Transport in animals – 2022 November IGCSE 0610 Biology

1. Nov/2022/Paper_11/No.18

Which process occurs during transpiration?

A evaporation of water from the xylem

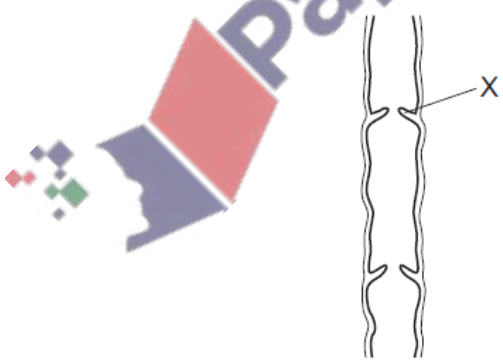
B loss of water by osmosis from the guard cells

C movement of water vapour through the spongy mesophyll by active transport

D movement of water vapour through the stomata by diffusion

2. Nov/2022/Paper_11/No.20

The diagram shows a section of a human vein.



What is the function of the part labelled X?

A to make sure the blood flows to the heart

B to make sure the blood flows to the kidneys

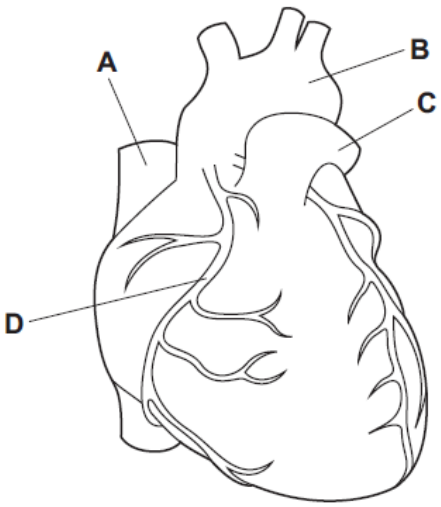
C to make sure the blood flows to the brain

D to make sure the blood flows to the lungs

3. Nov/2022/Paper_12/No.19

The diagram shows the outside of a human heart.

Which structure is a coronary artery?



4. Nov/2022/Paper_12/No.20

The diagram shows a section of a human vein.

What is the function of the part labelled X?

A to make sure the blood flows to the heart

B to make sure the blood flows to the kidneys

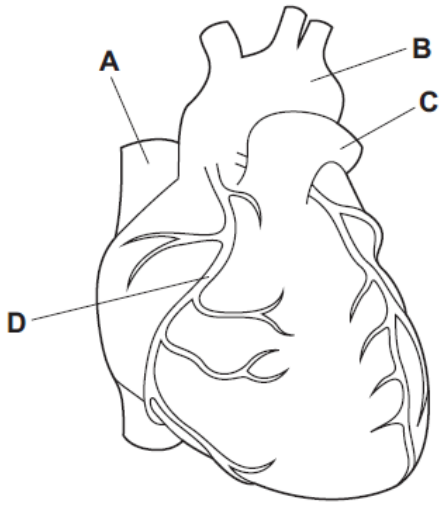
C to make sure the blood flows to the brain

D to make sure the blood flows to the lungs

5. Nov/2022/Paper_13/No.19

The diagram shows the outside of a human heart.

Which structure is a coronary artery?



6. Nov/2022/Paper_13/No.20

The diagram shows a section of a human vein.

What is the function of the part labelled X?

A to make sure the blood flows to the heart

B to make sure the blood flows to the kidneys

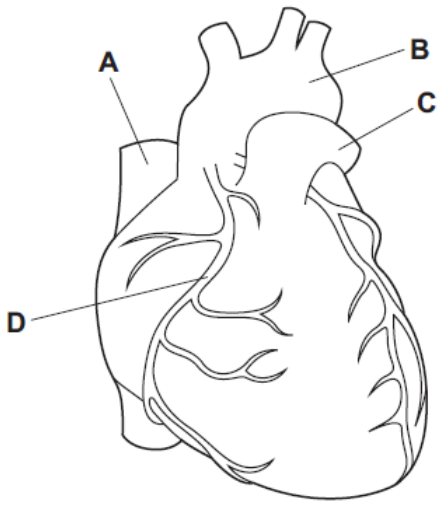
C to make sure the blood flows to the brain

D to make sure the blood flows to the lungs

7. Nov/2022/Paper_21/No.17

The diagram shows the outside of a human heart.

