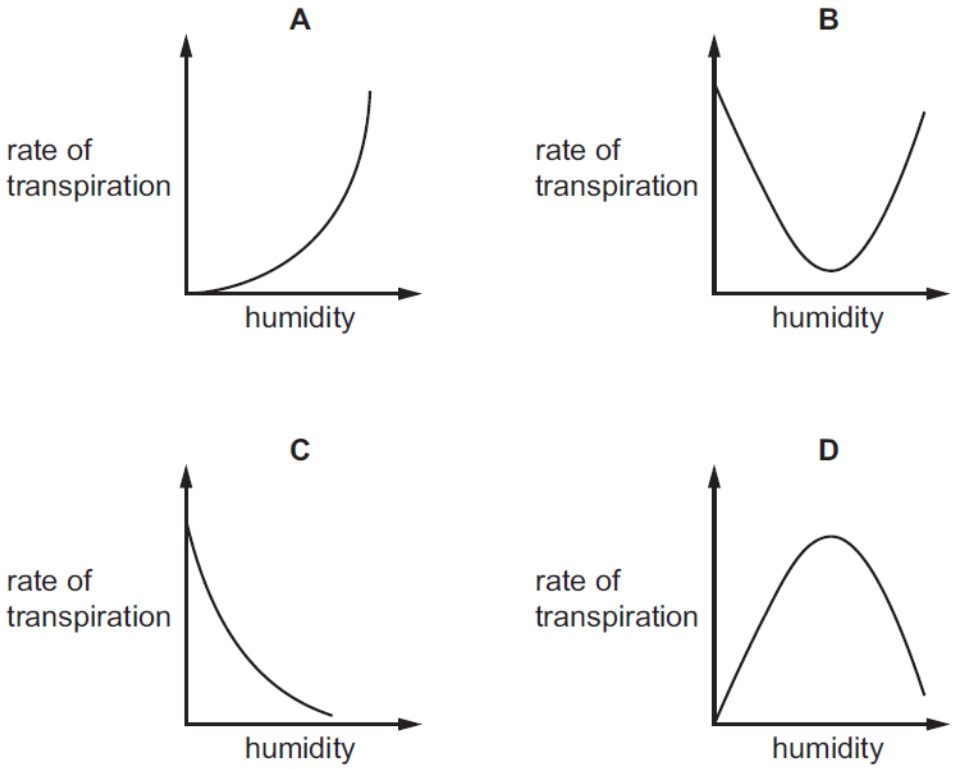
Transport in plants – 2021 IGCSE 0610

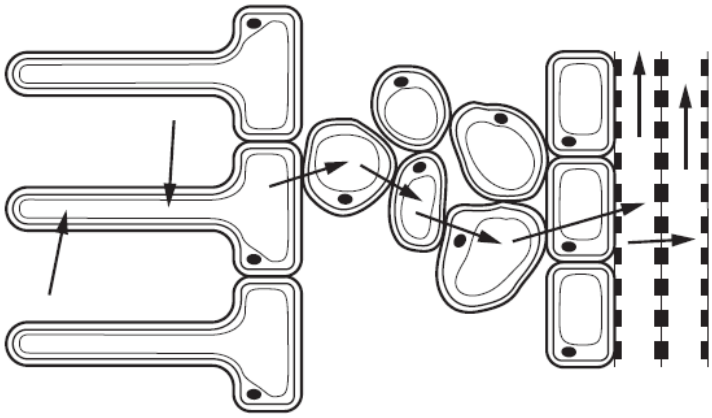
1. Nov/2021/Paper_11/No.18

Which graph shows the effect of increasing humidity on the rate of transpiration?



2. Nov/2021/Paper_12/No.4

The diagram shows some tissues in part of a plant root. The arrows represent the movement of water into and across the plant root tissues.

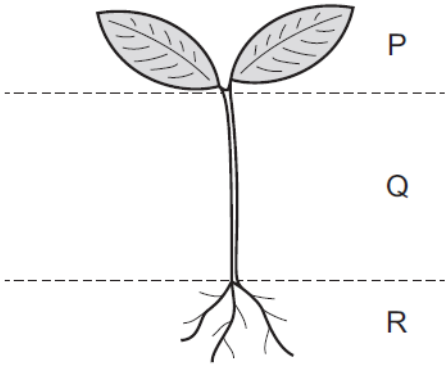


How many different tissues are shown?

