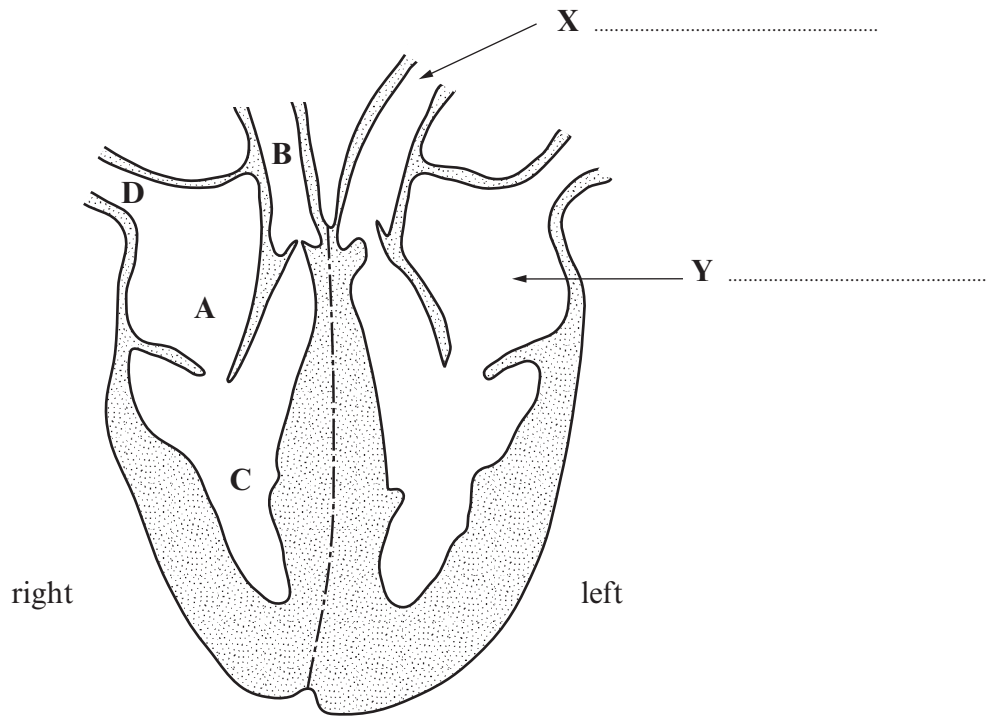


Biology 1.4 - Circulatory System in Humans - Foundation Tier

Question 1.

Examiner
only

(a) The diagram below shows a section through the human heart.



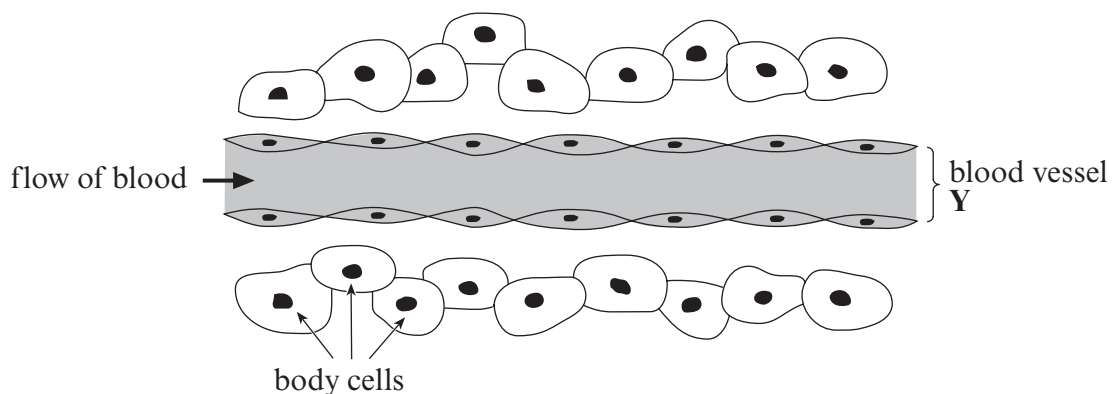
(i) Label **X** and **Y** on the diagram using some of the words below. [2]

atrium ventricle valve aorta

(ii) From the diagram, write letters **A**, **B**, **C** and **D** in the boxes below, in the correct order to show the path of the blood as it flows through the right side of the heart. [1]



(b) The diagram below shows a small blood vessel found in the body.



