

9. Transport in animals

9.3 Blood vessels

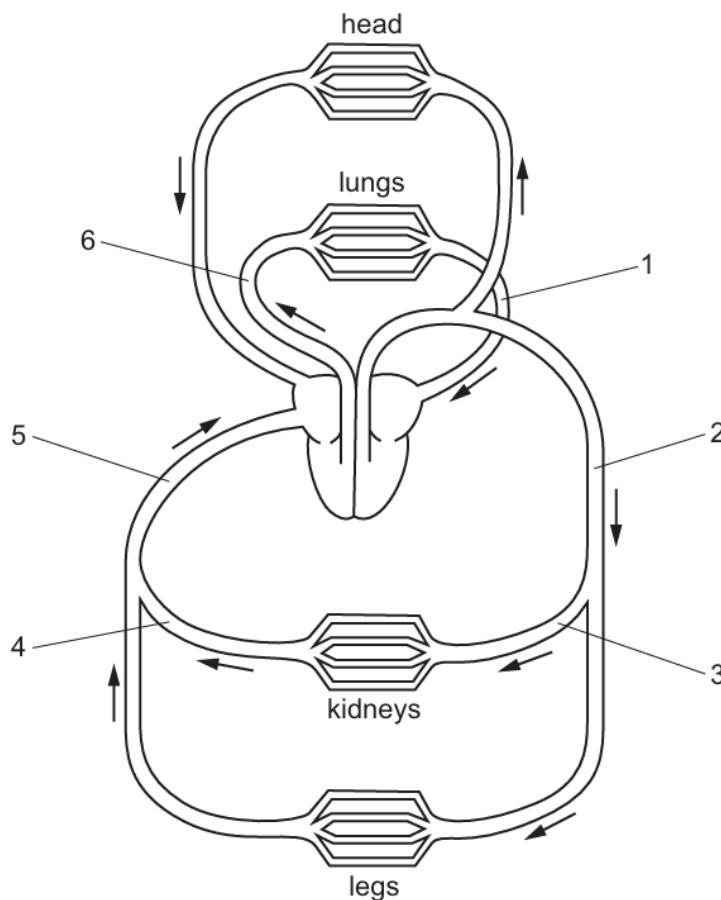
Paper 1 and 2

Question Paper

Paper 1

Questions are applicable for both core and extended candidates

1 The diagram shows part of the human circulatory system.



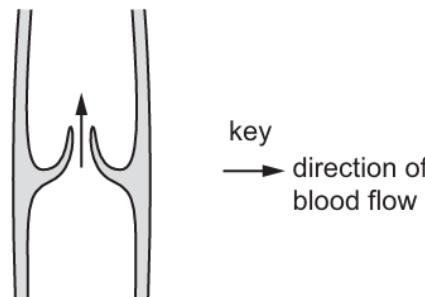
What are the numbered blood vessels?

	vena cava	pulmonary vein	renal artery
A	5	6	4
B	2	1	3
C	5	1	3
D	2	6	4

2 In humans, which structures provide cells with oxygen and nutrients?

- A arteries
- B capillaries
- C lungs
- D veins

3 The diagram shows part of a blood vessel.



Which evidence in the diagram shows that it is a vein and **not** an artery?

- A There is a valve inside the blood vessel.
- B Blood is flowing in an upwards direction.
- C The blood vessel has a relatively small lumen.
- D The blood vessel has a relatively thick wall.

4 Which row shows the features of an artery or a vein?

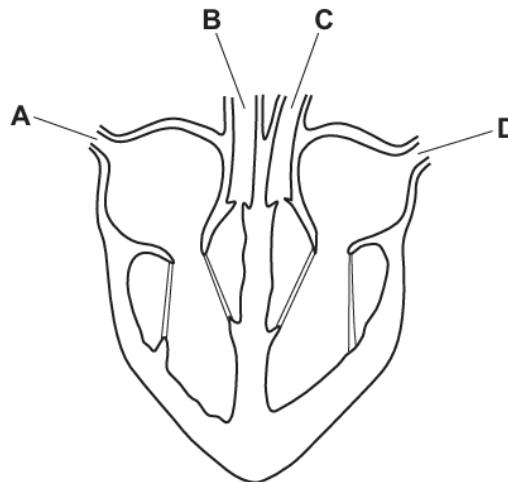
	blood vessel	diameter of lumen	thickness of wall
A	artery	large	thick
B	artery	small	thin
C	vein	large	thin
D	vein	small	thick

5 Which row correctly links the blood vessels with their functions?

	carries blood to the right atrium from the body	carries blood from the right ventricle to the lungs	carries blood from the lungs to the left atrium	carries blood from the left ventricle to the body
A	vena cava	pulmonary artery	pulmonary vein	aorta
B	aorta	pulmonary vein	pulmonary artery	vena cava
C	aorta	pulmonary artery	pulmonary vein	vena cava
D	vena cava	pulmonary vein	pulmonary artery	aorta

6 The diagram shows a section through a mammalian heart.

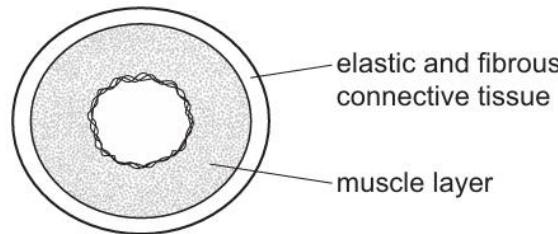
Which part carries blood directly from the lungs?



