Do not write outside the box

1 A student did an experiment to investigate growth in plants. He took five seeds and planted them in some compost. They were planted outdoors within 1 square metre.

	Height (cm)				rowth rate cm/day
Plant number	**Day 2**	**Day 4**	**Day 6**	**Day 8**	
1	2.5	4.0	5.0	6.4	
2	2.0	3.5	4.5	5.6	0.7
3	1.5	2.3	3.0	3.2	0.4
4	2.5	3.5	4.2	4.8	0.6
5	0.5	0.9	1.4	1.6	0.2

1 (a) (i) Calculate the mean growth rate per day for plant number 1. **[2 marks]**

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Mean growth rate = ……..……..….cm/day

1 (a) (ii) The lowest growth rate recorded by the student was for plant number 5.

Give two environmental factors may have caused plant number 5 to have the lowest growth rate. **[2 marks]**

Factor 1 ……

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Factor 2 ……

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1 (a) (iii) Suggest a factor other than an environmental one which might have caused the plant to have the lowest growth rate. **[1 mark]**

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1 (a) (iv) Height of the plant may not be the best measure of growth of the plants in the experiment.

Suggest why. **[1 mark]**

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1 (b) The diagram below shows the Sahara desert ant.

The temperatures in the desert can reach up to 60^{o}C with the sand reaching even higher temperatures. The Sahara desert ant is well adapted to survive.

Scientists describe the ants as **extremophiles**.

What is meant by the term **extremophile**? **[2 marks]**

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1 (b) (i) Here are some facts about the ants.

- They deliberately come out at the hottest point in the day to eat insects which have died from the heat exposure.
- They only stay out for short periods.
- They have long legs and move quickly across the sand.

Explain why these features help the ant to survive. **[4 marks]**

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(Total 12 marks)

End