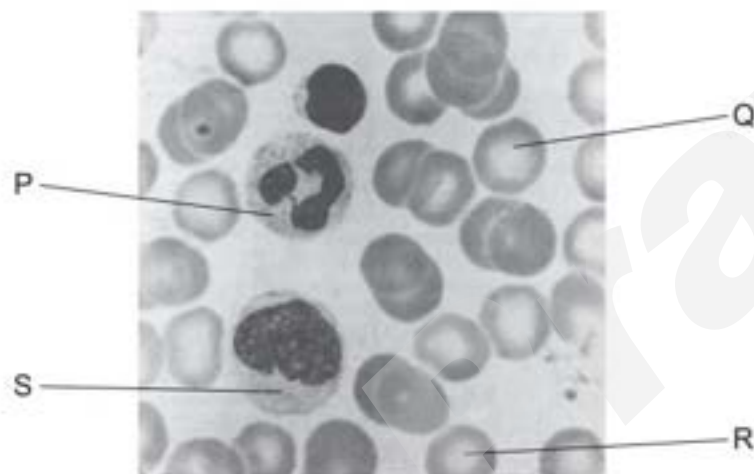


9. Transport in Animals

(Past Year Topical Questions 2010-2015)

May/June 2010 (11)

15 The photograph shows human blood cells as seen under a microscope at high power.



Which are red cells?

- A** P and Q **B** Q and R **C** R and S **D** S and P

Oct/Nov 2010 (11)

17 How often must a blood cell in the renal artery pass through the heart before it again reaches the renal artery?

- A** once
B twice
C three times
D four times

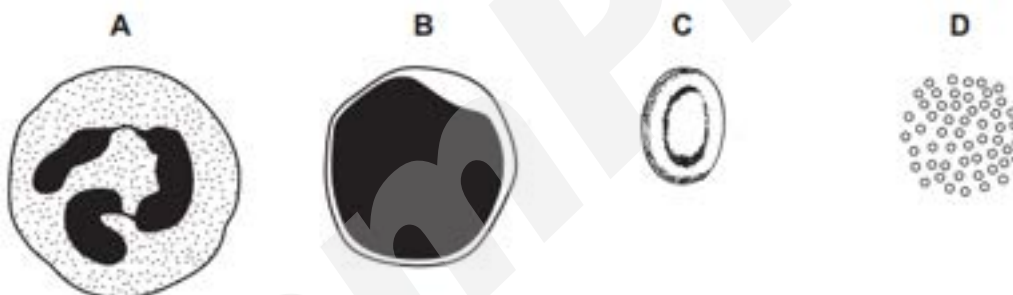
May/June 2011 (11)

9 Which describes the structure and function of a red blood cell?

	structure	function
A	cell contents are dead	transport of water
B	has a nucleus	produces antibodies
C	has cilia	moves particles in the respiratory tract
D	has no nucleus	transport of substances

19 The diagram shows some parts from the blood of a mammal.

Which part would contain the breakdown products of bacterial cells?



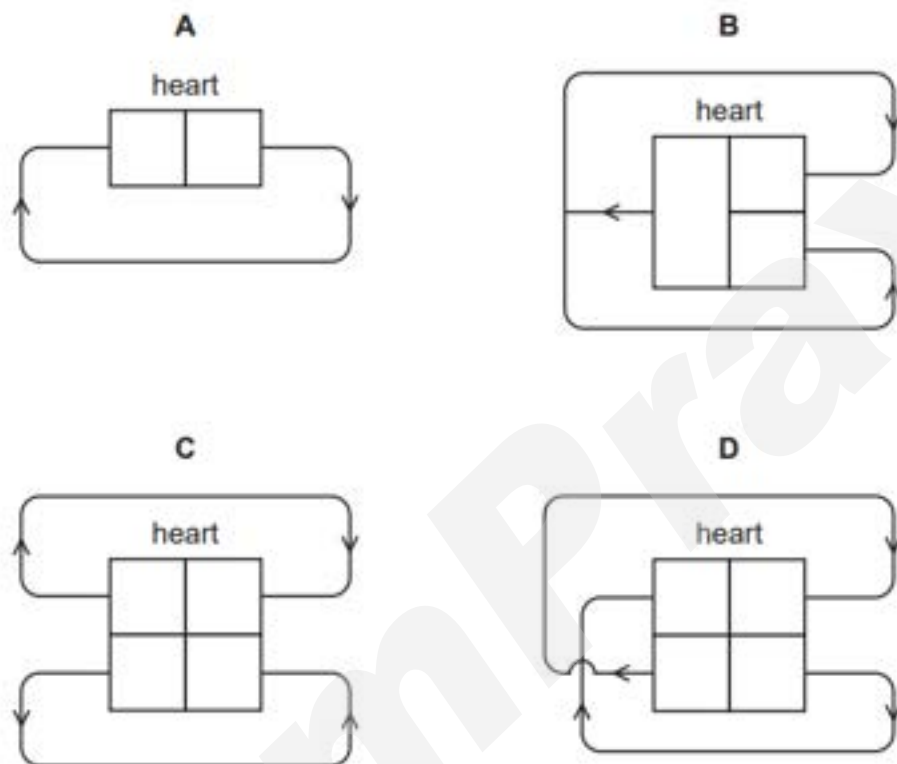
Oct/Nov 2011 (11)