(i) Name blood vessel **Y**. Underline the correct answer. [1]

artery capillary vein

(ii) Choose words from the list to complete the sentences below. [3]

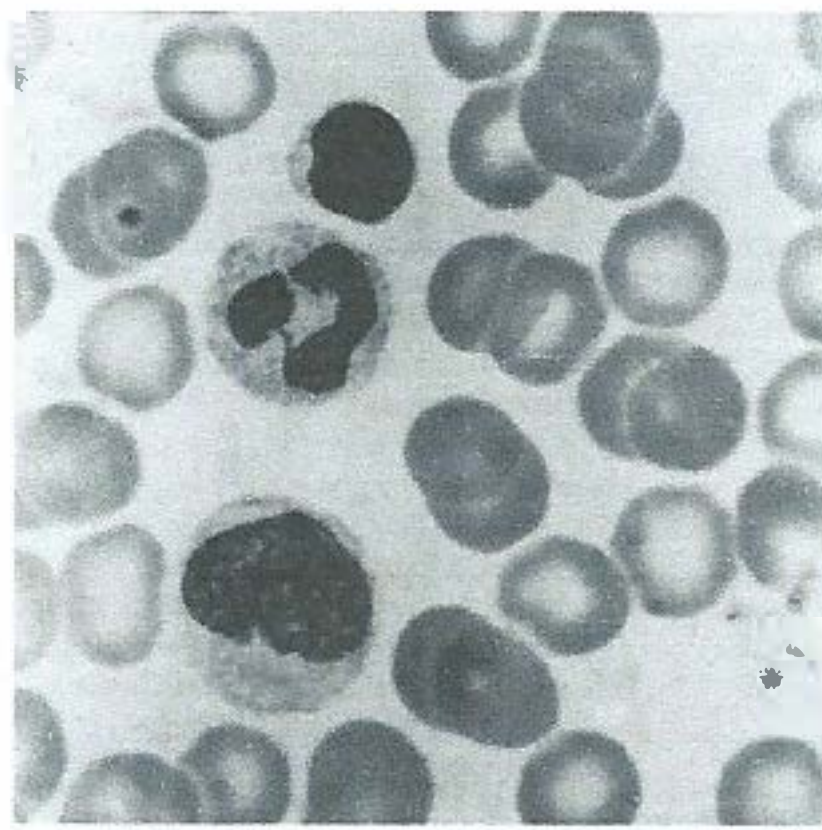
carbon dioxide, oxygen, diffusion, protein.

As the blood flows through the body organs which cells need, passes out of the blood and, which cells produce, passes into the blood. These substances enter and leave the blood by

Question 2.

The photograph shows some blood cells.

Examiner
only



(a) Red blood cells are adapted to carry oxygen.

One way they are adapted is their small size.

This allows them to pass through very small capillaries.

Describe **one other** way red blood cells are adapted to carry oxygen.

.....
..... [1]

(b) The blood also contains white blood cells.

White blood cells can be produced rapidly if the body is infected.

What would happen if white blood cells were **not** produced rapidly?

..... [1]

(c) If a person has heart disease their heart can **not** do its job properly.

(i) What happens to the flow of blood around your body if your heart can **not** do its job properly?

..... [1]

(ii) The heart will not do its job properly if the heart muscle is not getting enough oxygen.

This can be caused by a build-up of a fatty substance in the arteries supplying the heart muscle.

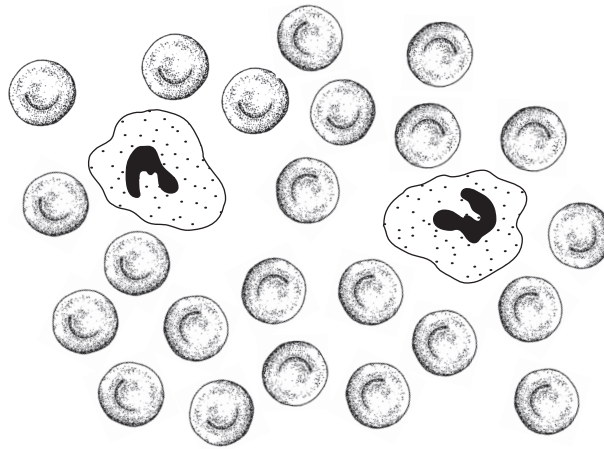
Write down the name of this fatty substance.

..... [1]

Question 3.

The diagram shows a blood smear as seen through a light microscope.

Examiner
only



(a) Complete the table below about the different parts of the blood.

