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Answer ALL the questions. Write your answers in the spaces provided.

1. Lesley is recovering from a heart attack.

The heart attack was caused when a blood clot blocked an artery in her heart.
Her doctor told her that the condition of her arteries had increased her chances of a heart attack.

(a) Describe one way that 'the condition of her arteries' may have made the clot more likely to block her artery.

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(1)

(b) The doctor advised her to change her lifestyle by improving her diet and going for a walk each day.

(i) Suggest one way that she may improve her diet and explain how this may help to reduce the chance of having another heart attack.

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(2)

(ii) How might taking a walk each day help to reduce the chance of having another heart attack?

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(2)

(Total 5 marks)

Q1



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2. (a) (i) Complete the word equation for photosynthesis.

carbon dioxide + → + glucose
(1)

(ii) State one reason why the amount of carbon dioxide in the atmosphere is not decreasing even though it is being used up during photosynthesis.

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.....
(1)

(b) Some of the glucose made in photosynthesis is used up during respiration in leaves. Describe what happens to the rest of the glucose.

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(3)

(Total 5 marks)

Q2



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3. Alex has just finished a race. She is breathing heavily and has cramp.
Explain why Alex is still breathing heavily even though she has stopped running.



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Q3

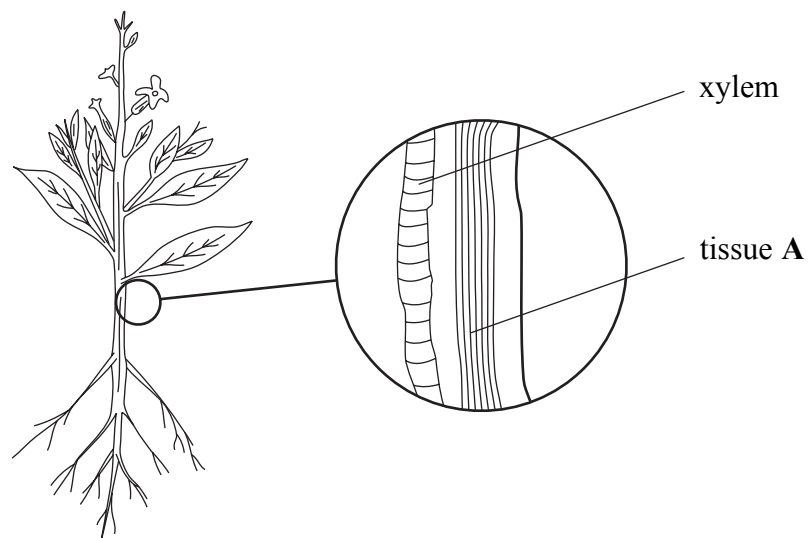
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4. The diagram shows the tissues that transport substances in plants.

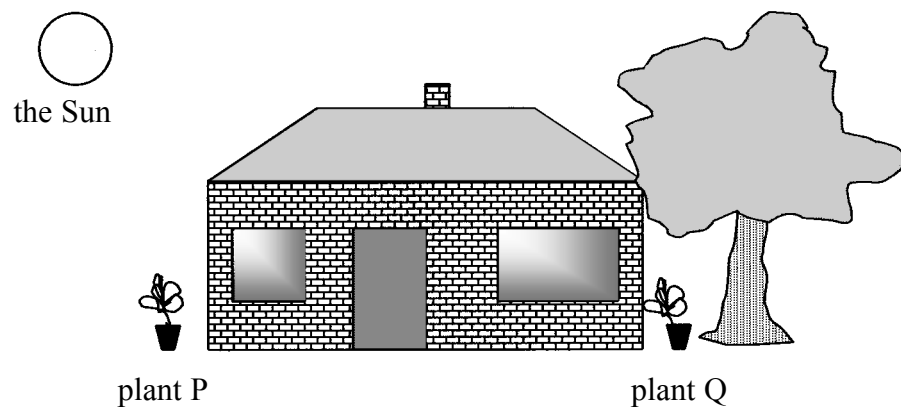


(a) Name tissue A. (1)

(b) Name one substance, other than water, which may be transported by tissue A.
.....
..... (1)

(c) State one feature of xylem that helps transport water from the roots to the leaves.
..... (1)

