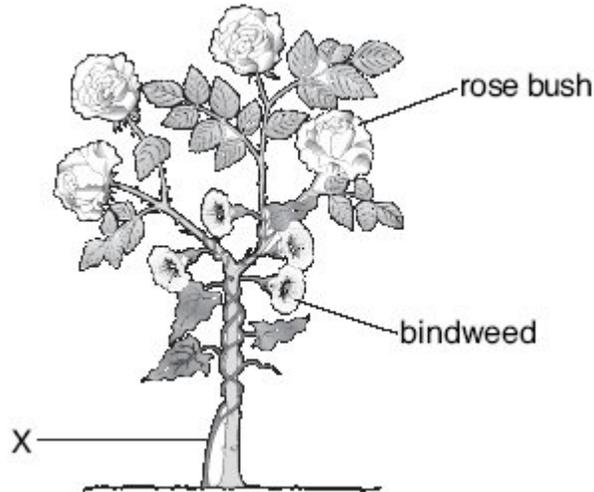


**Substances needed for plant growth**

Name \_\_\_\_\_

**Q1** Bindweed is a plant that grows tightly around other plants.  
The drawing below shows bindweed growing around a rose bush.



(a) Complete the sentences below. Choose from the words in the list.

**air      light      support      water      minerals**

(i) Bindweed grows as high as possible on the rose bush so that the bindweed can get as much ..... as possible.

1 mark

(ii) Bindweed grows around the rose bush because the rose bush provides ..... for the bindweed.

1 mark

(b) A gardener cut through the stem of the bindweed at X.  
Two days later the bindweed above X was dead.

Why did the bindweed die?  
Tick the correct box.

no air

no light

no warmth

no water

1 mark

(c) The gardener adds fertiliser to the soil to help her rose bushes to grow well.

What do plants get from the fertiliser?

Tick the correct box.

acids

minerals

sugars

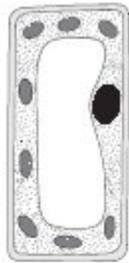
vitamins

1 mark

(d) Plant roots have root hairs.

Which diagram shows a root hair?

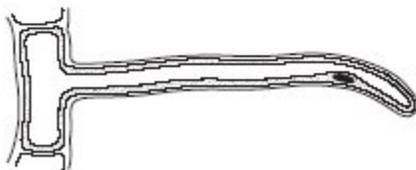
Tick the correct box.



A



B



C



D

*not to scale*

1 mark  
maximum 5 marks

**Q2** Joe bought a potted plant. He kept it well watered but some of the leaves turned yellow.



Joe thought that the plant did **not** have enough light for photosynthesis. He moved the plant closer to the window but more leaves turned yellow.

(a) He then thought that the plant did **not** have enough minerals.

The table below gives information about minerals.

mineral	why the mineral is needed
magnesium	to make chlorophyll
nitrogen	to make protein
phosphorus	to grow and transfer energy
potassium	to make fruit

(i) Joe's plant did **not** have enough of one of the minerals in the table. Use the information in the table to suggest which mineral this was.

.....

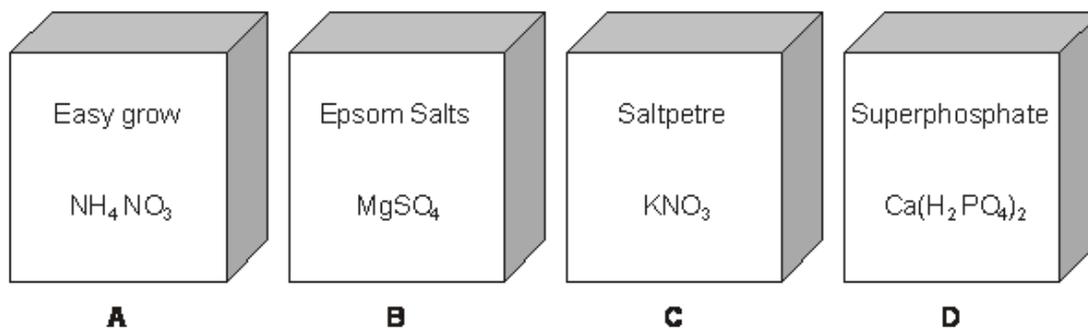
1 mark

(ii) A plant growing in a pot is more likely to be affected by a shortage of minerals than a plant growing in a garden. Give the reason for this.

.....  
.....

1 mark

- (b) Joe bought some fertiliser for his plant.  
The names and formulae of four different fertilisers are shown below.



- (i) Give the letter of **one** box of fertiliser, A, B, C or D, that would provide each of the minerals in the table below.  
Write the letters in the table.

mineral	letter of fertiliser
magnesium	
nitrogen	
phosphorus	
potassium	

3 marks