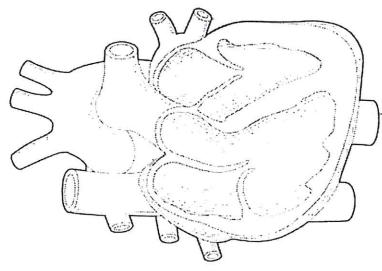


1/42 ___%

B2.2 Circulatory System ~ Test

1. The heart pumps blood around the body. [2]

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



© Paul Weatton/ Science Photo Library

On the diagram, label the left ventricle and the pulmonary artery. [2]

Blood passes through the heart twice during one complete circuit of the body.

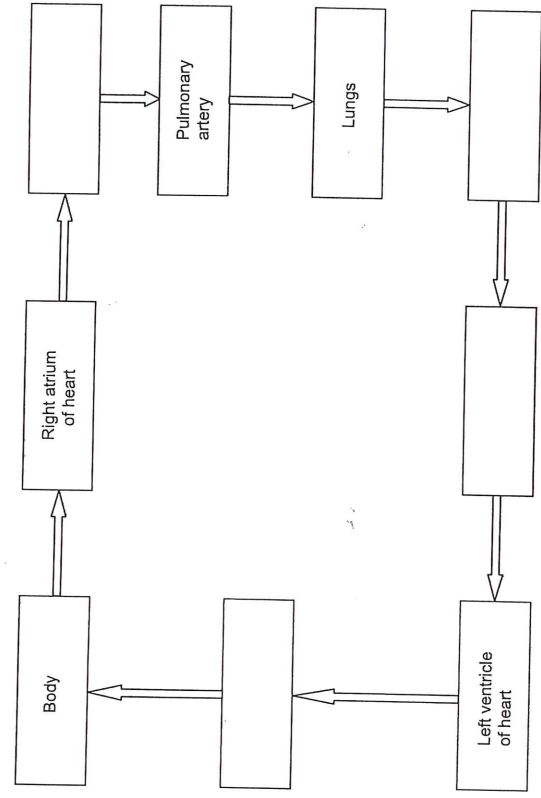
(b) What term is used to describe the passage of blood twice through the heart during one complete circuit of the body? [1]

Examiner Only	
Marks	Remark

B2.2 Circulatory System

B

(c) In the diagram below, fill in the empty boxes to show the passage of blood through the heart and around the body. The empty boxes represent heart chambers or blood vessels.



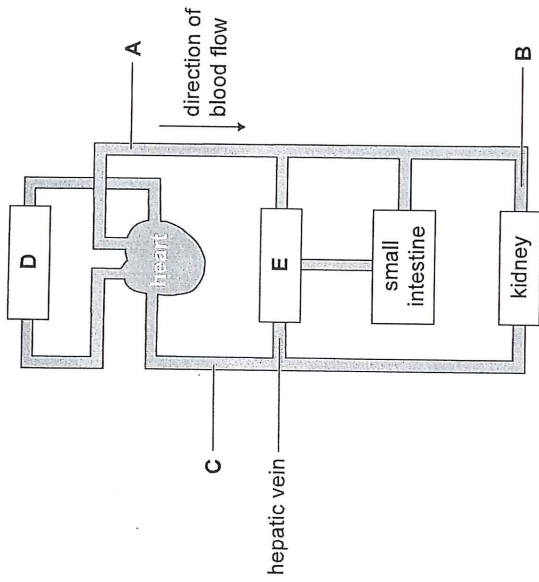
[4]

Examiner Only	
Marks	Remark

H B² '14

H B² '14

2. The diagram shows part of the circulatory system in the body.



(a) (i) Name blood vessels A, B and C.

- A _____
- B _____
- C _____

[3]

(ii) Draw an arrow on the diagram to show the direction of blood flow in blood vessel C. [1]

(iii) Name organs D and E.

