Transport in animals – 2021 IGCSE 0610

1. March/2021/Paper_12/No.19

Which structures ensure the one-way flow of blood in the human circulatory system?

A alveoli

B capillaries

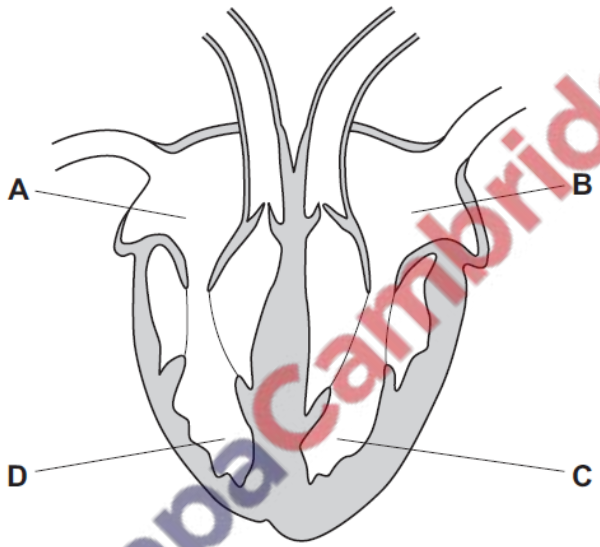
C synapses

D valves

2. March/2021/Paper_12/No.20

The diagram shows a section through the heart.

Which part pumps blood to the aorta?



3. March/2021/Paper_32/No.7

(a) Fig. 7.1 is a diagram of the circulatory system.

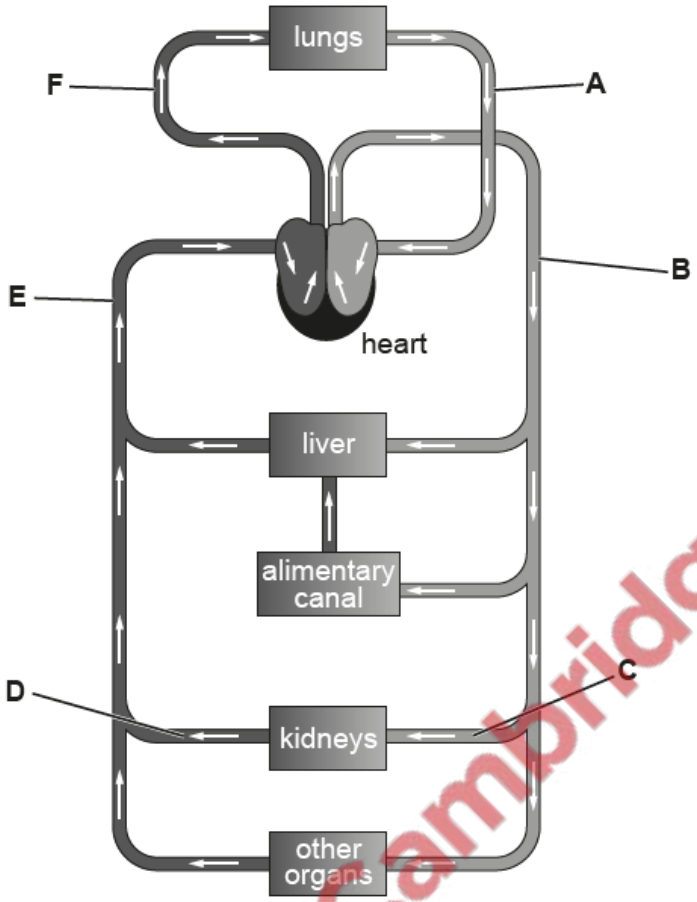


Fig. 7.1

(i) State the names of the blood vessels labelled **A**, **C** and **E** in Fig. 7.1.

A .....

C .....

E .....

[3]

(ii) State the letter in Fig. 7.1 that identifies the blood vessel that contains the highest oxygen concentration.

..... [1]

(b) Describe **three** ways the structure of arteries differs from the structure of veins.

1 .....

.....

2 .....