A 2 **B** 4 **C** 5 **D** 7

3. Nov/2021/Paper_12/No.17

The diagram shows a young plant.



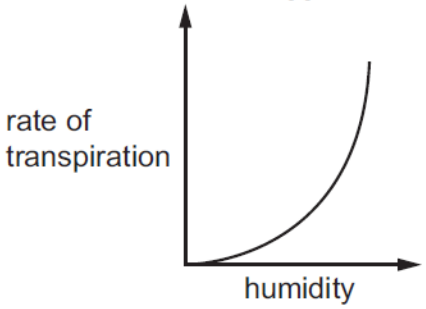
In which parts of the plant are xylem vessels found?

A P, Q and R **B** P and Q only **C** Q and R only **D** Q only

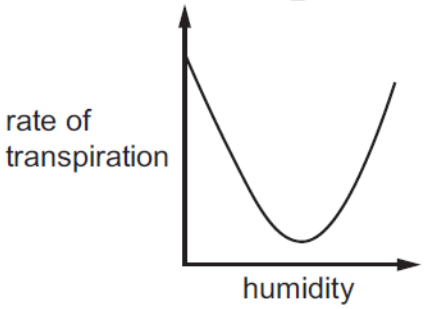
4. Nov/2021/Paper_12/No.18

Which graph shows the effect of increasing humidity on the rate of transpiration?

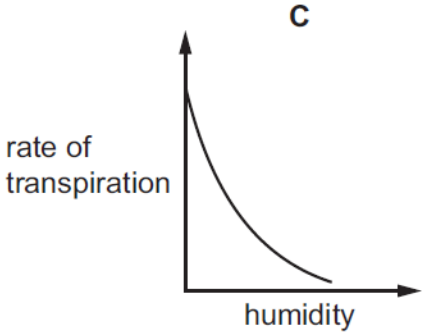
A



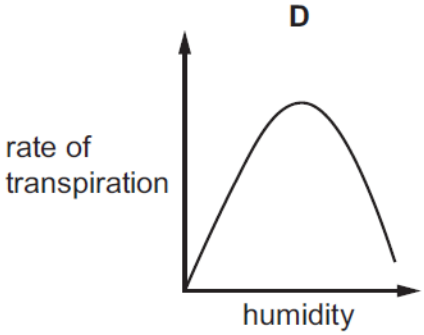
B



C



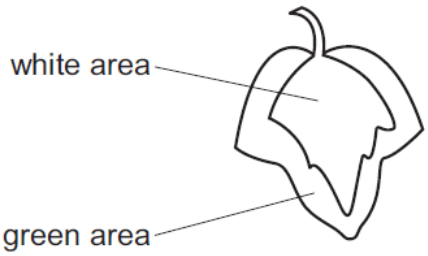
D



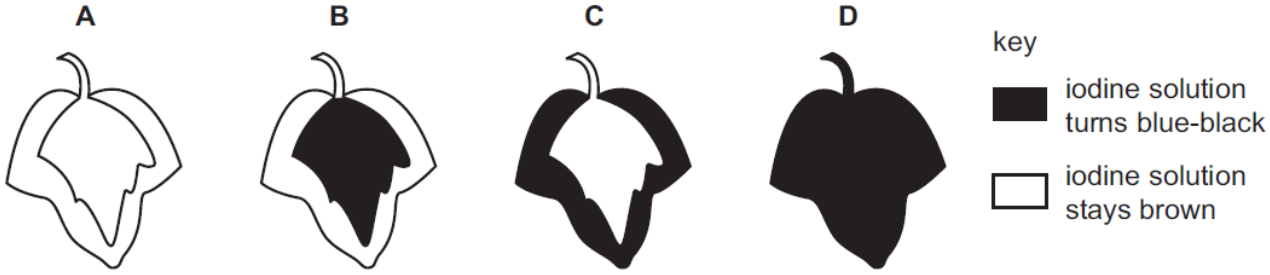
5. Nov/2021/Paper_13/No.9

In a photosynthesis experiment, a plant is left in bright sunlight for several hours. A leaf is then removed from the plant and tested for starch, using iodine solution.

