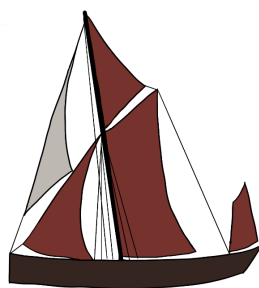

AQA CIRCULATION SYSTEM PAST PAPER QUESTIONS

Science Exams Sorted



Name:		
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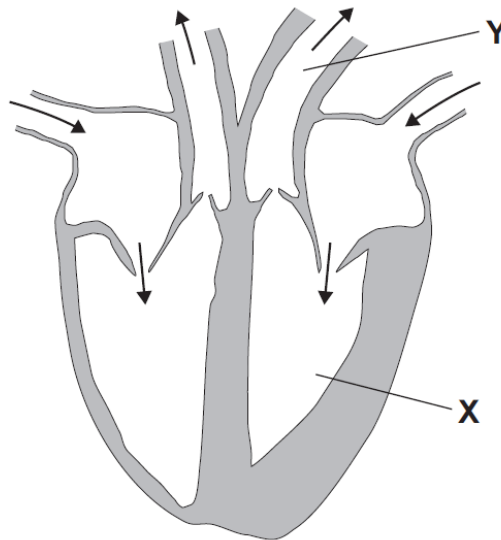
2020

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AQA Circulation System Past Paper Questions

1. Each year people need to have treatment for heart problems.

The figure below shows a human heart.



- a. Name part X in the figure above.

..... (1)

- b. Name part Y in the figure above.

..... (1)

- c. There are valves inside the heart.

What is the function of these valves?

.....
.....
..... (1)

- d. Some patients need to have their heart valves replaced.

Table 1 shows the percentage of patients who died from different causes after having heart valve replacements.

Two types of heart valve were used:

- **mechanical** – made of metal and plastic
- **pig tissue** – made from pig heart tissue on a metal frame.

The data was collected over 15 years and 400 patients were involved.

AQA Circulation System Past Paper Questions

Cause of death	Percentage of patients who died	
	Mechanical valve	Pig tissue valve
Blood clots blocking coronary arteries	9	9
Bleeding	26	15
Second operation	5	15
Bacterial heart infection	4	8
Heart valves stopped working	0	12

Use information from the table above and your own knowledge to answer the following question.

A patient decides to have a mechanical valve replacement rather than a pig tissue valve replacement. Suggest reasons for and against choosing a mechanical valve.

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(4)

e. Some people have narrowed arteries.

Describe how stents can be used to prevent a heart attack in a person with narrowed arteries.

.....

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.....

.....

(2)

AQA Circulation System Past Paper Questions

2. The circulatory system is composed of the blood, blood vessels and the heart.

Urea is transported in the blood plasma.

a. Name two other substances transported in the blood plasma.

.....
.....
(2)

b. Some athletes train at high altitude.

Training at high altitude increases the number of red blood cells per cm^3 of blood.

Explain why having more red blood cells per cm^3 of blood is an advantage to an athlete.

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.....
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.....
.....
(3)

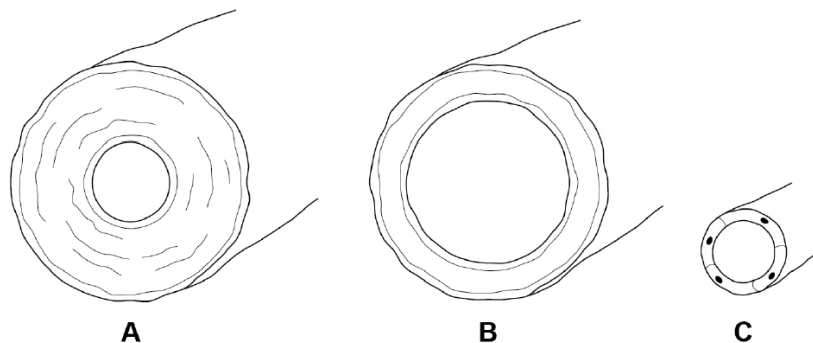
c. Which two blood vessels carry deoxygenated blood?