Which structure is a coronary artery?



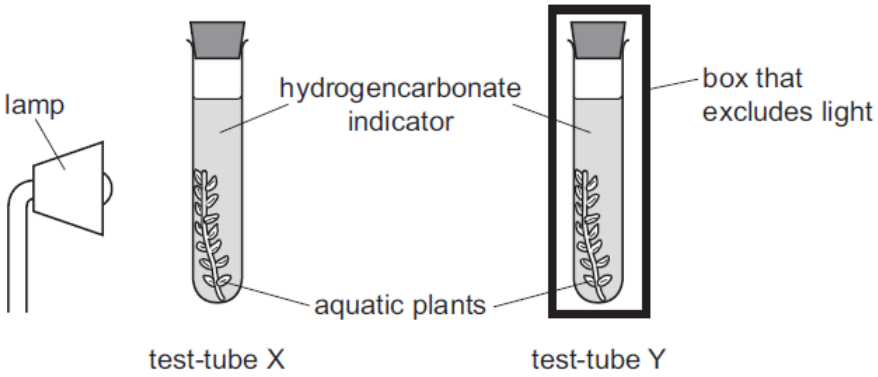
8. Nov/2022/Paper_21/No.18

What happens in the heart when blood flows from the atria to the ventricles?

	atria muscles	atrioventricular valves	ventricle muscles
A	contract	close	relax
B	contract	open	relax
C	relax	close	contract
D	relax	open	contract

9. Nov/2022/Paper_23/No.11

Two test-tubes were filled with hydrogencarbonate indicator. An aquatic plant was placed into each test-tube and the test-tubes were sealed with bungs, as shown.



Test-tube X was illuminated and test-tube Y was kept in the dark. The results are shown.

test-tube	colour of the hydrogencarbonate indicator	
	at the start of the investigation	at the end of the investigation
X	orange	red
Y	orange	yellow

What causes the colour changes in the hydrogencarbonate indicator in X and Y?

	X	Y
A	a decrease in the concentration of carbon dioxide	an increase in the concentration of carbon dioxide
B	a decrease in the concentration of oxygen	an increase in the concentration of oxygen
C	an increase in the concentration of carbon dioxide	a decrease in the concentration of carbon dioxide
D	an increase in the concentration of oxygen	a decrease in the concentration of oxygen

10. Nov/2022/Paper_23/No.12

The substances listed are found in the leaf of a plant.

Which substance is obtained from the soil?

