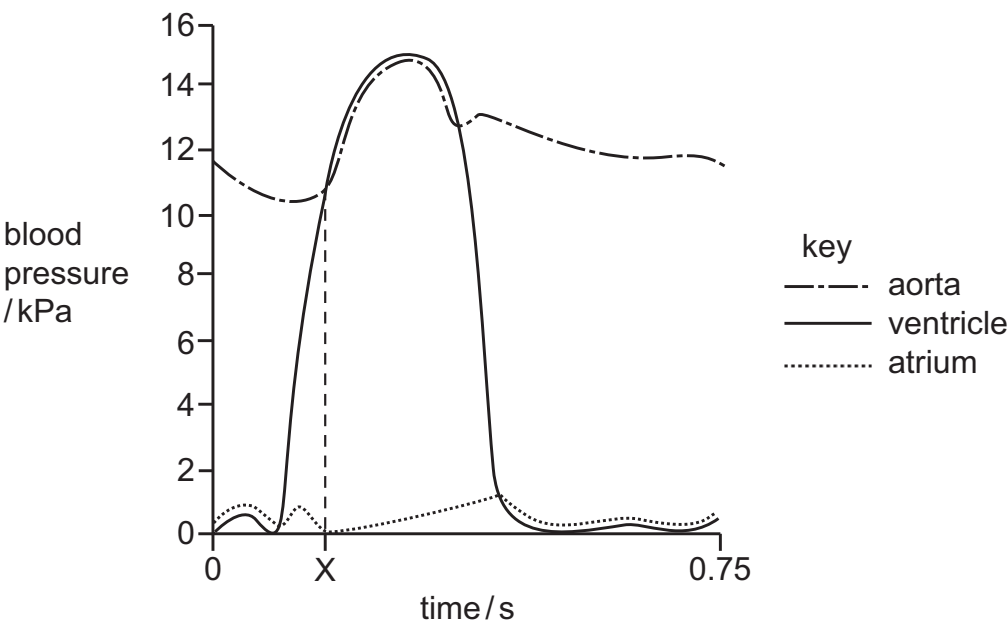


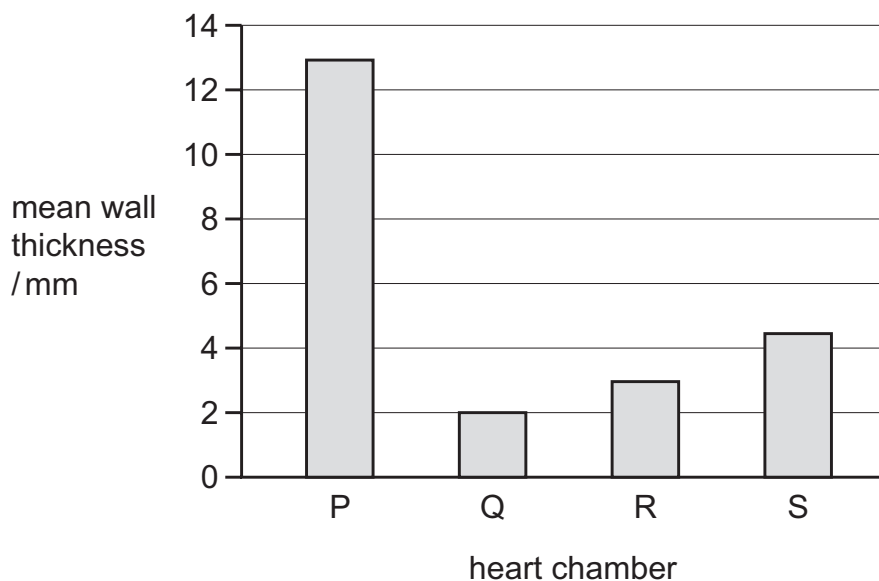
32 The graph shows changes in blood pressure during one cardiac cycle.