.....

3.....

.....

[3]

(c) White blood cells are one of the components of blood.

(i) State **two** functions of white blood cells.

1 .....

2 .....

[2]

(ii) State **two other** main components of blood.

1 .....

2 .....

[2]

[Total: 11]

4. March/2021/Paper_42/No.3

(a) The activity of the heart can be monitored using different methods.

Fig. 3.1 shows two ECG traces. One trace was recorded when the person was at rest and the second trace was recorded during exercise.

The length of time taken for one heart beat is indicated in Fig. 3.1 on the ECG trace recorded at rest.

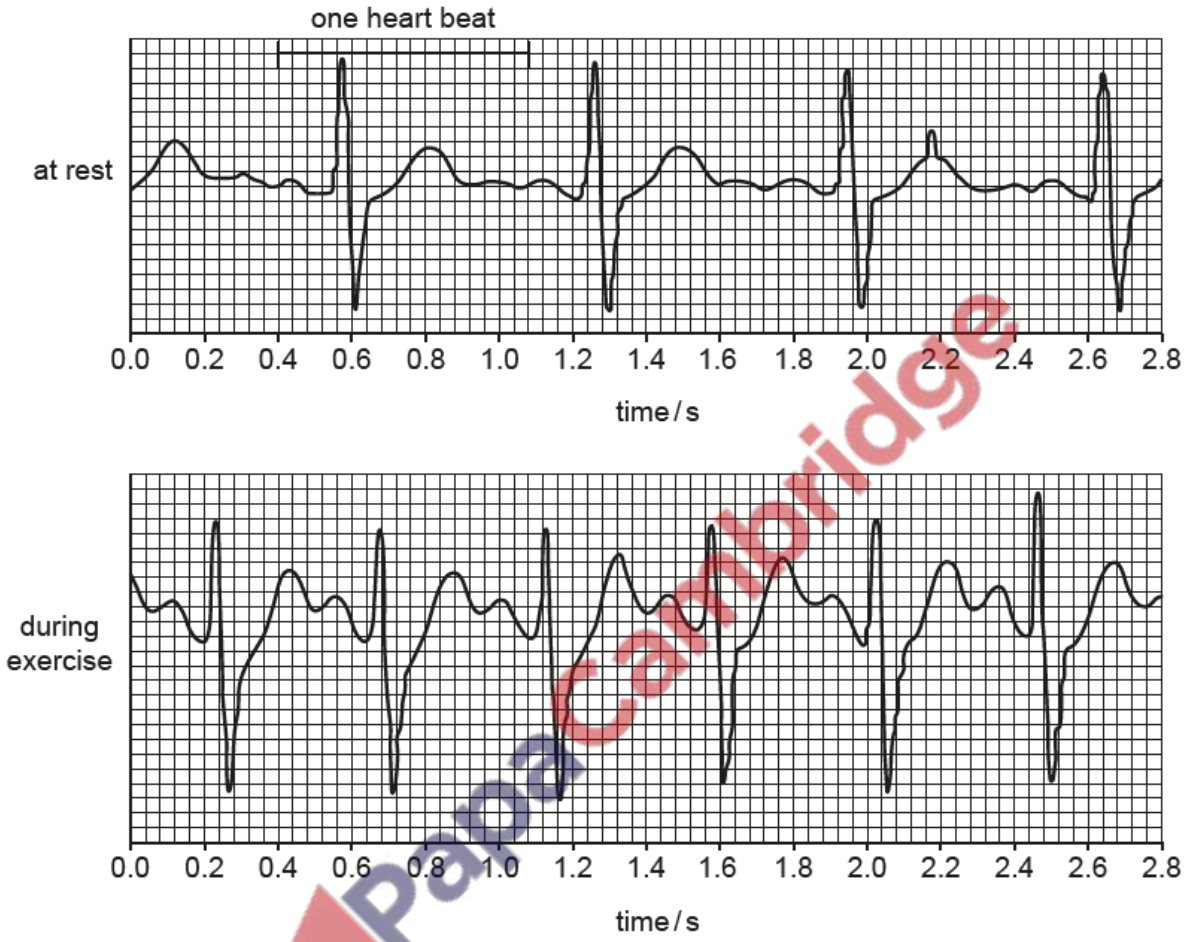


Fig. 3.1

(i) Estimate the resting heart rate of the person from their ECG trace in Fig. 3.1.