Tick two boxes.

- Aorta
- Coronary artery
- Pulmonary artery
- Pulmonary vein
- Vena cava

(2)

d. The figure below shows the three types of blood vessel.



AQA Circulation System Past Paper Questions

Which type of blood vessel carries blood into the right atrium?

Tick one box.

A	<input type="checkbox"/>	B	<input type="checkbox"/>	C	<input type="checkbox"/>
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(1)

e. Compare the structure of an artery with the structure of a vein.

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.....

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.....

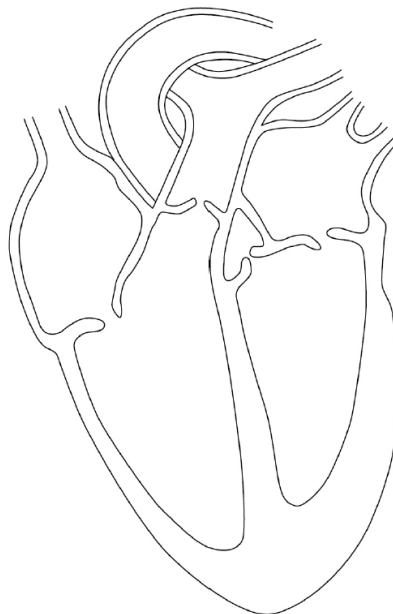
.....

(3)

f. Heart rate is controlled by a group of cells. This group of cells act as a pacemaker.

The figure below shows a section through the heart.

Draw an X on the figure below to show the position of the pacemaker.



(1)

g. A patient may be fitted with an artificial pacemaker.

What condition may be treated using an artificial pacemaker?

.....

.....

(1)

AQA 2018 Higher Paper 1 Q3

AQA Circulation System Past Paper Questions

3. The circulatory system contains arteries and veins.

a. Describe how the structure of an artery is different from the structure of a vein.

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.....

(2)

b. A comparison is made between blood taken from an artery in the leg and blood taken from a vein in the leg.

Give two differences in the composition of the blood.

.....
.....
.....
.....

(2)

c. During operations patients can lose a lot of blood. Patients often need blood transfusions to keep them alive.

The figure below shows information about a new artificial blood product.

Sea worms give hope for people in need of blood transfusions

Scientists have carried out a five-year trial using a new artificial blood product. The scientists have used a protein from sea worms to create the new artificial blood and the results from the trial are very positive. Thousands of sea worms can be grown and collected.

During the trial, mice were given blood transfusions of the artificial blood. The bodies of the mice tolerated the artificial blood and the artificial blood did not cause any side effects.

Suggest two possible advantages of using the new artificial blood, instead of using human blood for a transfusion in humans.

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(2)

AQA 2016 Higher Paper 3 Q6

AQA Circulation System Past Paper Questions

4. The circulatory system transports substances such as glucose and oxygen around the body.

a. Name three other substances that the circulatory system transports around the body.

.....

(3)

b. Blood is a tissue. Blood contains red blood cells and white blood cells.

Name two other components of blood.

.....

(2)

c. The heart is part of the circulatory system.

What type of tissue is the wall of the heart made of?

.....

(1)

d. In this question you will be assessed on using good English, organising information clearly and using specialist terms where appropriate. Every year, many patients need to have heart valve replacements.

The table below gives information about two types of heart valve.

Living human heart valve	Cow tissue heart valve
<ul style="list-style-type: none"> • It has been used for transplants for more than 12 years. • It can take many years to find a suitable human donor. • It is transplanted during an operation after a donor has been found. • During the operation, the patient's chest is opened and the old valve is removed before the new valve is transplanted. 	<ul style="list-style-type: none"> • It has been used since 2011. • It is made from the artery tissue of a cow. • It is attached to a stent and inserted inside the existing faulty valve. • A doctor inserts the stent into a blood vessel in the leg and pushes it through the blood vessel to the heart.