- D _____
- E _____

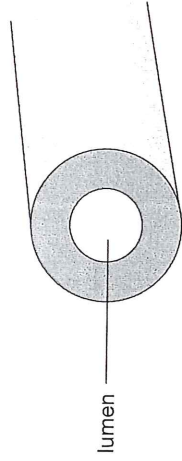
[2]

(iv) Name the upper and lower chambers of the heart.

- Upper chambers _____
- Lower chambers _____

[2]

(b) The diagram shows a cross section of a blood vessel. The centre of the blood vessel, that blood flows through, is called the lumen.



© Chief Examiner

The table gives information about the three types of blood vessels.

Blood vessel	Diameter of lumen/ cm	Rate of blood flow/ cm/s
Vein	0.6	3
Capillary	0.000008	less than 0.1
Artery	0.4	25

(i) Describe how the rate of blood flow in the vein and capillary changes with the diameter of the lumen.

- _____ [1]
- _____ [1]

(ii) Name the type of blood vessel that allows exchange of materials between the blood and body tissues.

- _____ [1]

[Turn over]

(iii) Name the **type** of blood vessel that carries blood under the highest pressure.

[1]

(iv) Name the structures found in veins that prevent the backflow of blood.

[1]

(c) If fatty deposits build up in a blood vessel going to the brain it can cause a stroke.

Describe how this build-up of fatty deposits can cause a stroke.

[4]

3. Two boys, James and Luke, exercised for ten minutes. The table shows data for the two boys taken before and immediately after exercise. Recovery time is the time taken for the pulse rate to return to the same rate as before exercise.

	James		Luke	
	Before exercise	After exercise	Before exercise	After exercise
Pulse rate/beats per minute	70	160	60	150
Recovery time/minutes		12		7

(a) Luke is fitter than James. Use the information in the table to describe **three differences** that support this statement.

(b) Give **two** ways the heart benefits from regular exercise.

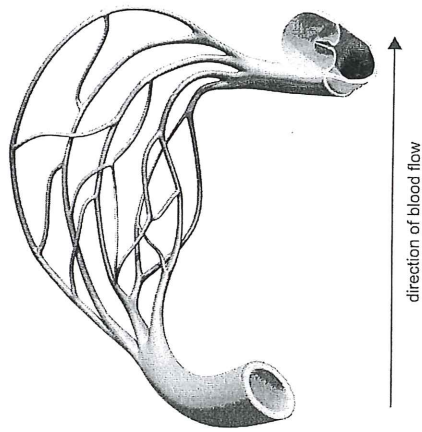
1. _____ [2]

2. _____ [2]

[Turn over

B2.2 Circulatory System

4. (a) The diagram below shows an artery and a vein connected by capillaries. Veins have valves. Arteries and capillaries do not have valves.



- (i) Using the information given and your knowledge, label the vein on the diagram. [1]

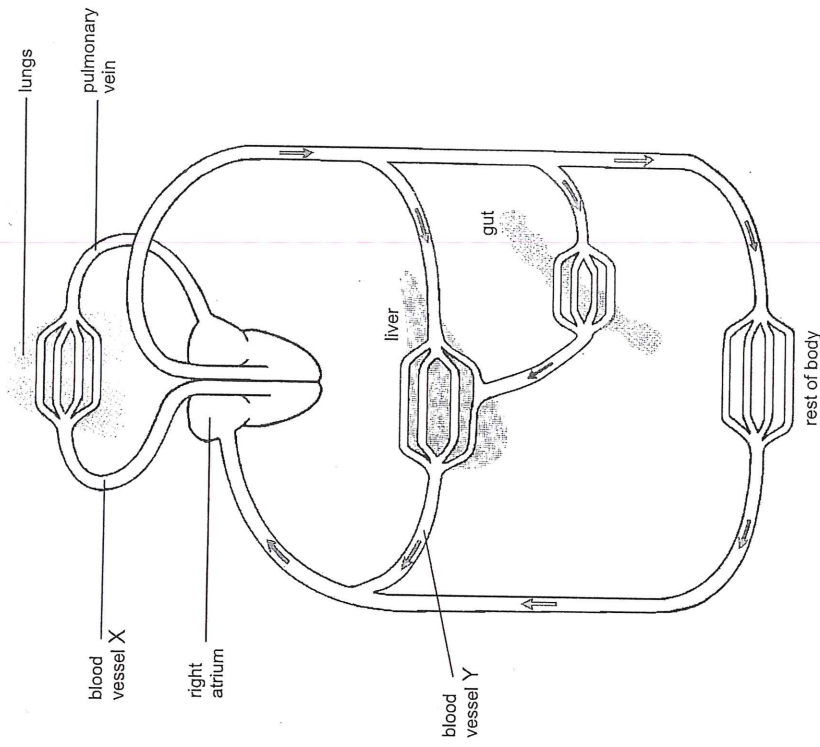
- (ii) What is the function of valves in a vein?