A carbon dioxide

B chlorophyll

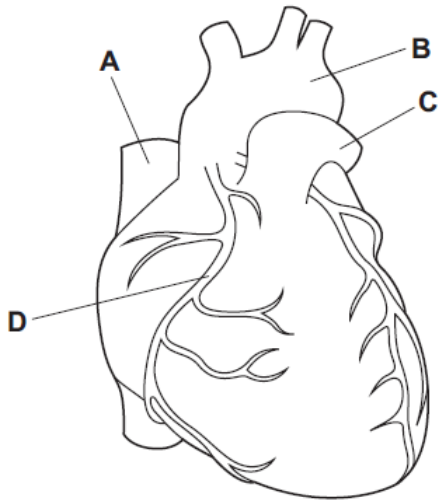
C glucose

D mineral ions

11. Nov/2022/Paper_23/No.17

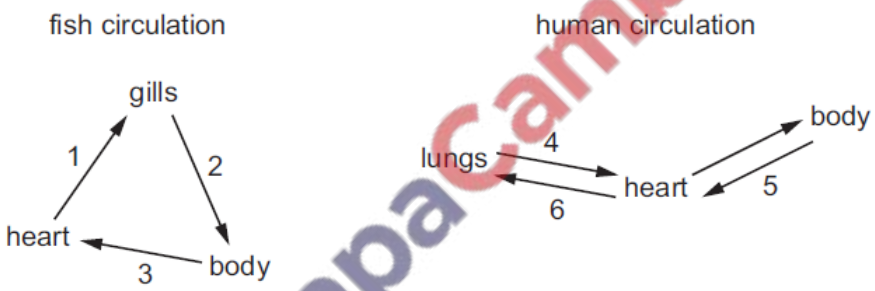
The diagram shows the outside of a human heart.

Which structure is a coronary artery?



12. Nov/2022/Paper_23/No.18

The diagrams represent blood flow in the circulatory systems of fish and humans.



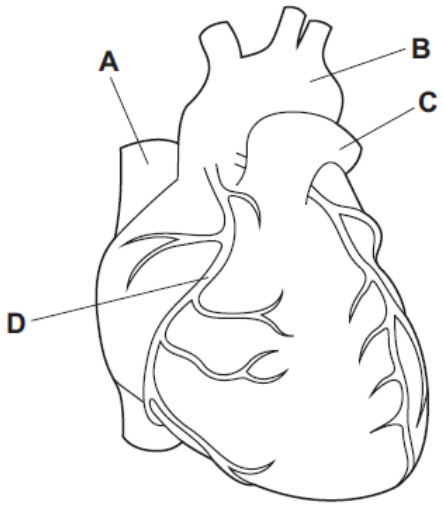
In the fish circulation and the human circulation, where is the oxygen concentration highest?

	fish circulation	human circulation
A	1	4
B	1	5
C	2	4
D	3	6

13. Nov/2022/Paper_22/No.17

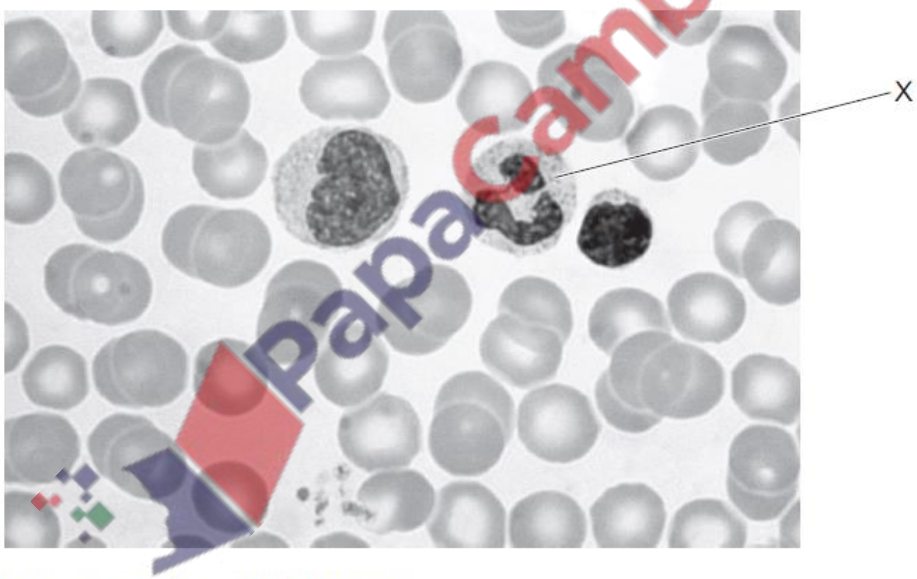
The diagram shows the outside of a human heart.

Which structure is a coronary artery?



14. Nov/2022/Paper_23/No.18

The photomicrograph shows some different types of blood cell.



What is the function of the cell labelled X?

A clotting blood

B phagocytosis

C producing antibodies

D transporting oxygen

15. Nov/2022/Paper_32/No.2(a)

(a) Fig. 2.1 is a photomicrograph of human blood.