7 What are the main vessels carrying blood to and from the kidney?

	to kidney	from kidney
A	pulmonary artery	pulmonary vein
B	pulmonary vein	pulmonary artery
C	renal artery	renal vein
D	renal vein	renal artery

8 The diagram shows a cross-section through a human blood vessel.



Which type of blood vessel does the diagram show?

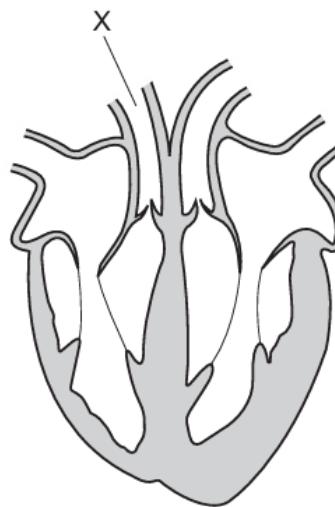
- A an artery
- B a capillary
- C a vein
- D a ventricle

9 The table shows some features of blood vessels.

Which row shows the features of a vein?

	direction of blood flow	size of the central hole (lumen)	thickness of wall
A	away from the heart	large	thick
B	away from the heart	small	thick
C	towards heart	small	thin
D	towards heart	large	thin

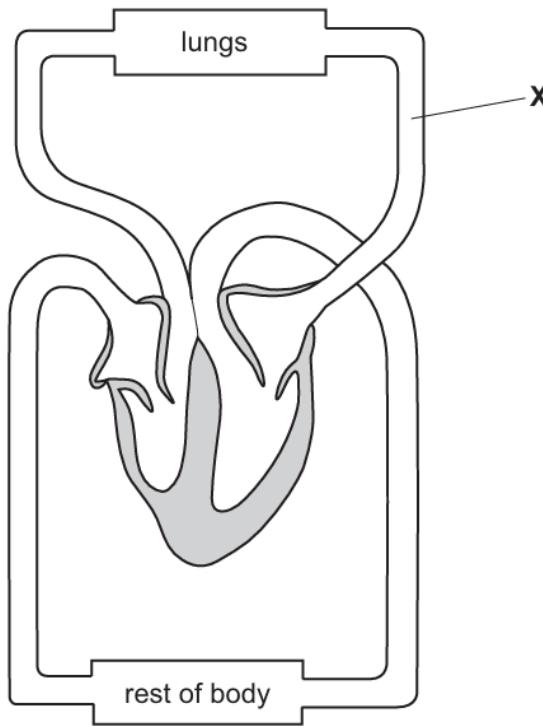
10 The diagram shows a section through the heart and its blood vessels.



Which row gives the vessel name and the direction of blood flow in vessel X?

	vessel name	direction of blood flow
A	aorta	towards the lungs
B	pulmonary artery	towards the lungs
C	pulmonary artery	away from the lungs
D	vena cava	away from the lungs

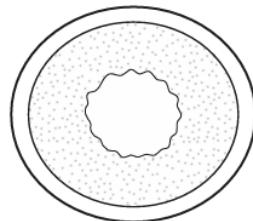
11 The diagram shows the human heart and main blood vessels.



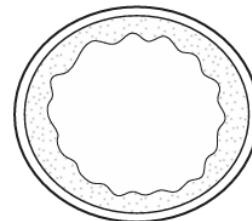
What is the blood vessel labelled X?

- A** aorta
- B** pulmonary artery
- C** pulmonary vein
- D** vena cava

12 The diagram shows cross-sections through three types of blood vessel, **not** drawn to the same scale.



V



W



X

Which section is from a vein and which is from a capillary?

	vein	capillary
A	V	W
B	W	V
C	W	X
D	X	W

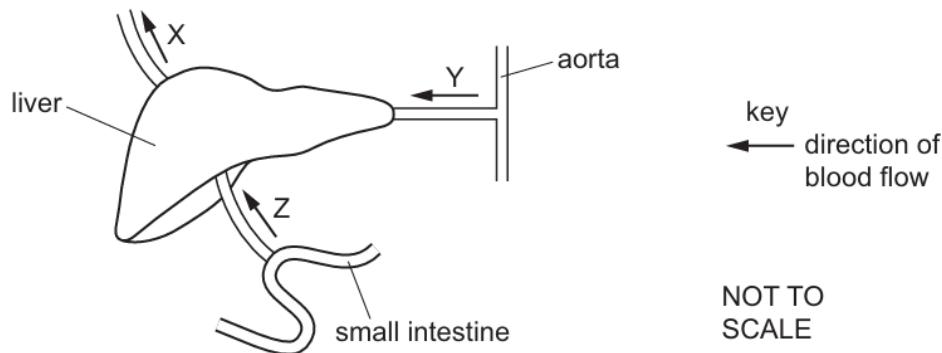
Paper 2

Questions are applicable for both core and extended candidates unless indicated in the question