_____ [1]

- (iii) Give two differences between blood flowing in an artery and a vein.

1. _____ [2]
2. _____

5. (a) The diagram shows some of the blood vessels in the body.



© Biology by G & M Jones published by Cambridge University Press, 1995. ISBN 0521456185

- (i) Explain why this circulation is called a double circulation.

_____ [2]

- (ii) Name blood vessels X and Y.

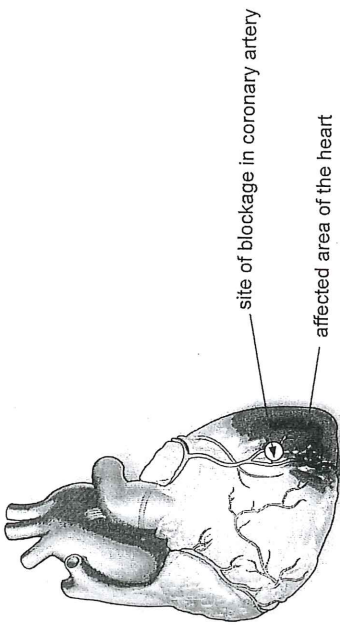
X _____ [2]
Y _____

B2 F14

B2 F13

4

- (b) The diagram shows the site of a blockage in the coronary artery of the heart which can cause a heart attack.



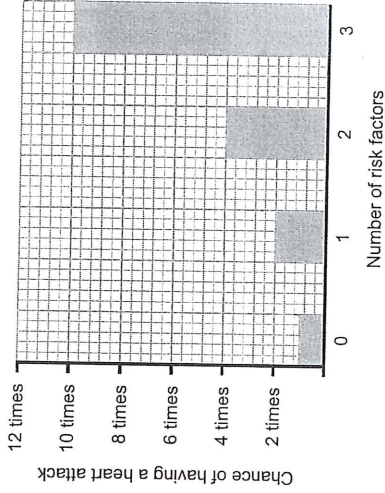
© Nucleus Medical art, Visuals Unlimited / Science Photo Library

- (i) Name the substance that blocks the coronary artery.
 _____ [1]
- (ii) Explain why this blockage can cause a heart attack.

 _____ [2]

B2 F13

Certain risk factors increase your chance of having a heart attack. The graph shows how the number of risk factors affect the chance of someone having a heart attack.



Source: National Heart, Lung and Blood Institute; National Institutes of Health; U.S. Department of Health and Human Services.

- Use the information in the graph to answer the following questions.
- (iii) Eddie is a smoker who is obese and doesn't exercise. By how many times has he increased his chance of having a heart attack?
 _____ [1]
- (iv) Amy's lifestyle has two risk factors that increase her chance of having a heart attack. Her doctor advises her to make one change in her lifestyle. Give the decrease in chance of Amy having a heart attack if she follows her doctor's advice.
 _____ [1]
- (c) A blockage in the blood vessels of which organ leads to a stroke?
 _____ [1]

B2 F13