The diagram shows the leaf from the plant that was used in the experiment.

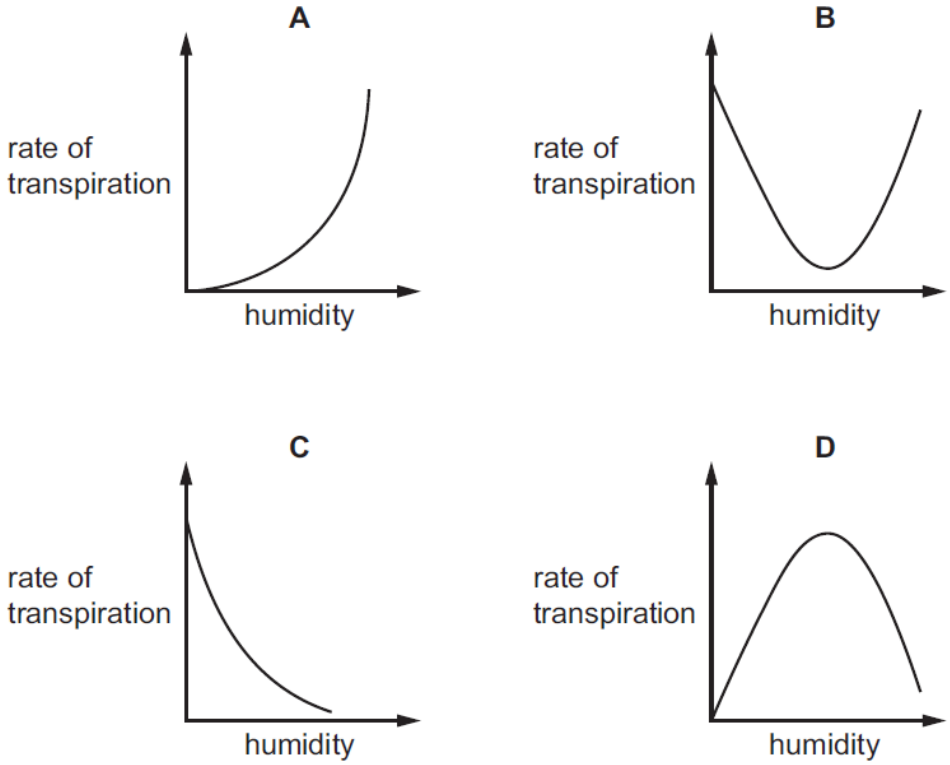


Which diagram shows the result of the experiment?



6. Nov/2021/Paper_13/No.18

Which graph shows the effect of increasing humidity on the rate of transpiration?



7. Nov/2021/Paper_21/No.17

What holds the water molecules together during the transpiration pull in the xylem?

A active transport

B cohesion

C diffusion

D turgor pressure

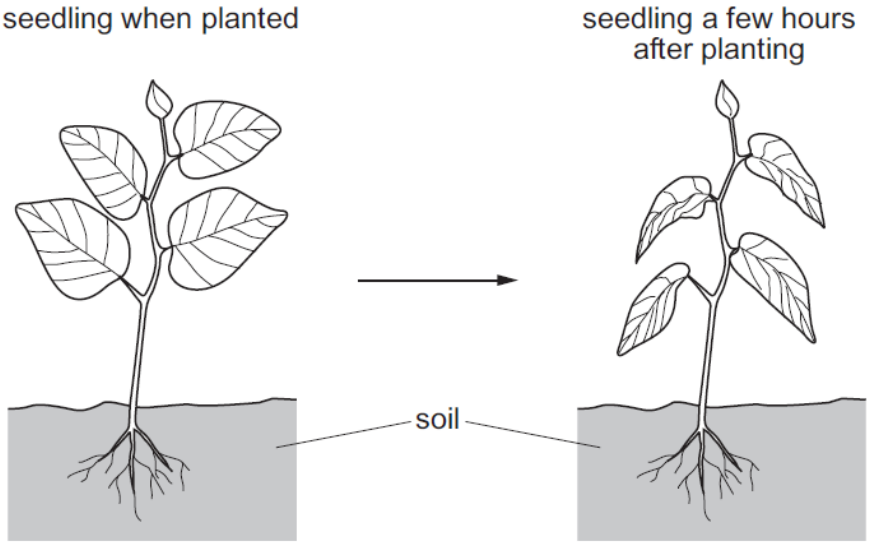
8. Nov/2021/Paper_22/No.3

Which row shows the structure on the outside of a plant cell and the location of the chloroplasts in the cell?