20 Which group contains substances that are **all** carried in the blood?

- A amino acids, carbon dioxide and cellulose
- B glucose, glycogen and lactic acid
- C oestrogen, oxygen and starch
- D salts, testosterone and urea

May/June 2012 (11)

16 Which diagram shows the human double circulatory system?



24 Read the following sentence.

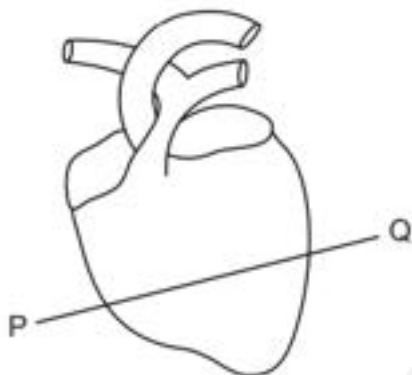
In order to prevent the human body from losing heat, the arterioles supplying the skin become narrow.

Which process does this sentence describe?

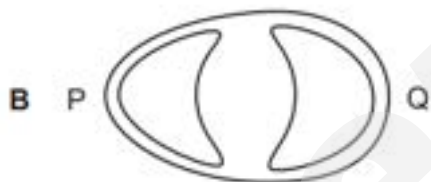
- A constriction
- B shivering
- C sweating
- D vasodilation

May/June 2012 (12)

16 The diagram shows the heart as seen from the front.



Which section shows the heart cut through line P-Q?



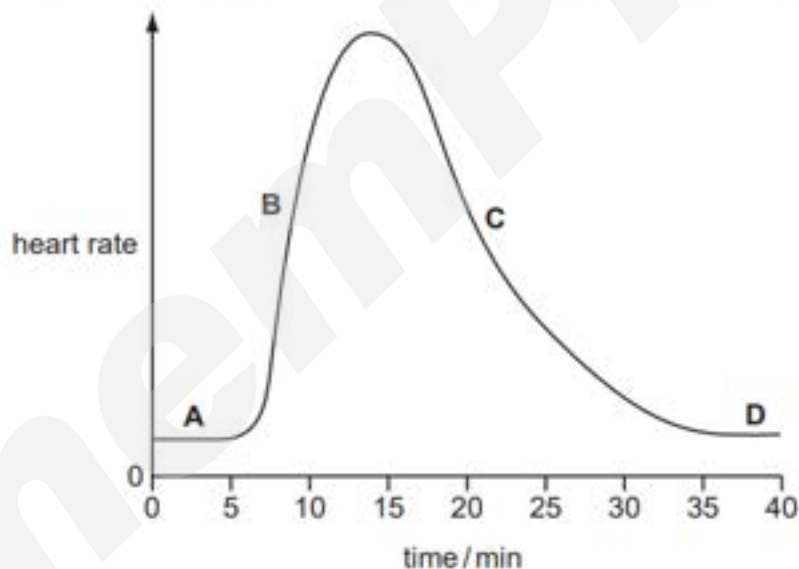
18 What is the characteristic feature of a double circulation?