Space for working.

..... beats per minute
[2]

(ii) Explain why the ECG trace recorded during exercise differs from the ECG trace recorded at rest.

.....

.....

.....

.....

.....

.....

.....

.....

..... [4]

(iii) Suggest **one other** way of monitoring the activity of the heart.

.....

..... [1]

(b) If exercise is very intense an oxygen debt is formed.

(i) Complete the sentence.

An oxygen debt results in a build-up of ..... in the

..... during vigorous exercise.

[2]

(ii) Outline how the body removes an oxygen debt.

.....

.....

.....

.....

.....

.....

.....

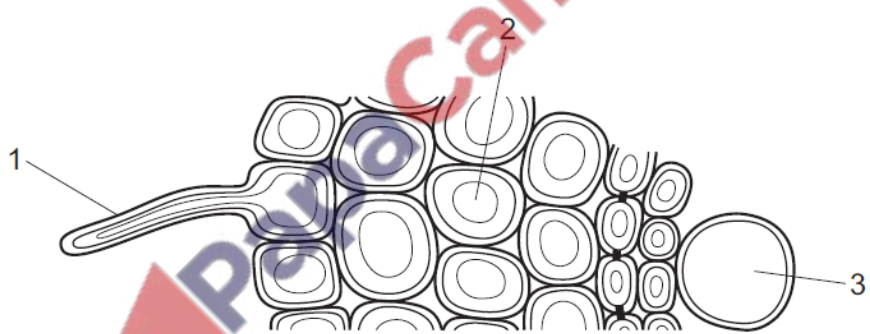
.....

..... [4]

[Total: 13]

5. June/2021/Paper_11/No.17

The diagram shows part of a cross-section of a root.

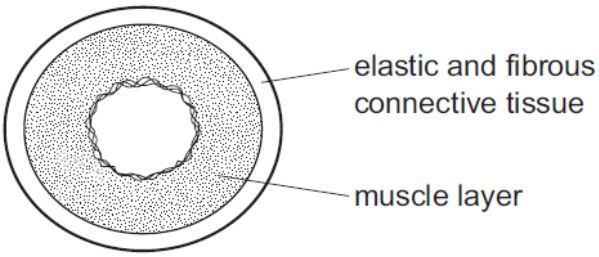


What are cells 1, 2 and 3?

	1	2	3
A	root cortex cell	root hair cell	mesophyll cell
B	root hair cell	root cortex cell	xylem
C	root hair cell	root cortex cell	mesophyll cell
D	root cortex cell	root hair cell	xylem

6. June/2021/Paper_11/No.20

The diagram shows a cross-section through a human blood vessel.



Which type of blood vessel does the diagram show?

A an artery

B a capillary

C a vein

D a ventricle

7. June/2021/Paper_11/No.21

What is a function of some white blood cells?

A to carry glucose

B to carry oxygen

C to produce antibiotics

D to produce antibodies

8. June/2021/Paper_12/No.19

How does blood enter the heart?

A through arteries into the atria

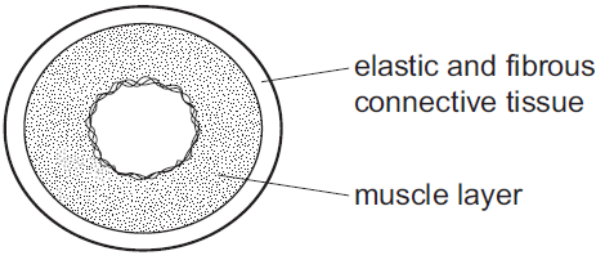
B through arteries into the ventricles

C through veins into the atria

D through veins into the ventricles

9. June/2021/Paper_12/No.20

The diagram shows a cross-section through a human blood vessel.