What is happening at time X?

	aortic semilunar valve	atrium
A	closing	emptying
B	closing	filling
C	opening	emptying
D	opening	filling

- 35** The bar chart shows the mean thickness of the walls of the main chambers in a mammalian heart.



Which row correctly identifies the heart chambers?

	right atrium	left atrium	right ventricle	left ventricle
A	R	Q	S	P
B	Q	S	R	P
C	R	Q	P	S
D	Q	R	S	P

- 33** A person has a small hole in the septum between the ventricles. This is called a ventricular septal defect (VSD). The person has no other heart defects.

What is the direction of the net flow of blood during ventricular systole in the heart of this person?

- A** left ventricle to left atrium
- B** right ventricle to right atrium
- C** left ventricle to right ventricle
- D** right ventricle to left ventricle

34 Which row correctly describes the features for two of the heart chambers?

	left atrium	left ventricle
A	large force of contraction to allow blood to travel a long distance	large force of contraction to allow blood to travel a long distance
B	small force of contraction as blood only needs to travel a short distance	large force of contraction to allow blood to travel a long distance
C	small force of contraction as blood only needs to travel a short distance	small force of contraction as blood only needs to travel a short distance
D	large force of contraction to allow blood to travel a long distance	small force of contraction as blood only needs to travel a short distance

6 (a) A student studied the structure of a mammalian heart.

The student took a photograph of the left side of a dissected heart as shown in Fig. 6.1.

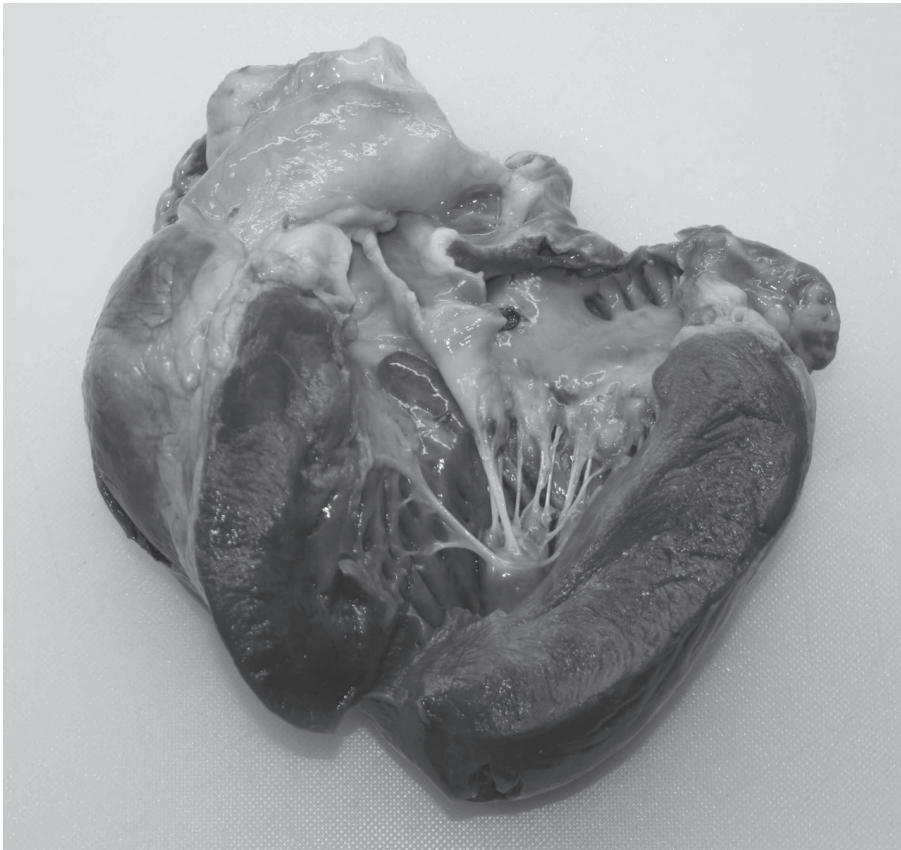


Fig. 6.1

Identify **two** features of the left side of the heart visible in Fig. 6.1 **and** explain how each feature is adapted to the function of the heart.

feature

explanation

.....