- A In each circuit, blood passes from the gut to the liver before going back to the heart.
- B In each circuit, blood passes from the heart to the lungs and then back to the heart before going to other parts of the body.
- C In each circuit, blood passes through atria and ventricles before going to other parts of the body.
- D In each circuit, blood passes through the arteries and the capillaries before returning to the heart in veins.

Oct/Nov 2012 (13)

16 The graph shows the effect of several minutes of vigorous (hard) exercise on heart rate.

Which letter on the graph is at a time when the person is doing this exercise?



17 Which blood vessel, if it becomes blocked, could lead **directly** to a heart attack?

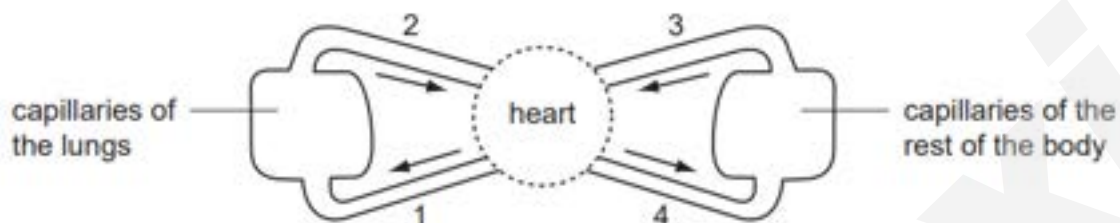
- A coronary artery
- B pulmonary artery
- C pulmonary vein
- D vena cava

18 Which substances are dissolved in human blood plasma?

- A carbon dioxide, haemoglobin and glucose
- B carbon dioxide, oxygen and haemoglobin
- C glucose, hormones and urea
- D oxygen, urea and starch

May/June 2013 (11)

17 The diagram shows a double circulatory system.



Which vessels carry oxygenated blood?

- A** 1 and 2 **B** 1 and 4 **C** 2 and 3 **D** 2 and 4

18 The photograph shows two blood cells, X and Y.

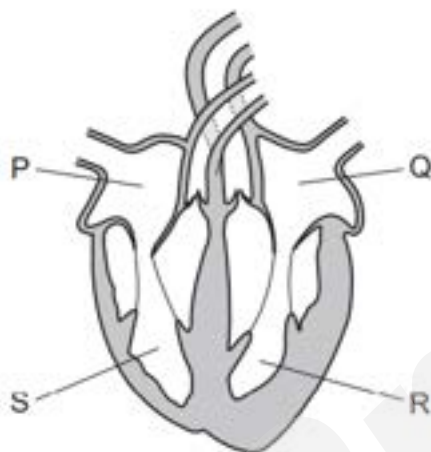


What are the functions of cells X and Y?

	cell X	cell Y
A	carries out phagocytosis	carries oxygen
B	carries oxygen	produces antibodies
C	carries oxygen	carries carbon dioxide
D	produces antibodies	carries oxygen

May/June 2013 (12)

