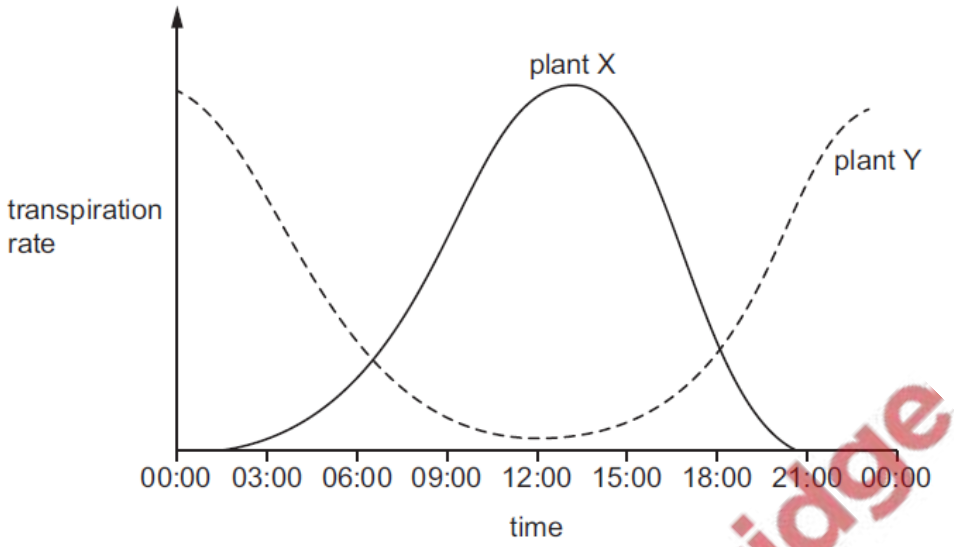
Transport in humans – 2022 November O Level 5090

1. Nov/2022/Paper_11/No.13

The graph shows the transpiration rates of two plants during one day. Both plants were grown under identical conditions.



Which statement explains what the graph shows?

A Plant X closes its stomata during the brightest part of the day.

B Plant Y closes its stomata during the brightest part of the day.

C Plants X and Y close their stomata during the brightest part of the day.

D Plant Y has no stomata.

2. Nov/2022/Paper_11/No.14

Some people have a rare heart condition in which the lower left chamber of the heart has not developed properly and is much smaller than normal.

The immediate result of this condition is to cause lower than normal blood flow into which blood vessel?

A aorta

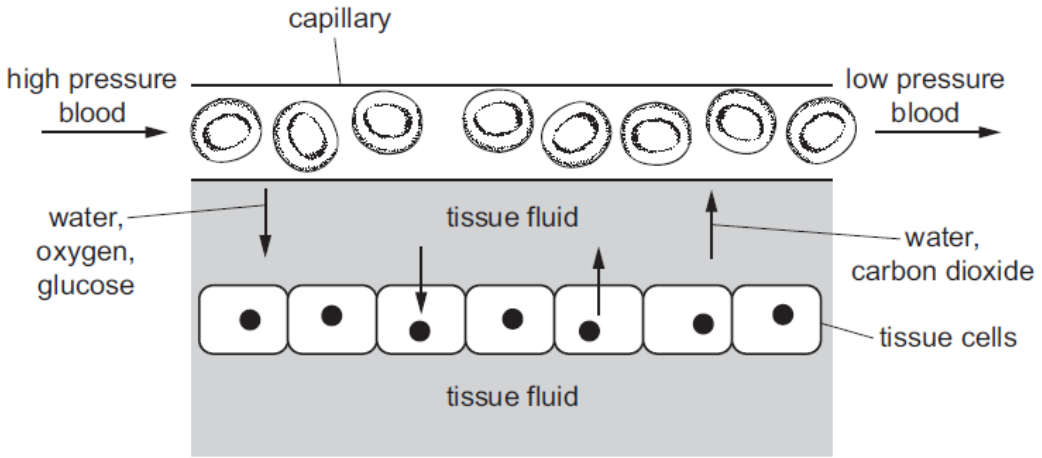
B pulmonary artery

C pulmonary vein

D vena cava

3. Nov/2022/Paper_11/No.16

The diagram shows movement of substances between blood in a capillary and tissue fluid.



By which process does water move from tissue fluid to capillary?

A active transport

B water pressure

C osmosis

D assimilation

4. Nov/2022/Paper_12/No.14

Some people have a rare heart condition in which the lower left chamber of the heart has not developed properly and is much smaller than normal.

The immediate result of this condition is to cause lower than normal blood flow into which blood vessel?

A aorta

B pulmonary artery

C pulmonary vein

D vena cava

5. Nov/2022/Paper_12/No.15

Which route does blood take around the body?