	structure on the outside of a plant cell	location of chloroplasts
A	cell membrane	in the cytoplasm
B	cell membrane	in the vacuole
C	cell wall	in the cytoplasm
D	cell wall	in the vacuole

9. Nov/2021/Paper_22/No.16

The diagram shows a newly planted seedling and the same seedling a few hours after being planted.



What is the correct explanation for the change in the appearance of the leaves?

A Transpiration is faster than water uptake by root hairs so cells have become flaccid.

B Transpiration is faster than water uptake by root hairs so cells have become turgid.

C Transpiration is slower than water uptake by root hairs so cells have become flaccid.

D Transpiration is slower than water uptake by root hairs so cells have become turgid.

10. Nov/2021/Paper_22/No.17

Translocation is the movement of sucrose and amino acids in the phloem tissue of a plant from source to sink.

Which organ can act as a source?

A flower

B growing shoot tip

C new developing root

D storage root

11. Nov/2021/Paper_23/No.17

In plants, how are amino acids moved between sources and sinks?

A by translocation through xylem vessels

B by transpiration through phloem tissues

C by translocation through phloem tissues

D by transpiration through xylem vessels

12. Nov/2021/Paper_32/No.5

(a) Define the term *transpiration* by completing the sentences.

Transpiration is the loss of water vapour from plant leaves by ..... of water at the surfaces of the mesophyll cells followed by ..... of water vapour through the ..... .

[3]

(b) A student investigated the volume of water lost in one hour by different species of plants at different temperatures.

Fig. 5.1 shows the results.

