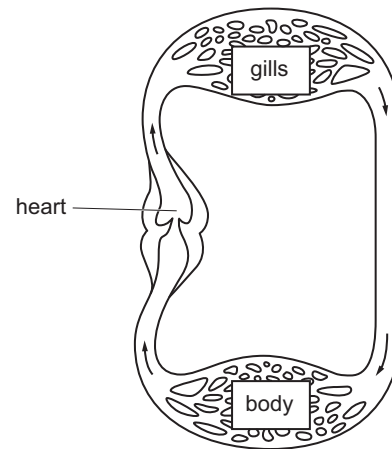


Fig. 2.2

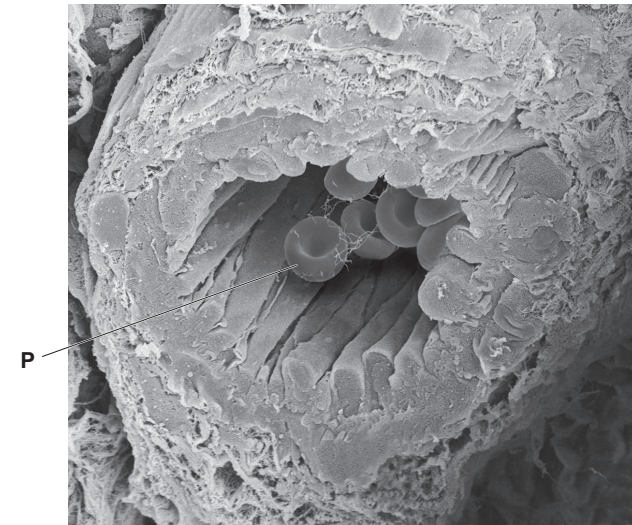
- (i) Describe how the structure of the fish heart in Fig. 2.2 differs from a human heart.

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..... [2]

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

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..... [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]

18 Which row shows the features of a vein?

	relative thickness of the wall to total vessel diameter	diameter of the lumen	presence or absence of valves
A	thick	large	absent
B	thick	small	present
C	thin	small	absent
D	thin	large	present