A pulmonary artery → heart → aorta → lungs → pulmonary vein → heart → vena cava

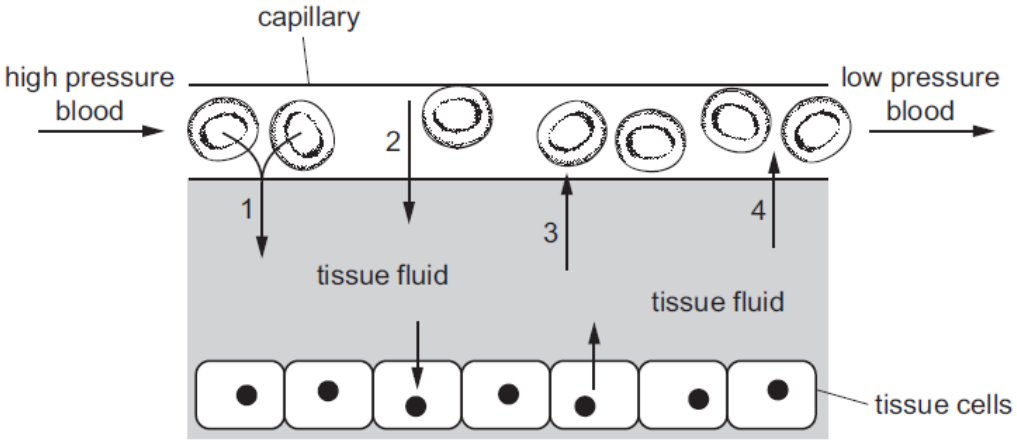
B pulmonary vein → heart → lungs → aorta → pulmonary artery → heart → vena cava

C vena cava → heart → pulmonary artery → lungs → pulmonary vein → heart → aorta

D vena cava → heart → pulmonary vein → lungs → pulmonary artery → heart → aorta

6. Nov/2022/Paper_12/No.16

The diagram shows the transfer of materials between blood in a capillary and tissue fluid.



Which row shows the correct labels for the arrows in the diagram?

	1	2	3	4
A	carbon dioxide	glucose	oxygen	water
B	glucose	water	oxygen	urea
C	oxygen	glucose	carbon dioxide	water
D	oxygen	water	carbon dioxide	glucose

7. Nov/2022/Paper_21/No.9(a, b)

(a) Describe the composition of human blood.

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..... [5]

(b) A blood test is one way of assessing a person's health and fitness. After a small sample of blood has been taken, its composition can be analysed.

Suggest and explain ways in which a blood test can help to determine a person's health and fitness.

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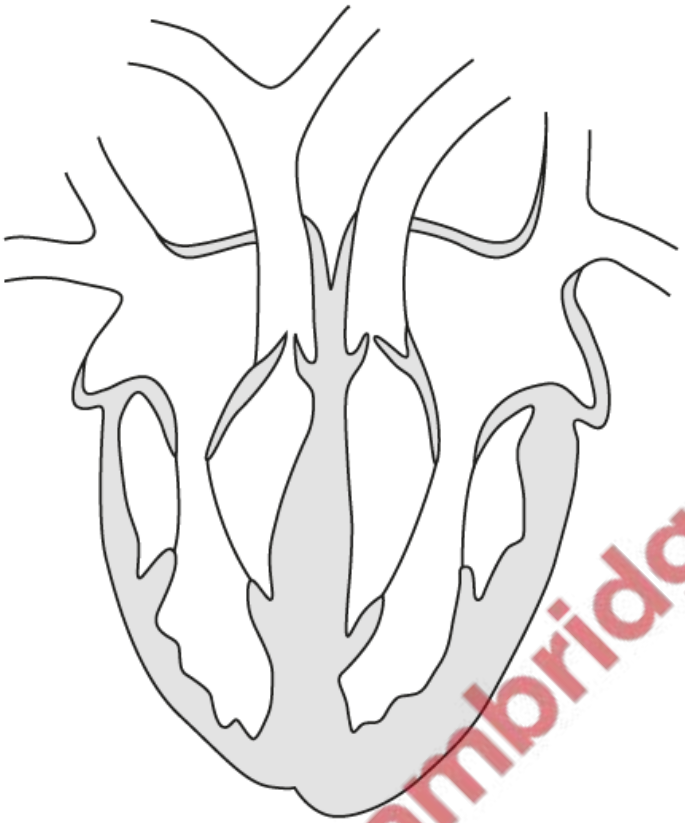
8. Nov/2022/Paper_22/No.4(a, b)

The diagram shows the internal structure of the human heart and associated blood vessels.



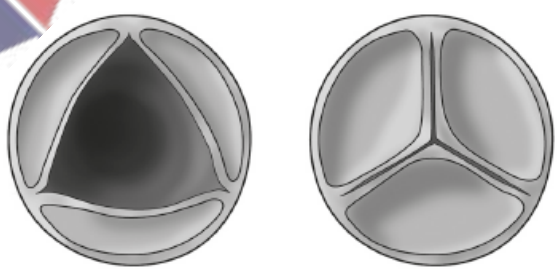
(a) Name **two** blood vessels shown in the diagram that carry oxygenated blood.

1 .....

2 .....

[2]

(b) Blood flows through a valve when the left ventricle of the heart contracts. Diagram 1 shows this valve in the open and closed positions.

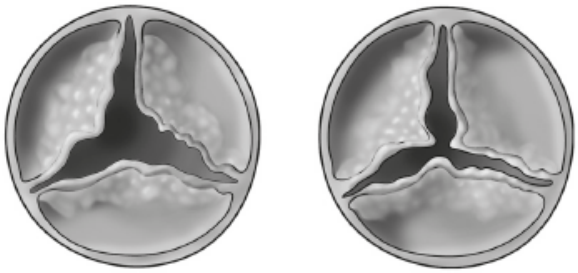


valve open valve closed

Diagram 1

(i) Label, using the letter **X** on the diagram of the heart, the location of this valve. [1]

A small number of people develop a medical condition that causes changes to this valve. Diagram 2 shows the same heart valve in the open and closed positions in a person with this condition.



valve open valve closed

Diagram 2

(ii) Explain how this medical condition will affect the flow of blood when the left ventricle contracts and relaxes.

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(iii) Describe and explain the effect of this condition on the ability of the person to exercise.

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