13 Which row shows the features of a blood vessel that transports blood at low pressure?

	size of lumen	thickness of wall	valves
A	large	thick	absent
B	small	thin	present
C	small	thick	absent
D	large	thin	present

14 The diagram shows the blood vessels associated with the liver.



What are the blood vessels labelled X, Y and Z? **(extended only)**

	X	Y	Z
A	hepatic artery	hepatic portal vein	hepatic vein
B	hepatic portal vein	hepatic artery	hepatic vein
C	hepatic vein	hepatic artery	hepatic portal vein
D	hepatic vein	hepatic portal vein	hepatic artery

15 Which row shows the features of an artery or a vein?

	blood vessel	diameter of lumen	thickness of wall
A	artery	large	thick
B	artery	small	thin
C	vein	large	thin
D	vein	small	thick

16 What do shunt vessels connect?

- A** arterioles to capillaries
- B** arterioles to venules
- C** capillaries to lymphatic vessels
- D** capillaries to venules

17 What are the main vessels carrying blood to and from the kidney?

	to kidney	from kidney
A	pulmonary artery	pulmonary vein
B	pulmonary vein	pulmonary artery
C	renal artery	renal vein
D	renal vein	renal artery

18 The table shows some features of blood vessels.

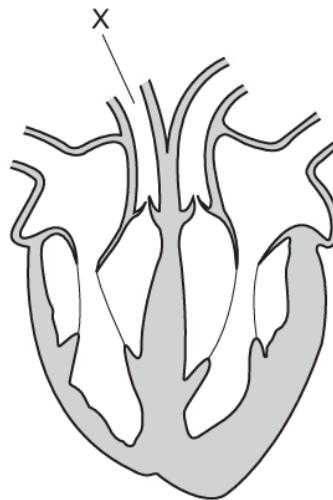
Which row shows the features of a vein?

	direction of blood flow	size of the central hole (lumen)	thickness of wall
A	away from the heart	large	thick
B	away from the heart	small	thick
C	towards heart	small	thin
D	towards heart	large	thin

19 Where are valves found that prevent blood from flowing in the wrong direction?

- A** capillaries and arteries
- B** lungs and veins
- C** heart and capillaries
- D** heart and veins

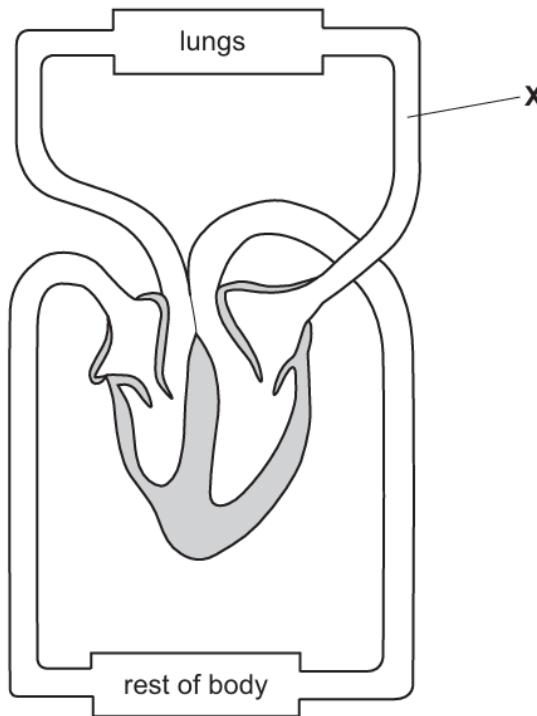
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Which row gives the vessel name and the direction of blood flow in vessel X?

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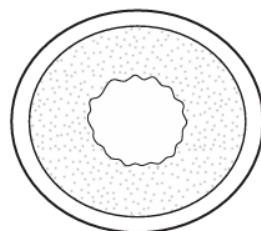
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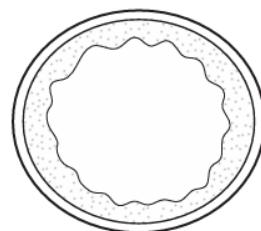
What is the blood vessel labelled **X**?

- A** aorta
- B** pulmonary artery
- C** pulmonary vein
- D** vena cava

22 The diagram shows cross-sections through three types of blood vessel, **not** drawn to the same scale.



V



W



X

Which section is from a vein and which is from a capillary?

	vein	capillary
A	V	W
B	W	V
C	W	X
D	X	W