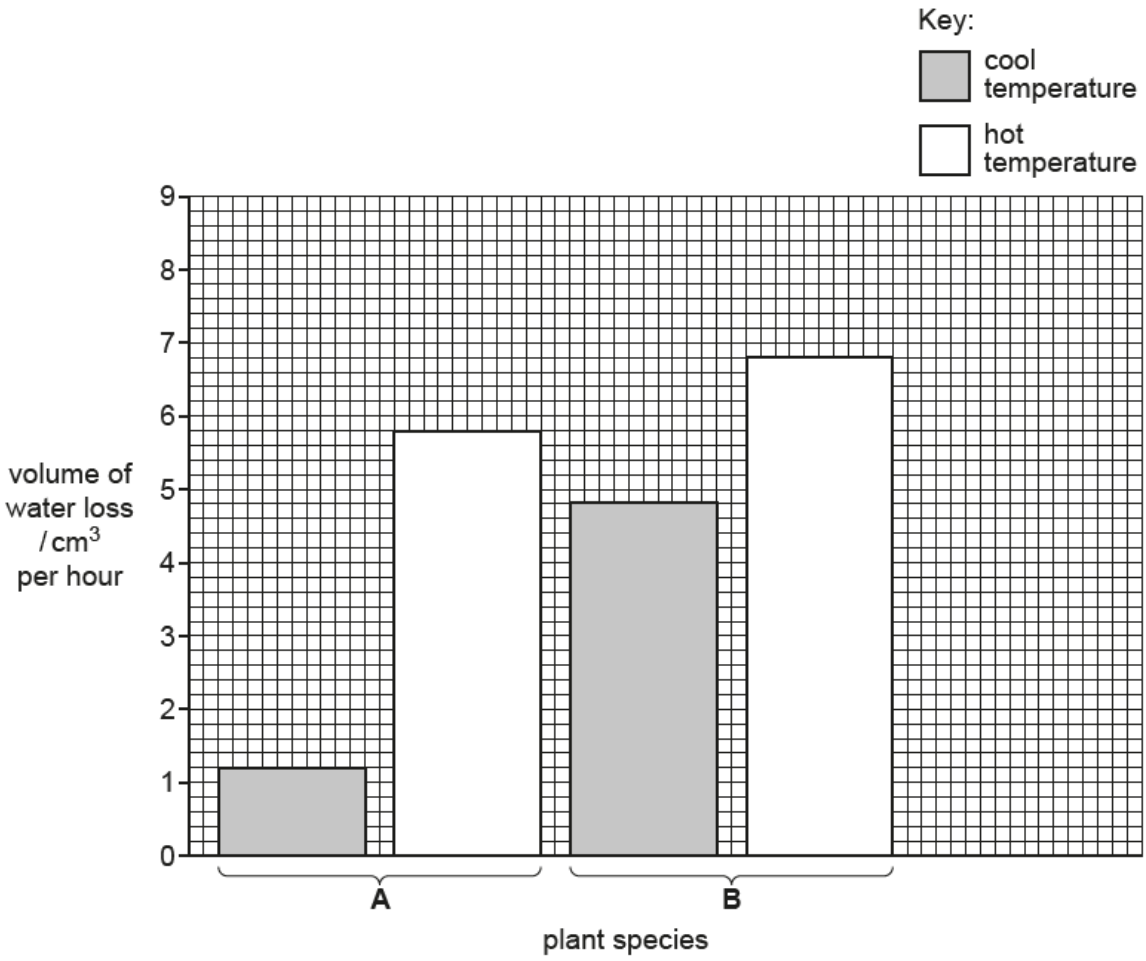


Fig. 5.1

Compare the volume of water loss in species **A** and species **B**.

.....

.....

.....

.....

.....

.....

..... [3]

(c) The investigation was repeated with increased humidity.

The temperature was cool.

Draw **one** additional bar **on Fig. 5.1**, for species **B** only, to show the expected result. [1]

(d) State the name of the vessels that transport water through a plant.

..... [1]

[Total: 8]

13. Nov/2021/Paper_33/No.3

(a) Fig. 3.1 shows a diagram of a cross-section through a leaf.

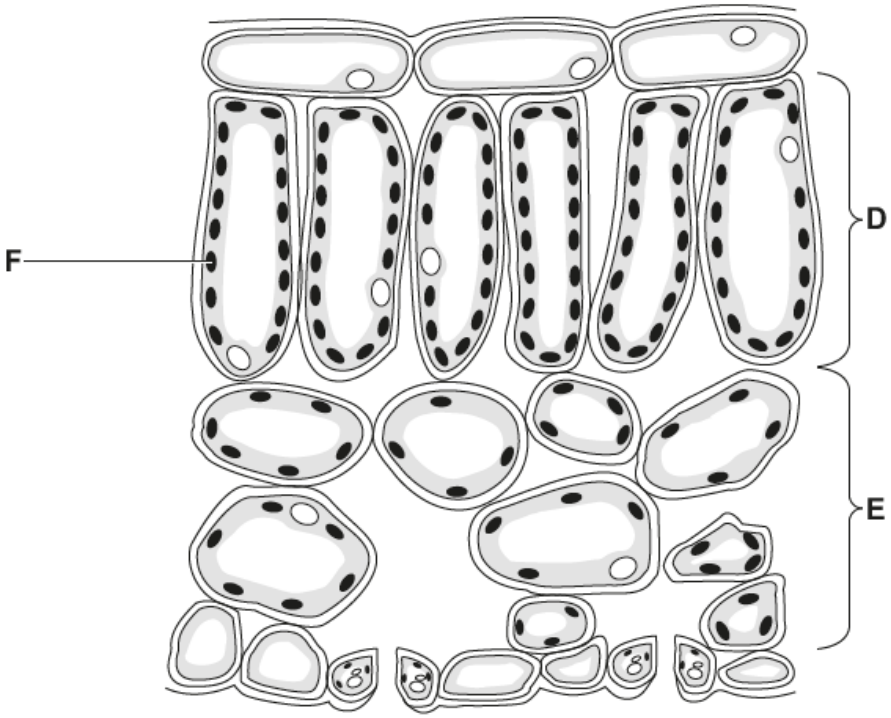


Fig. 3.1

(i) State the name of the tissues labelled **D** and **E**.

D .....

E .....

[2]

(ii) State the name of the cell structure labelled **F**.

..... [1]

(b) Plant cells photosynthesise.

State the word equation for photosynthesis.