A patient needs a heart valve replacement. A doctor recommends the use of a cow tissue heart valve.

AQA Circulation System Past Paper Questions

5. Blood is part of the circulatory system.

a. Give one function of white blood cells.

.....
.....
.....

(1)

b. Which of the following is a feature of platelets?

Tick one box.

They have a nucleus.

They contain haemoglobin.

They are small fragments of cells.

(1)

c. Urea is transported by the blood plasma from where it is made to where the urea is excreted.

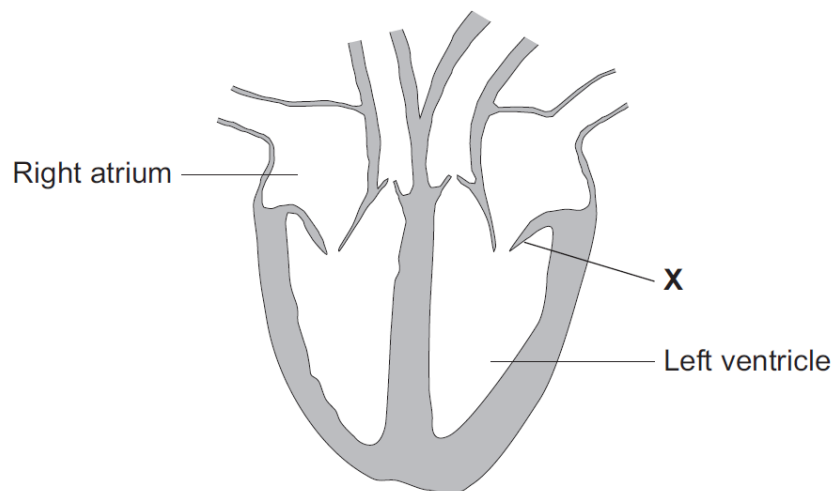
Complete the following sentence.

Blood plasma carries urea from where it is made in the

to the where the urea is removed from the blood.

(2)

The figure below shows a section through the human heart.



Structure X is a valve. If valve X stops working, it may need to be replaced.

AQA Circulation System Past Paper Questions

A scientist is designing a new heart valve. The scientist knows that the valve must be the correct size to fit in the heart.

- d. Suggest three other factors the scientist needs to consider so that the newly designed valve works effectively in the heart.

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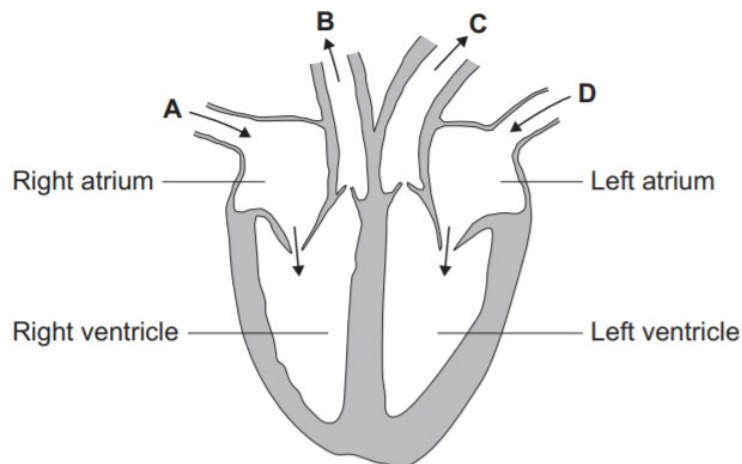
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(3)

AQA 2014 Higher Paper 3 Q4

6. The heart is part of the circulatory system.

The figure below shows a section through the human heart.



- a. Which arrow, A, B, C or D, shows blood leaving the heart in the pulmonary artery to go to the lungs?

..... (1)

- b. Which arrow, A, B, C or D, shows blood from the lungs entering the heart in the pulmonary vein?

..... (1)

- c. Valves in the circulatory system make sure blood only travels in one direction. Name the type of blood vessel that has valves.

..... (1)

AQA 2014 Foundation Paper 3 Q1 b