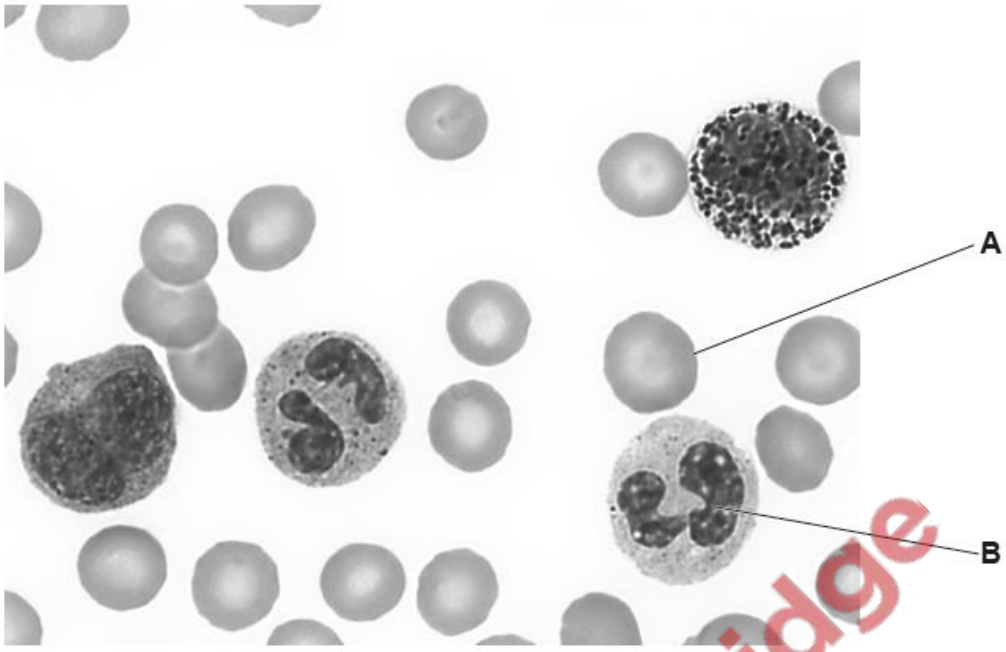


Fig. 2.1

(i) Use the information in Fig. 2.1 to complete Table 2.1 by stating **one** function for each cell.

Table 2.1

identifying letter in Fig. 2.1	function
A	
B	

[2]

(ii) State the name of the component of blood that transports the cells shown in Fig. 2.1.

..... [1]

16. Nov/2022/Paper_33/No.6

Fig. 6.1 is a diagram of a section through a human heart.