18 The diagram shows the human heart.

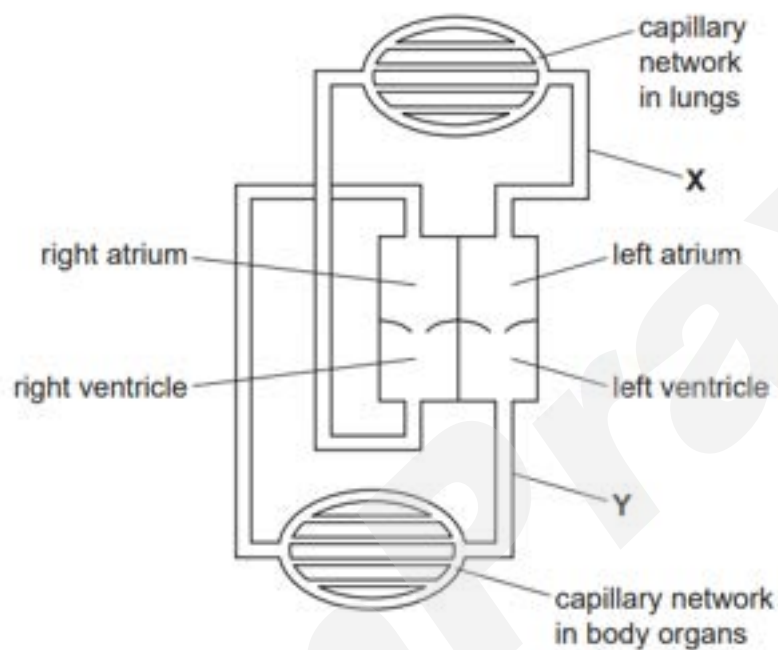


In which order does blood pass through the chambers during a complete circuit of the body after it returns from the lungs?

- A $Q \rightarrow R \rightarrow S \rightarrow P$
- B $Q \rightarrow R \rightarrow P \rightarrow S$
- C $P \rightarrow S \rightarrow Q \rightarrow R$
- D $P \rightarrow S \rightarrow R \rightarrow Q$

Oct/Nov 2013 (11)

17 The diagram shows the circulatory system of a mammal.



What describes the blood in vessels X and Y?

	X	Y
A	deoxygenated	deoxygenated
B	deoxygenated	oxygenated
C	oxygenated	deoxygenated
D	oxygenated	oxygenated

May/June 2014 (11)

15 Which blood vessel contains valves?

- A** arteriole
- B** capillary
- C** renal artery
- D** renal vein

16 When blood is flowing through a vena cava, which main blood vessel will it flow through next?

- A** hepatic portal vein
- B** hepatic vein
- C** pulmonary artery
- D** pulmonary vein

16 Which heart valves are open and which are closed when blood passes out of the right ventricle towards the lungs?

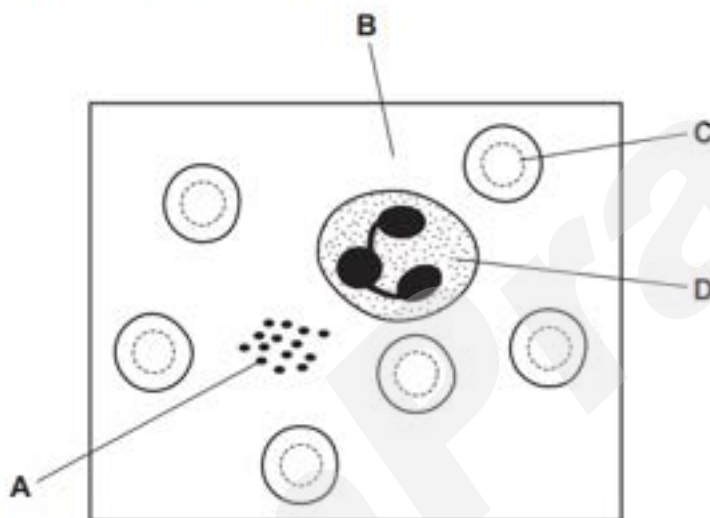
- A** bicuspid (mitral) valve closed, tricuspid valve open
- B** bicuspid (mitral) valve open, semi-lunar valve closed
- C** tricuspid valve closed, semi-lunar valve open
- D** tricuspid valve open, bicuspid (mitral) valve open

Oct/Nov 2014 (11)

16 The diagram shows human blood as seen through a light microscope.

A person's blood is unable to clot.

Which component of the blood is **not** functioning properly?



Oct/Nov 2014 (13)

