

GCSE Biology B (Twenty First Century Science)
J257/03 Breadth in Biology (Higher)

Question Set 20

1

Fig. 1.1 shows three different circulatory systems.

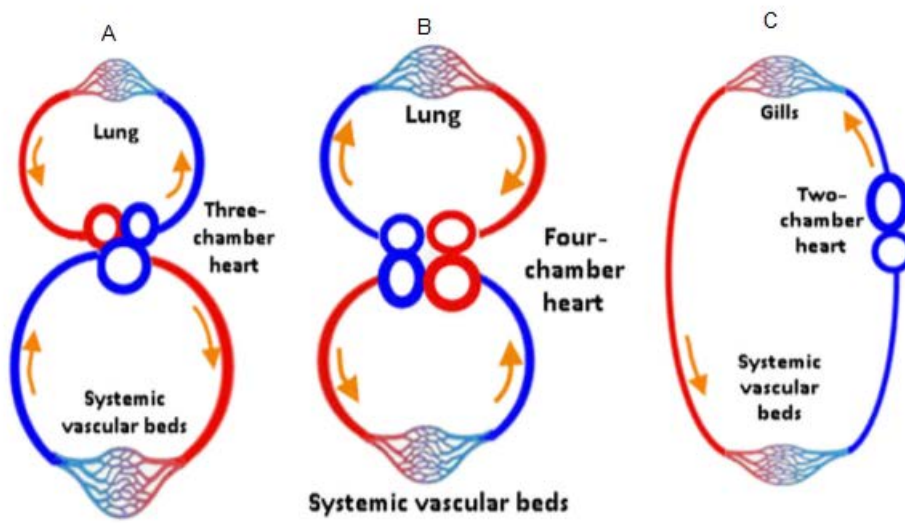


Fig. 1.1

Tick (✓) **one** box.

- A
- B
- C

Give a reason for your answer.

Double circulatory system. Heart consists of four chambers.

[2]

- (b) The human heart has many features that means it is adapted to its function. For each statement decide which structure's function is described.

Tick (✓) **one** box in each row.

Function	Structure		
	Heart valve	Cardiac muscle	Heart chambers
Contracts to force blood from atria to ventricles		✓	
Contracts to force blood out of the ventricles through vessels		✓	
Prevents backflow of blood during contractions	✓		
Blood temporarily stored in these small spaces to allow blood to be pumped at a high pressure			✓

[4]

- (c) Some babies are born with a heart defect known as a 'hole in the heart'. This is where there is a hole between two of the heart's chambers.

Fig. 1.2 shows a normal heart. **Fig. 1.3** shows a heart of a baby with a 'hole in the heart'.

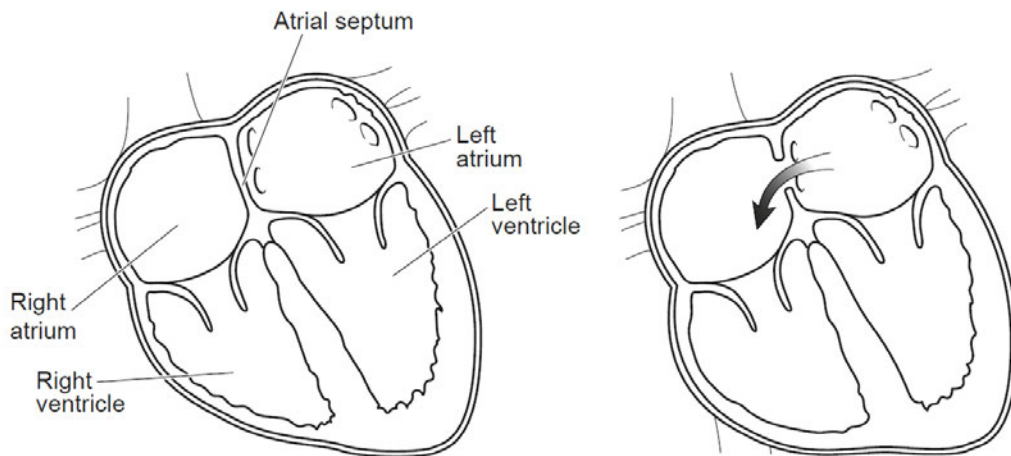


Fig. 1.2

Fig. 1.3

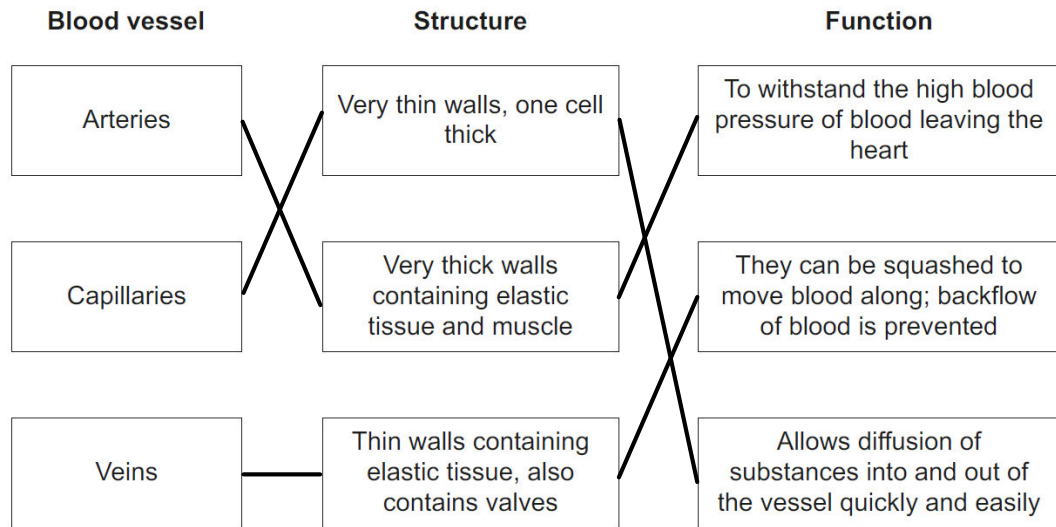
Suggest how the defect in **Fig. 1.3** could affect the baby.

[1]

Oxygenated blood from the left side of the heart flows into the right atrium where it mixes with deoxygenated blood. A lower volume of oxygenated blood is pumped out of the aorta and travels to body tissues so aerobic respiration will be reduced. This may lead to shortness of breath, fatigue, underdevelopment etc.

(d) The human circulatory system has three types of blood vessel.

Draw lines to connect the **blood vessel** to the correct description of its **structure** and the explanation of how its structure allows it to carry out its **function**.



[3]

Total Marks for Question Set 20: 10

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