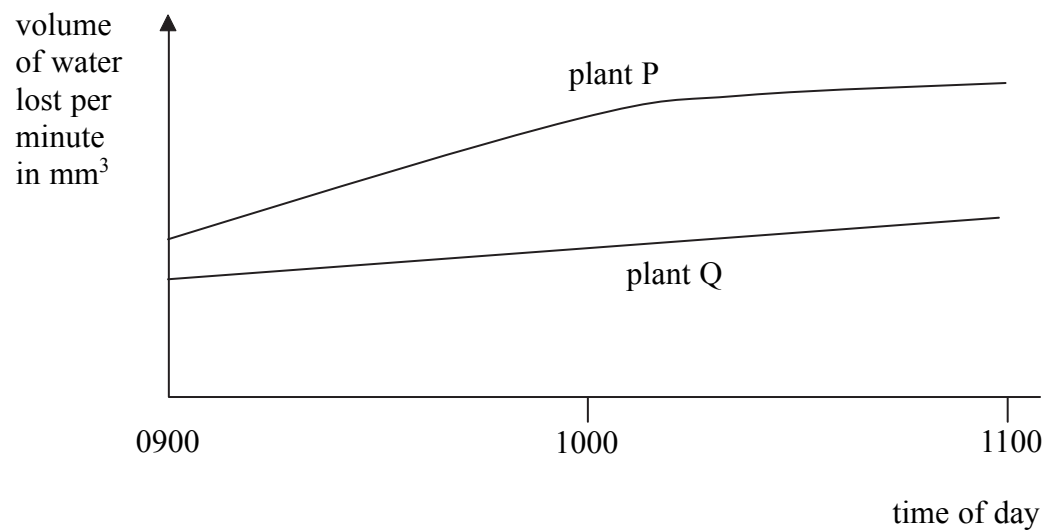
(d) Two identical plants, P and Q, were put either side of a house as shown in the diagram.



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The volume of water lost from each plant by transpiration was measured over a two hour period from 0900.

The results are shown in this graph.



(i) Explain why plant P lost more water and at a faster rate between 0900 and 1015 than plant Q.

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(2)

(ii) Suggest why the rate of transpiration in plant P decreases towards the end of the two hour period.

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(2)

(Total 7 marks)

Q4



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5. Slugs are pests in gardens because they eat leaves.

Kay has been using slug pellets, a type of chemical control, to kill slugs in her garden. She decides to use Nemaslug instead.

The label comes from a jar of 'Nemaslug'.

NEMASLUG

A form of biological control
to control slugs using
nematode worms

(a) Explain what is meant by the term biological control.

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.....
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(2)

(b) State one advantage and one disadvantage of using biological control instead of chemical control to kill pests.

Advantage

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(1)

Disadvantage.....

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(1)

(Total 4 marks)

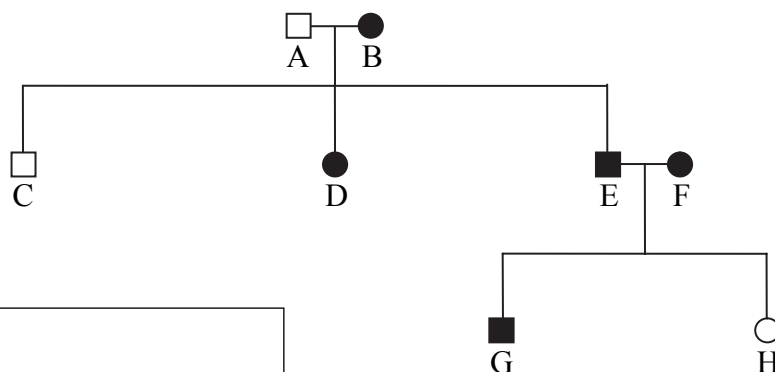
Q5



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6. The pedigree diagram below shows the inheritance of a genetic disorder which has serious consequences in later life. The disorder is caused by a dominant allele.



key

- female with disorder
- female without disorder
- male with disorder
- male without disorder

(a) Explain why person D must be heterozygous. Use R to represent the dominant allele and r to represent the recessive allele.

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(2)

(b) E and F are expecting a third child. What is the probability that the child will inherit the disorder?

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(1)



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(c) E and F decide to have their unborn baby tested for this disorder.
If the tests show that the baby will have the disorder they may consider whether or
not to have an abortion.

(i) Give one reason why some people think that having an abortion is justified.

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(1)

(ii) Give one reason why some people think that having an abortion is not justified.

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(1)

Q6

(Total 5 marks)

TOTAL FOR PAPER: 30 MARKS

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