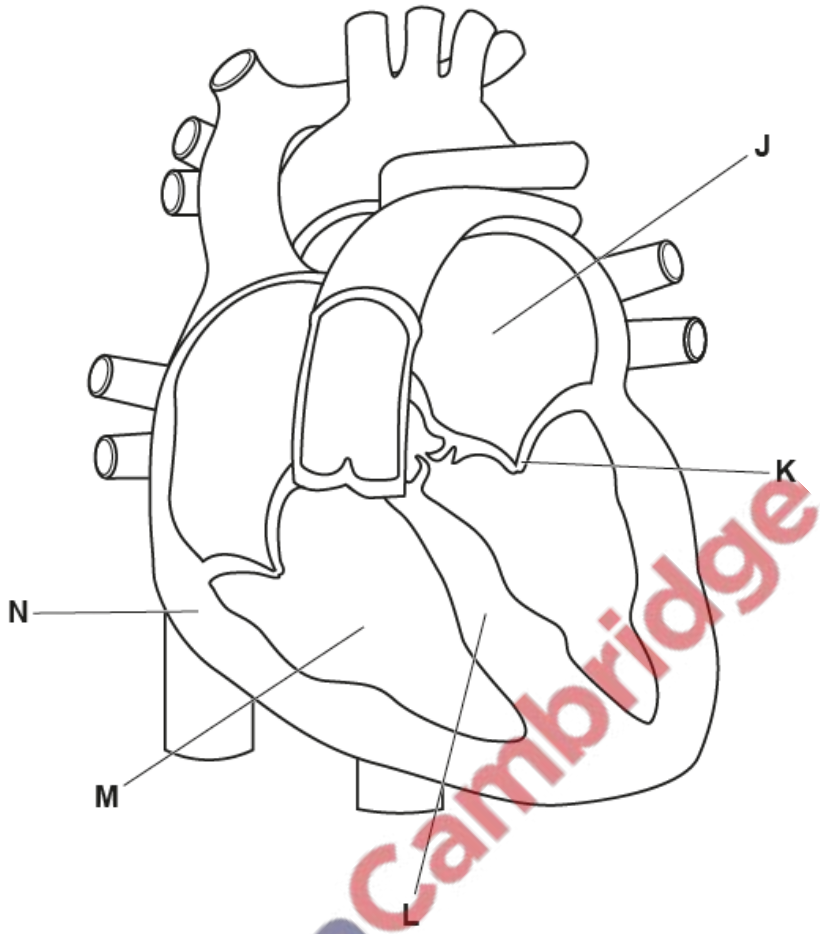


Fig. 6.1

(a) (i) Complete the table to identify the labelled structures in the heart shown in Fig. 6.1.

structure	letter in Fig. 6.1
one-way valve	
	L
muscular wall	
ventricle	
atrium	

[5]

(ii) State the name of the artery that takes blood from the heart to the lungs.

..... [1]

(b) Doctors sometimes monitor the activity of the heart.

State **two** methods for monitoring heart activity.

1 .....

2 .....
[2]

[Total: 8]

17. Nov/2022/Paper_42/No.6

(a) Fig. 6.1 shows diagrams of the circulatory systems of a fish and a mammal.

The arrows show the direction of blood flow through the circulatory systems.