..... [2]

(c) A student investigated the effect of light on the rate of photosynthesis.

Fig. 3.2 shows the apparatus used.

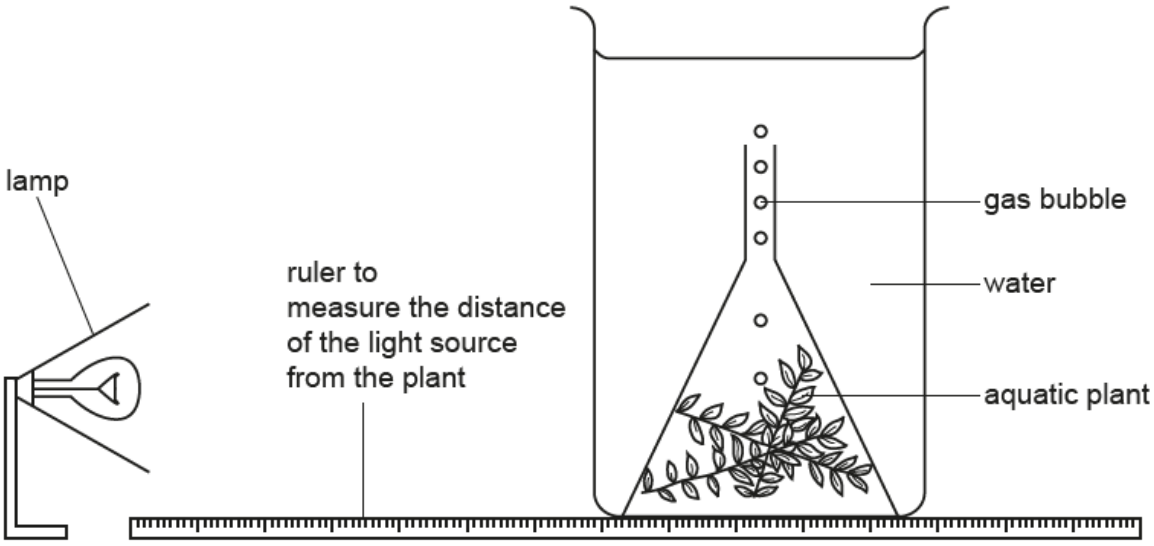


Fig. 3.2

A lamp was used as the only source of light. The lamp was placed 10 cm from the aquatic plant. The number of bubbles the aquatic plant produced in three minutes was counted and the rate of photosynthesis was calculated. This method was repeated at 10 cm intervals.

The results are shown in Table 3.1.

Table 3.1

distance of the lamp from the aquatic plant / cm	number of bubbles counted in three minutes	rate of photosynthesis / bubbles per minute
10	87	29
20	87	29
30	75	
40	48	16
50	24	8

(i) Use the information in Table 3.1 to calculate the rate of photosynthesis when the lamp was 30 cm from the aquatic plant.

..... bubbles per minute [1]

(ii) State the **two** distances between which the rate of photosynthesis halved.

..... cm and ..... cm [1]

(iii) State **two** distances which have the same rate of photosynthesis.

..... cm and ..... cm [1]

(iv) Predict what would happen to the rate of photosynthesis if the lamp was switched off.

Give a reason for your answer.

prediction .....

.....

reason .....

.....

.....

[2]

[Total: 10]

14. Nov/2021/Paper_43/No.6

The heart pumps blood around the body.

(a) Explain why the heart is an organ.

.....

.....

..... [1]

(b) Complete the sentences:

The ..... system includes the heart and blood vessels. Deoxygenated blood from the body is transported to the heart in the ..... .

During a heart beat the ventricles contract. The right ventricle pumps deoxygenated blood to the lungs. The right ventricle has a ..... muscular wall than the left ventricle.

Gas exchange in the lungs occurs by ..... . Oxygenated blood travels back to the heart where it enters the ..... of the heart.

The two sides of the heart are separated by the ..... . This structure prevents the mixing of oxygenated and deoxygenated blood. Oxygenated blood is then delivered to the rest of the body. Blood is supplied to the muscle of the heart in the ..... .

[7]

(c) Many people monitor their heart rate by counting their pulse.

State **one** other method of monitoring heart rate.

..... [1]

[Total: 9]