Which type of blood vessel does the diagram show?

A an artery

B a capillary

C a vein

D a ventricle

10. June/2021/Paper_13/No.21

What is a function of some white blood cells?

A to carry glucose

B to carry oxygen

C to produce antibiotics

D to produce antibodies

11. June/2021/Paper_13/No.19

Through which blood vessels does blood flow into the heart?

1 pulmonary artery

2 pulmonary vein

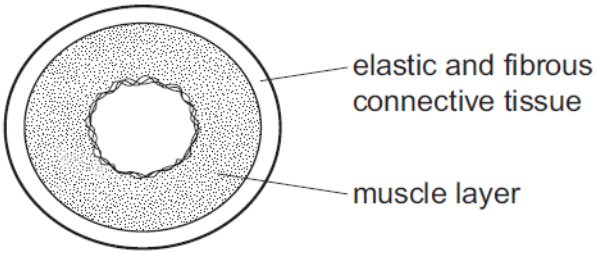
3 vena cava

4 aorta

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

12. June/2021/Paper_13/No.20

The diagram shows a cross-section through a human blood vessel.



Which type of blood vessel does the diagram show?

A an artery

B a capillary

C a vein

D a ventricle

13. June/2021/Paper_13/No.21

What is a function of some white blood cells?

A to carry glucose

B to carry oxygen

C to produce antibiotics

D to produce antibodies

14. June/2021/Paper_22/No.9

Which element is found in proteins but **not** carbohydrates?

A carbon

B hydrogen

C nitrogen

D oxygen

15. June/2021/Paper_22/No.20

What is the sequence of organs that blood passes through during one circulation of the body of a fish?

A muscle → heart → gill → muscle

B muscle → gill → heart → muscle

C muscle → heart → gill → heart → muscle

D muscle → gill → heart → gill → muscle

16. June/2021/Paper_22/No.27

A person's skin looks more red in a warm environment than it does in a cool environment.

Which explanation is correct?

A The arterioles supplying capillaries in the skin vasodilate and less blood flows to the skin surface.

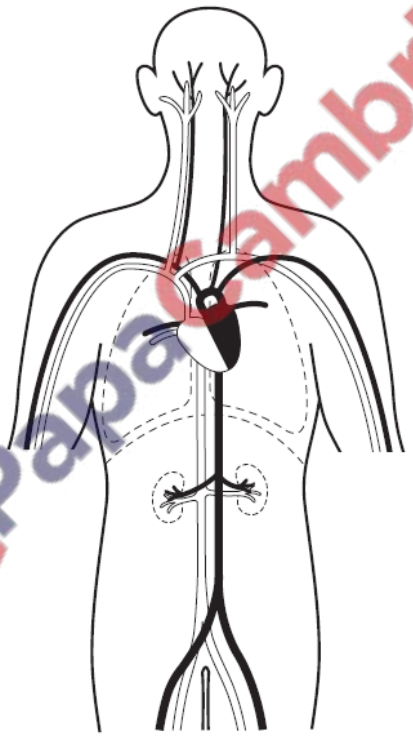
B The arterioles supplying capillaries in the skin vasodilate and more blood flows to the skin surface.

C The arterioles supplying capillaries in the skin vasoconstrict and more blood flows to the skin surface.

D The arterioles supplying capillaries in the skin vasoconstrict and less blood flows to the skin surface.

17. June/2021/Paper_23/No.5

The diagram shows some of the blood vessels and other structures in the human body.



The blood vessels shown are all parts of the same

A cell.

B organ.

C organ system.

D tissue.

18. June/2021/Paper_23/No.19

Through which blood vessels does blood flow into the heart?

1 pulmonary artery

2 pulmonary vein

3 vena cava

4 aorta

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

19. June/2021/Paper_23/No.20

What is an angioplasty?