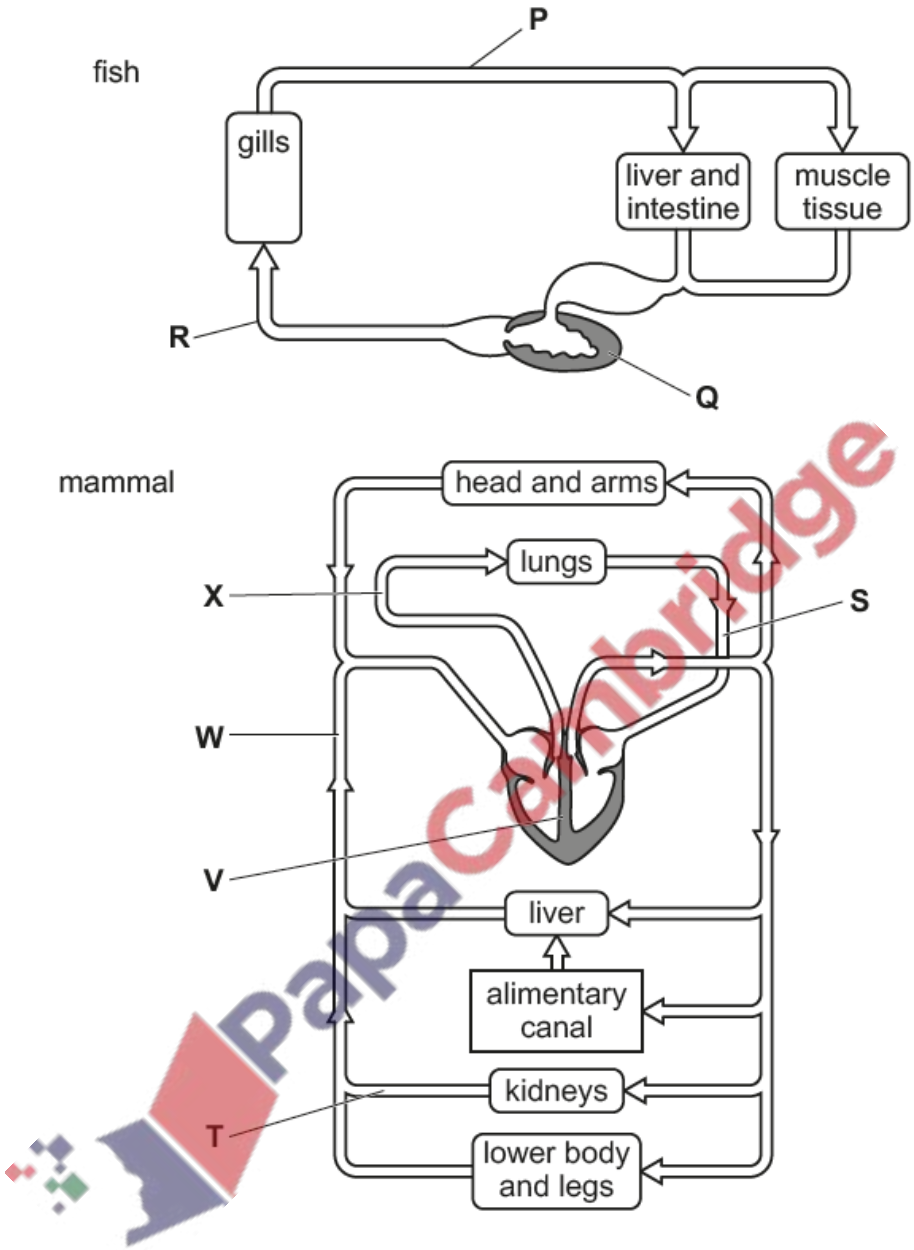


Fig. 6.1

(i) State the names of the structures labelled **Q**, **T**, **W** and **X**.

Q .....

T .....

W .....

X .....

[4]

(ii) State the name of structure **V** on Fig. 6.1 **and** describe its function.

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.....

.....

..... [2]

(iii) Fig. 6.1 shows that fish and mammals have different types of circulation.

State why the fish circulation is called a single circulation.

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..... [1]

(iv) Explain the advantages of the double circulation of the mammal.

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..... [3]

(b) The blood vessels that supply the heart muscle can become blocked.

(i) State the name of the blood vessels that supply the heart muscle.

..... [1]

(ii) State **one** way in which blockages in these blood vessels can be treated.

..... [1]

18. Nov/2022/Paper_42/No.6

(c) Substances move between blood and tissues at various sites in the circulatory system of mammals.

(i) Oxygen is absorbed into the blood as it passes through the lungs.

State the structures in the lungs where oxygen passes into the blood from the air.

..... [1]

(ii) State the site of filtration of blood in the kidneys.

..... [1]

(iii) State the name of the process in which products of digestion move into cells and are used to become part of the cells.

..... [1]

(iv) State the name of the process in which excess amino acids are broken down in liver cells to produce ammonia.

..... [1]

(v) State the name of the organ that releases oestrogen into the blood.

..... [1]

[Total: 17]

(a) Fig. 4.1 shows a dandelion plant, *Taraxacum officinale*, in a field. The flower stalk is called a scape.

Fig. 4.1

(i) The scape of a dandelion responds to sunlight by growing upwards.

State the name of this growth response.

..... [1]

(ii) The scapes of dandelions keep the plant upright without the need for structures such as bones.

Explain how cells in plant scapes and stems keep plants upright.

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..... [2]

(b) Fig. 4.2 is part of a cross-section through the scape of a dandelion.