[4]

name of part	function
red cell
.....	produce antibodies
phagocyte
platelets

(b) Explain why the centre of a red blood cell appears paler than the surrounding cytoplasm when seen through a light microscope. [2]

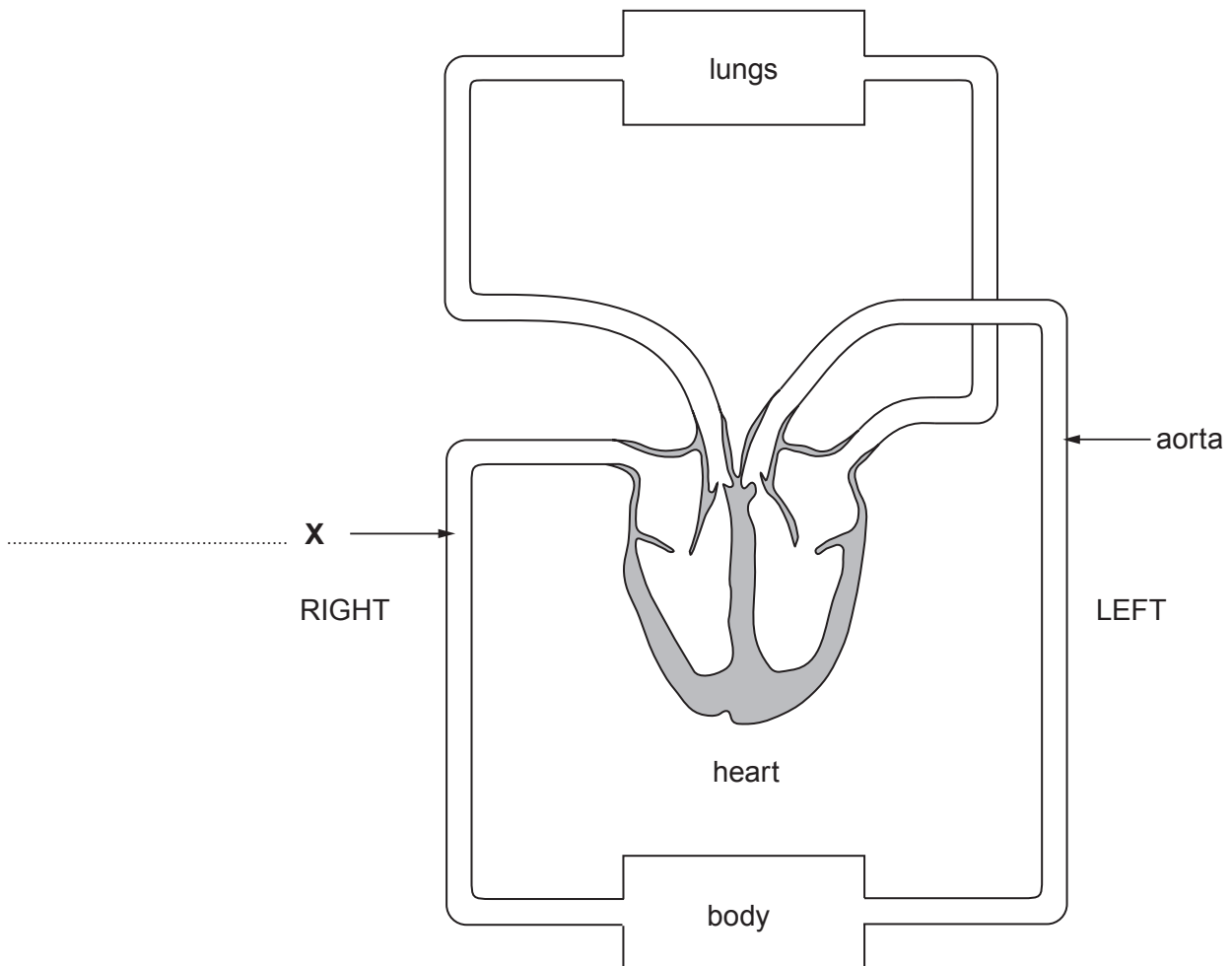
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Question 4.

Examiner
only

- (a) The diagram below shows the circulatory system of the human body. This is called a *double circulation*. Some structures have been labelled.