A a recording of the heart's electrical activity to check for abnormalities

B an operation to insert a new vessel that diverts blood around a narrowed section

C the insertion of a tube into a blood vessel to allow blood to flow more freely

D the widening of a blood vessel by means of a balloon-like device

20. June/2021/Paper_31/No.5

(a) Fig. 5.1 is a diagram of a human heart.

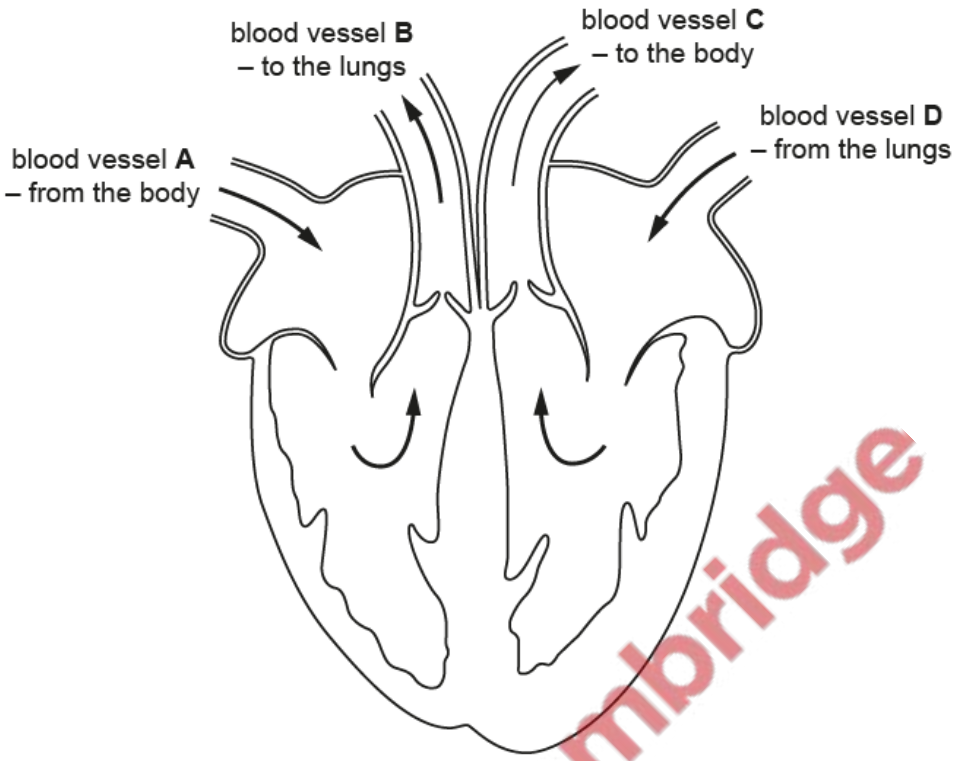


Fig. 5.1

(i) Use label lines and labels to identify these structures on Fig. 5.1:

- **atrium**
- **septum**
- **ventricle**
- **valve**

[4]

(ii) Identify the letter or letters of all the blood vessels from Fig. 5.1, that:

are arteries .....

is the pulmonary vein ..... .

[2]

(b) The activity of the heart can be monitored by measuring the pulse rate.

State **two other** ways of monitoring the activity of the heart.

1 .....

2 .....

[2]

(c) Coronary heart disease (CHD) is caused by a blockage of blood vessels in the heart.

(i) State the name of the blood vessels that become blocked.

..... [1]

(ii) State **three** risk factors for developing CHD.

1 .....

2 .....

3 .....

[3]

[Total: 12]

21. June/2021/Paper_32/No.6

(a) The activity of the heart can be monitored by measuring the pulse rate.

Two students measured their pulse rates before, during and after exercise.

The results are shown in Fig. 6.1.