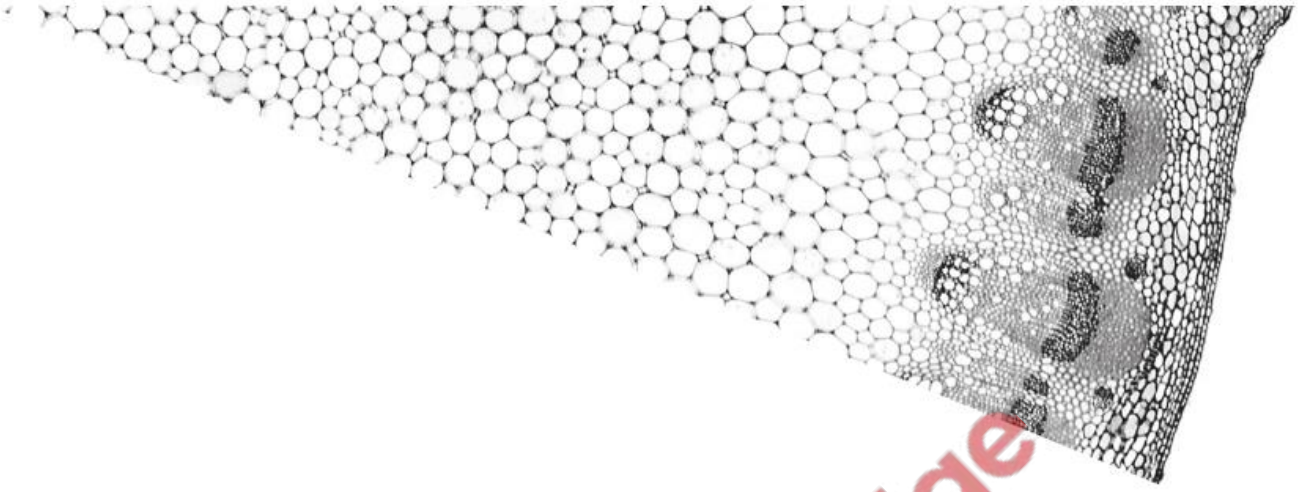

Fig. 4.2

Draw a line and add a label **on Fig. 4.2** to identify one area of **xylem** tissue. [1]

(c) Describe the function of **phloem** tissue.

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..... [3]

(d) A dandelion scape was cut into long strips for an osmosis investigation.

Immediately after the scape was cut, the pieces of scape bent outwards, as shown in Fig. 4.3.

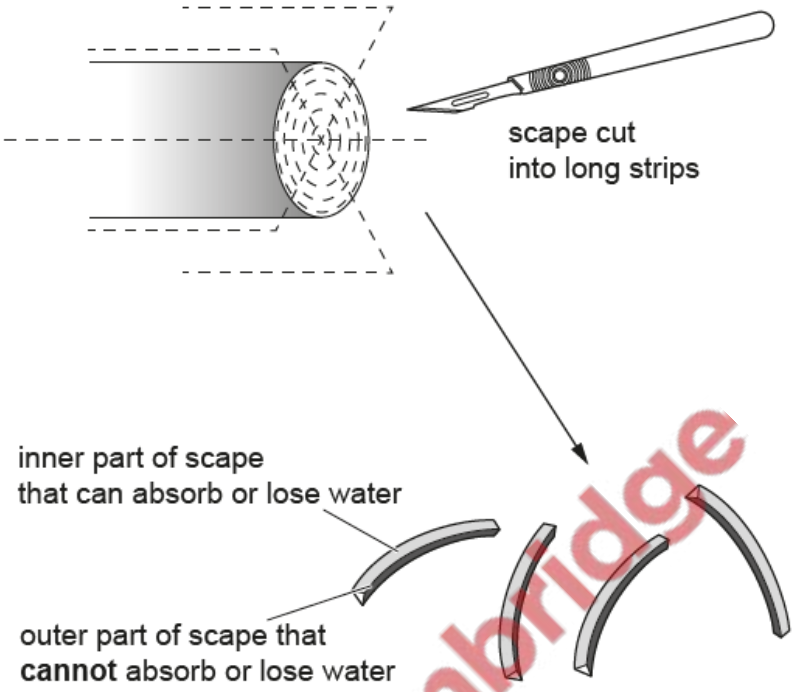

Fig. 4.3

Strips of dandelion scape were placed in four dishes, **A**, **B**, **C** and **D**, for 30 minutes.