.....

.....

feature

explanation

.....

.....

.....

(b) Cardiac muscle is described as myogenic. This means the electrical activity controlling the rhythm of a regular heartbeat begins within the muscle tissue of the heart.

Describe how electrical activity within the heart controls each heartbeat.

[4]

(c) Tissue fluid is formed from blood plasma as it flows through capillaries.

Fig. 6.2 is a diagram of a capillary and some adjacent tissue cells in a capillary network.

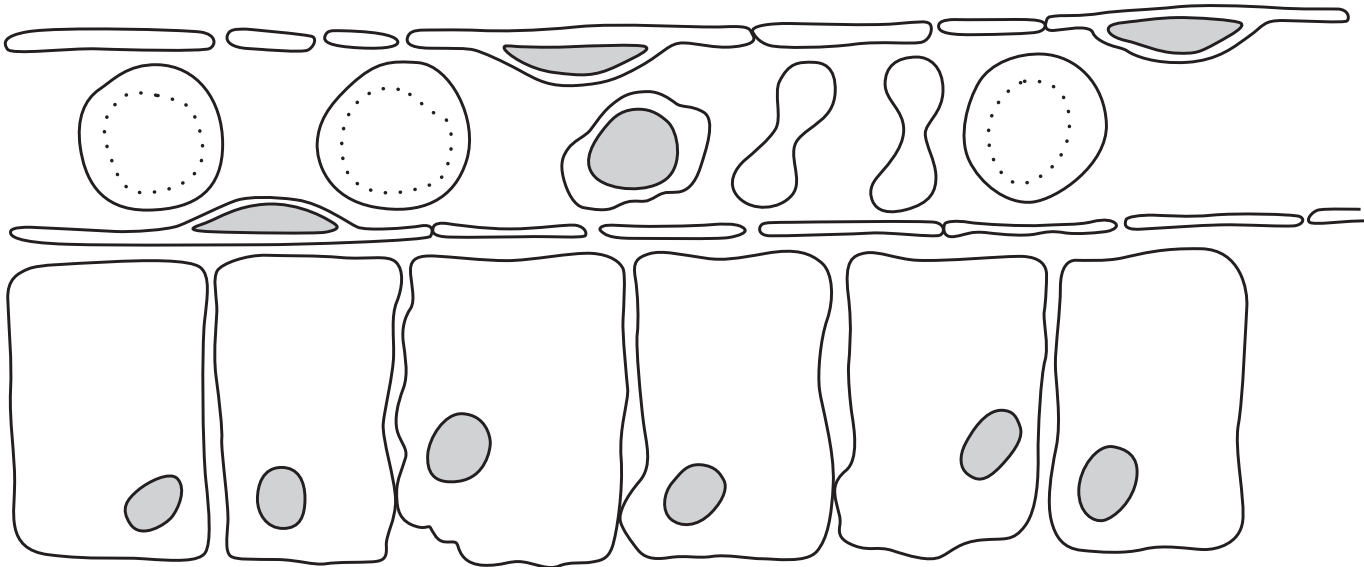


Fig. 6.2

(i) Describe **two** functions of tissue fluid.

(ii) With reference to Fig. 6.2, describe how tissue fluid is formed.

[3]

(d) Measles is a common disease caused by a virus. Vaccination to prevent the disease has been very successful.

(i) A child receives a vaccine for measles.

Explain why only some of the T-lymphocytes in the child respond to the measles vaccine.

..... [2]

(ii) Describe the events that occur in an immune response to a vaccine that result in lymphocytes that provide long-term immunity to measles.

Handwriting practice lines (dotted lines on a grid background).