

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.

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

The arrows show the direction of blood flow.

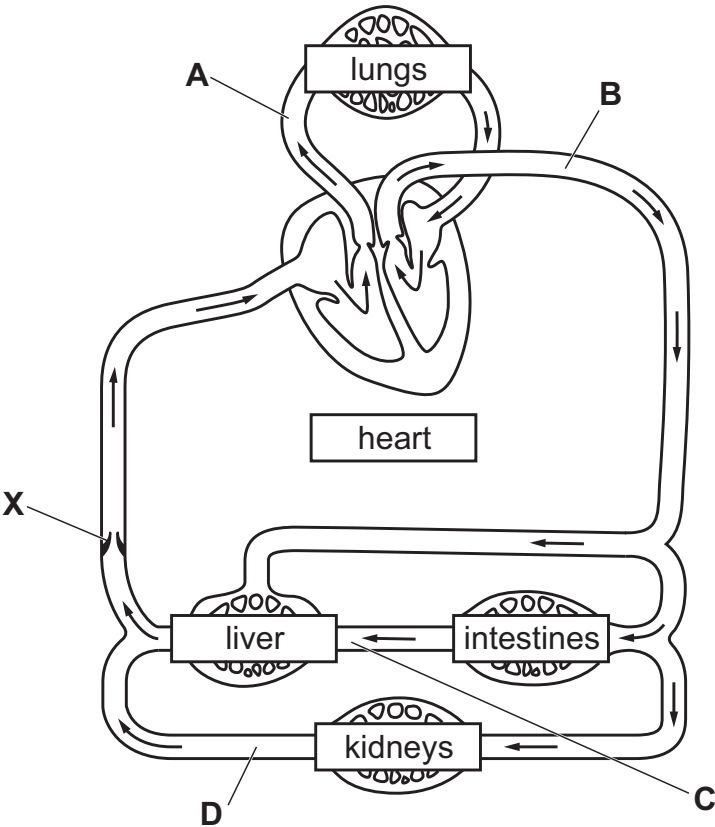


Fig. 2.1

(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.

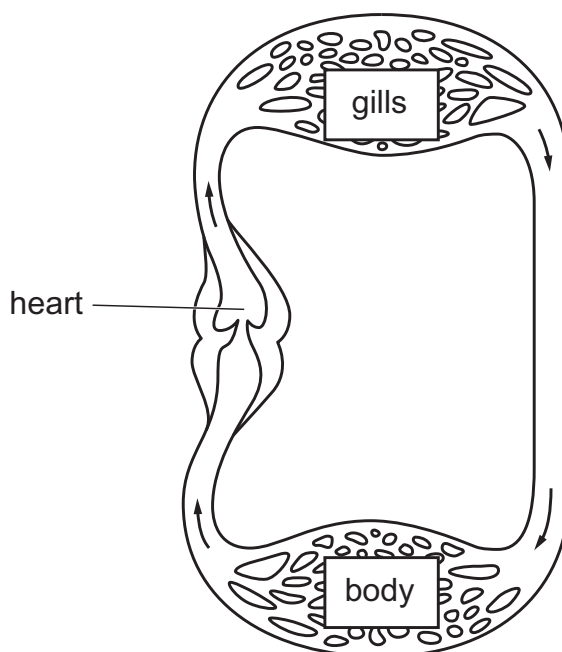


Fig. 2.2

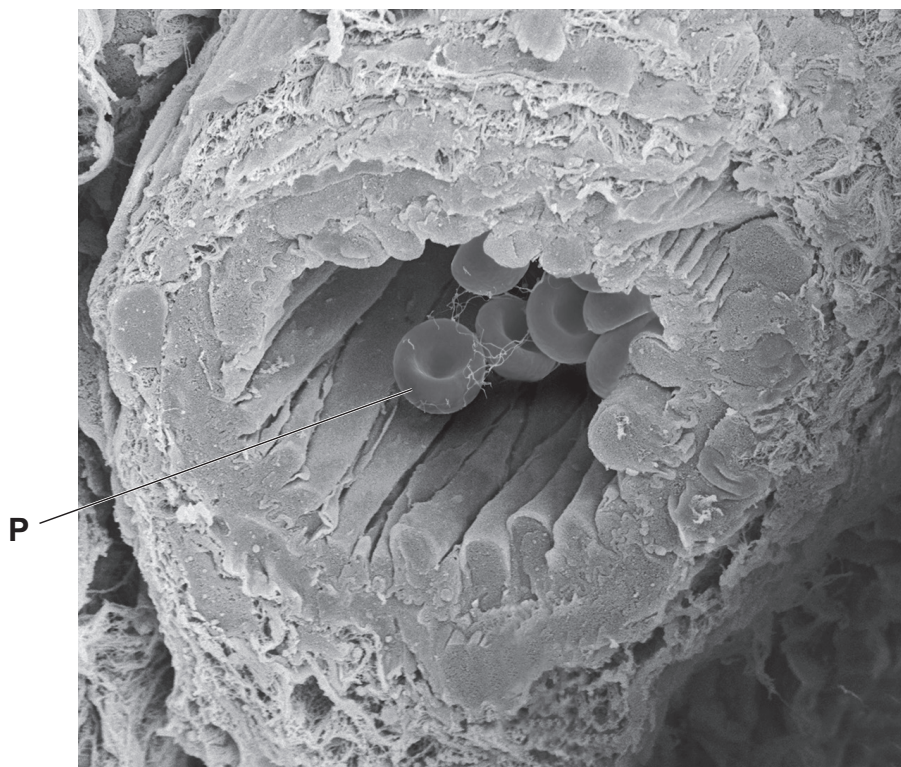
(i) Describe how the structure of the fish heart in Fig. 2.2 differs from a human heart.

..... [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]

15 In a fish, what is the sequence of structures that blood passes through after it leaves the heart?

- A** gills → muscles → heart
- B** gills → heart → muscles → heart
- C** muscles → gills → heart
- D** muscles → heart

16 What is an advantage of a double circulatory system?

- A** It allows the mixing of oxygenated and deoxygenated blood.
- B** It can keep blood pressure high in the lungs.
- C** Less carbon dioxide is removed from the body cells.
- D** Oxygen is supplied to body cells by blood at high pressure.