Each dish contained a different concentration of salt solution.

Fig. 4.4 shows the appearance of the four strips of scape after 30 minutes.

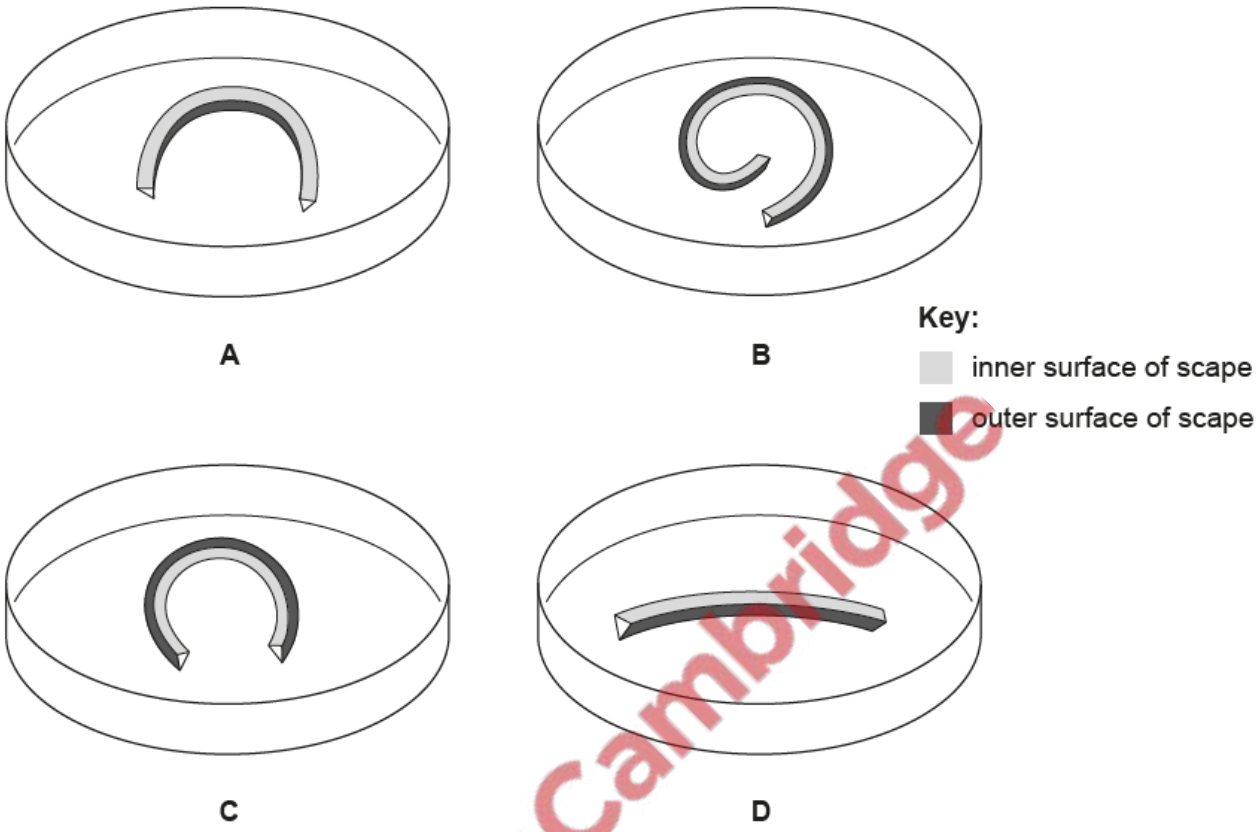

Fig. 4.4

Using the information in Fig. 4.3 and Fig. 4.4, deduce and explain which strip of scape was in the most concentrated salt solution.

strip of scape .....

explanation .....

.....

.....

.....

.....

[3]

[Total: 10]