

GCSE Biology B (Twenty First Century Science)
J257/01 Breadth in Biology (Foundation)

Question Set 30

Multiple Choice Questions

1 Fig. 10.1 shows three different circulatory systems.

© B Furst, 'The Heart: Pressure Propulsion Pump or Organ of Impedence?', Fig. 8, Journal of Cardiothoracic and Vascular Anesthesia', Vol. 367(6), February 2015. Item removed due to third party copyright restrictions.

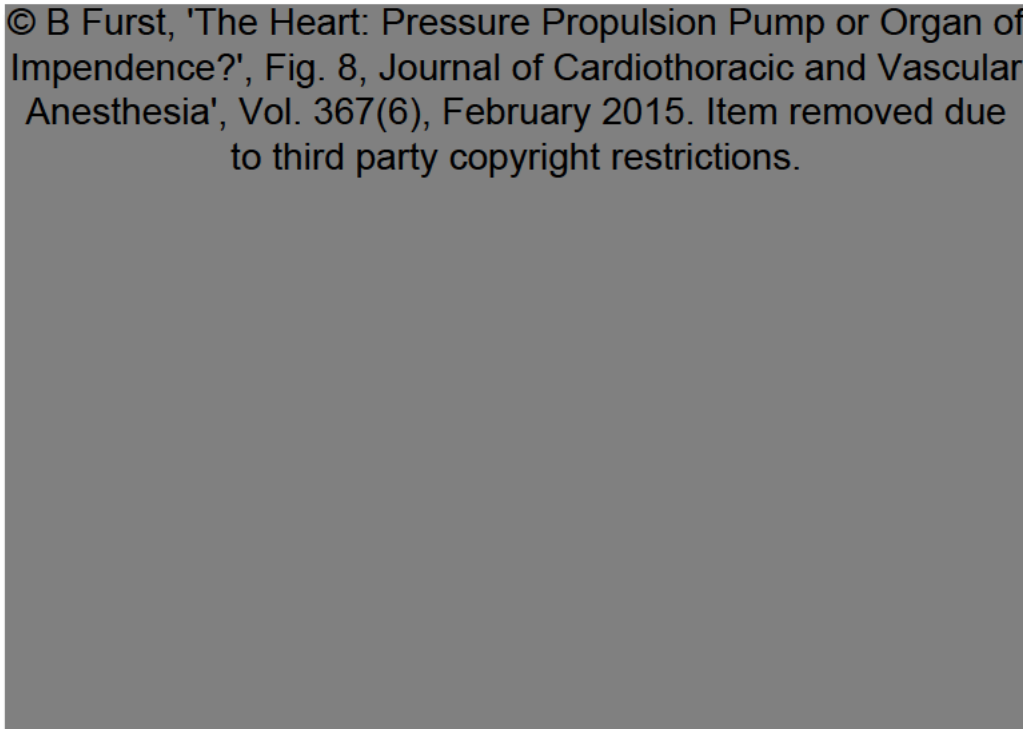


Fig. 10.1

(a) Which diagram best represents the **human** circulatory system?

Tick (✓) **one** box.

A

B

C

Give a reason for your answer.

*- blood circulates around the body twice before entering same chamber of heart
- has 4 chambers of heart*

[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 valves	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. 10.2 shows a normal heart. Fig. 10.3 shows a heart of a baby with a 'hole in the heart'.

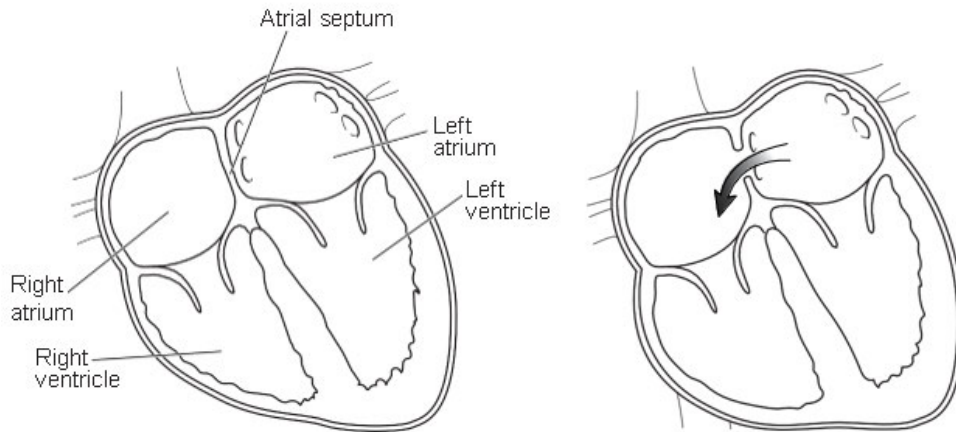


Fig. 10.2

Fig. 10.3

Suggest how the defect in Fig. 10.3 could affect the baby.

- (d) The human circulatory system has three types of blood vessel. *not enough oxygenated blood travels around baby's body so cells can't respire so might die* [1]

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**.

Blood vessel	Structure	Function
Arteries	Very thin walls, one cell thick	To withstand the high blood pressure of blood leaving the heart
Capillaries	Very thick walls containing elastic tissue and muscle	They can be squashed to move blood along; backflow of blood is prevented
Veins	Thin walls containing elastic tissue, also contains valves	Allows diffusion of substances into and out of the vessel quickly and easily

[3]

Total Marks for Question Set 30: 10

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