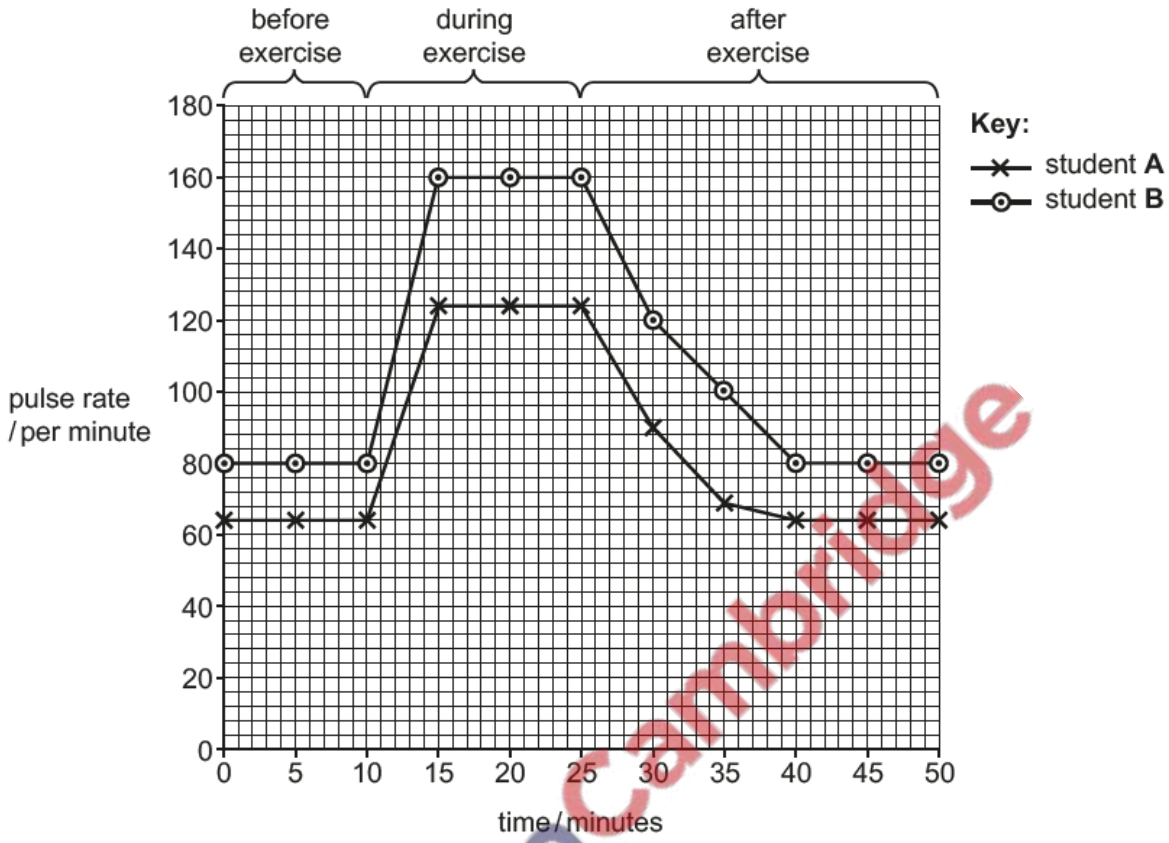


Fig. 6.1

(i) Describe the changes in the pulse rates shown in Fig. 6.1 for student **A** and student **B**.

.....

.....

.....

.....

.....

.....

..... [4]

(ii) Calculate the percentage change in the pulse rate between 0 and 15 minutes for student **A**.

Give your answer to the nearest whole number.

Space for working.

..... %
[3]

(iii) State **two** other methods that can be used to monitor the activity of the heart.

1 .....

2 .....
[2]

(b) Exercise levels, environmental temperature and changes in water intake can affect the volume and concentration of urine produced.

Complete the sentences by circling the correct words **in bold**.

The first sentence has been done for you.

More exercise causes the volume of urine to **increase** / (**decrease**) / **stay the same** and the concentration of urine to (**increase**) / **decrease** / **stay the same**.

A greater intake of water causes the volume of urine to **increase** / **decrease** / **stay the same** and the concentration of urine to **increase** / **decrease** / **stay the same**.

A higher environmental temperature causes the volume of urine to **increase** / **decrease** / **stay the same** and the concentration of urine to **increase** / **decrease** / **stay the same**.
[2]

[Total: 11]