15 In which list do all three blood vessels carry oxygenated blood?

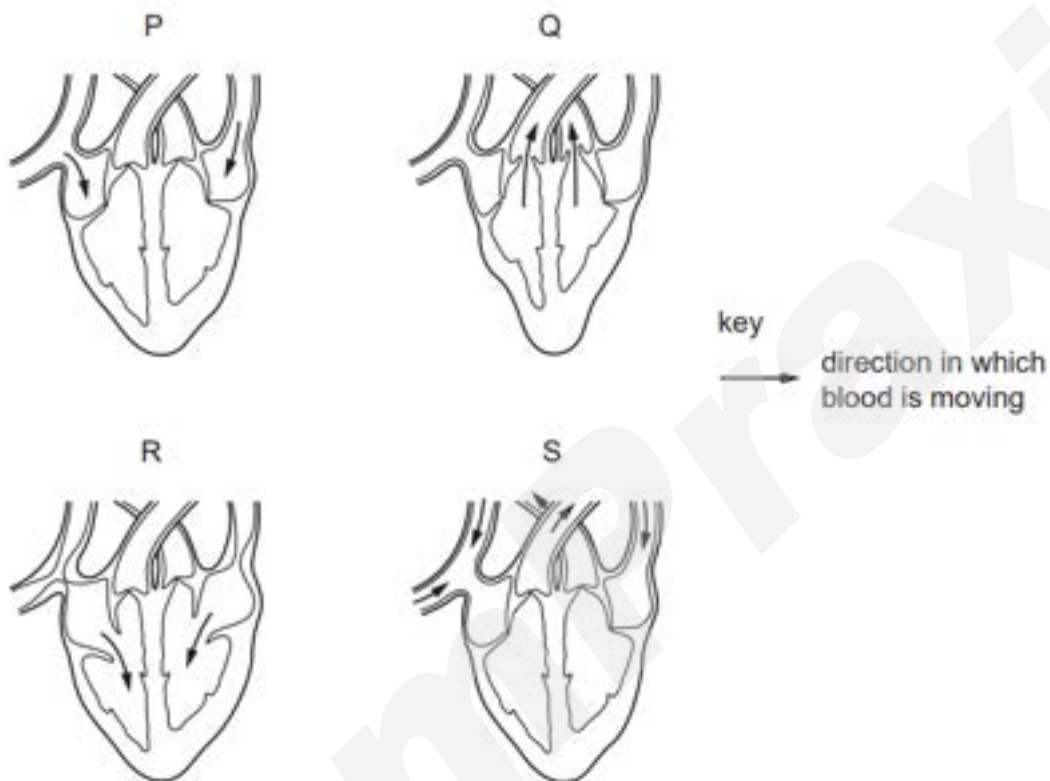
- A** aorta, pulmonary artery, renal artery
- B** aorta, pulmonary vein, renal artery
- C** vena cava, pulmonary artery, renal vein
- D** vena cava, pulmonary vein, renal vein

16 In a person with a low platelet level, which process is slower than normal?

- A** antibody formation
- B** blood clotting
- C** oxygen carriage
- D** phagocytosis

May/June 2015 (11)

18 The diagrams show four different stages in **one** heart beat.



What is the correct order for the stages after stage P?

- A Q → R → S
- B R → Q → S
- C R → S → Q
- D S → R → Q

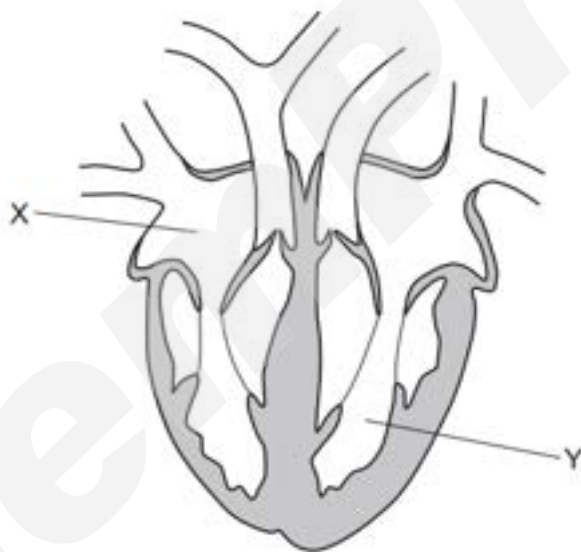
Oct/Nov 2015 (11)

17 Which statement is correct for **most** veins in the human body?

- A** They carry blood at high pressure.
- B** They have a pulse.
- C** They have valves.
- D** They take blood away from the heart.

Oct/Nov 2015 (12)

18 The diagram shows a vertical section through a human heart.



What are X and Y?

	X	Y
A	left atrium	right ventricle
B	left ventricle	right atrium
C	right atrium	left ventricle
D	right ventricle	left atrium

Oct/Nov 2015 (13)

16 The diagrams show some components of the blood of a mammal.

Which component causes the blood to start clotting?