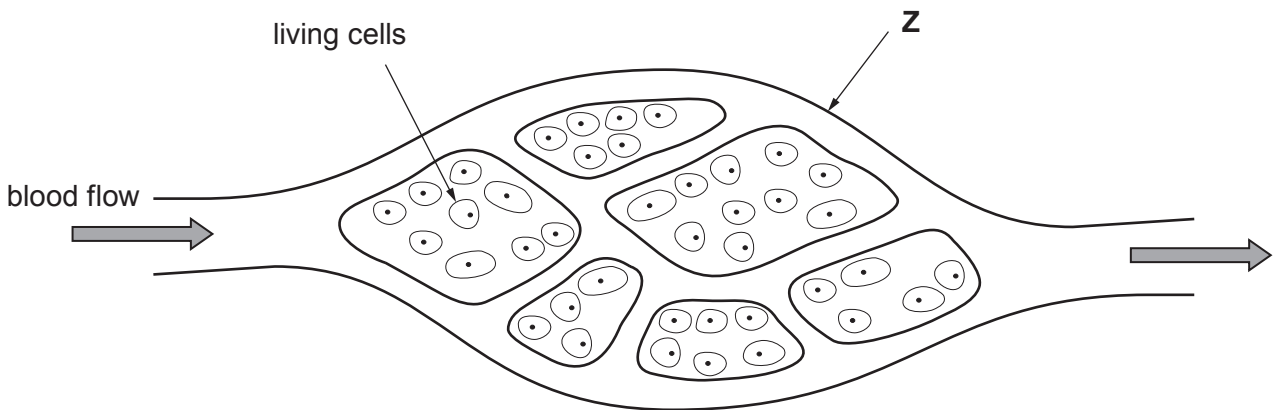
On the diagram above:

- (i) label blood vessel **X**; [1]
- (ii) draw arrows on the aorta and blood vessel **X** to show the direction of blood flow. [1]

(iii) Complete the table below which shows features of the double circulatory system. [2]

Name of circulation	Pathway of blood flow
Pulmonary circulation	Blood leaves the heart and travels to the
..... circulation	Blood leaves the heart and travels to the body organs.

(b) Small blood vessels bring blood to the living cells in every organ of the body, as shown in the diagram below.



(i) Name the type of blood vessel labelled **Z**. [1]

.....

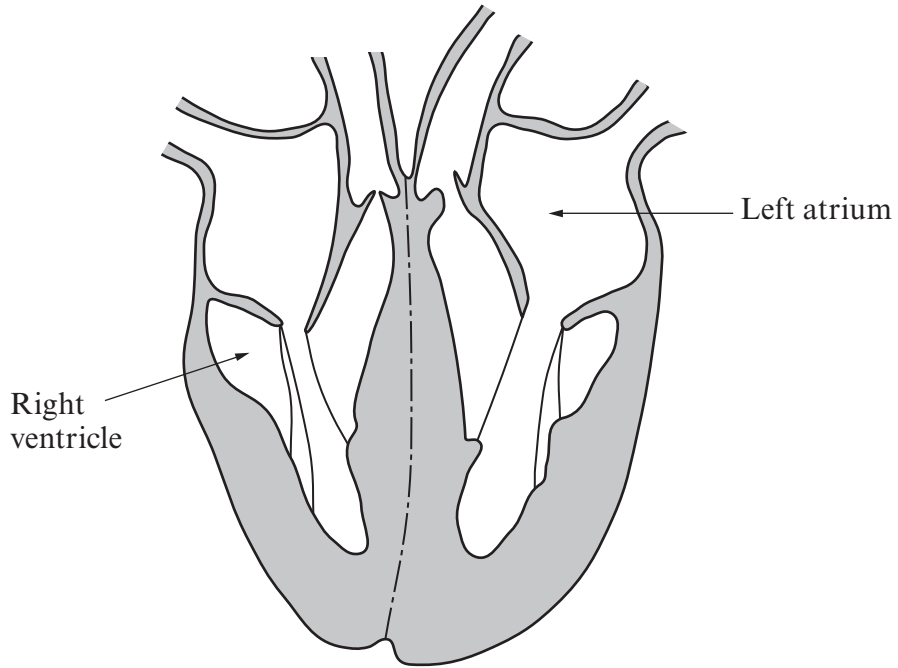
(ii) Explain how the structure of blood vessel **Z** allows substances to pass easily into and out of the living cells. [2]

.....

Question 5.

The diagram shows the human heart in section.

Examiner
only



Describe and explain how blood in the right ventricle travels to the left atrium. [6 QWC]

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