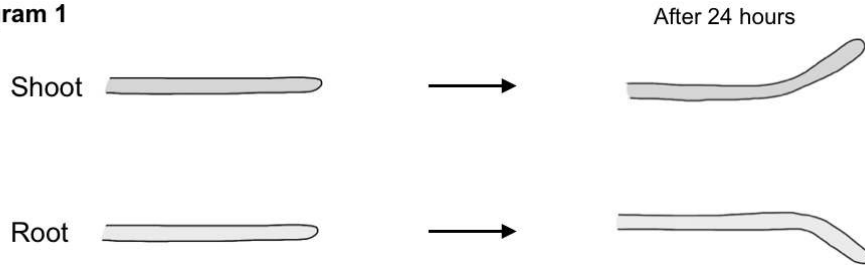


|   |   |
|---|---|
| 0 | 1 |
|---|---|

Plants have hormones which help them to grow. Auxins are hormones that control the direction of growth of roots and shoots

The diagram below shows the effect of auxins on a root and a shoot

**Diagram 1**



|   |   |
|---|---|
| 0 | 1 |
|---|---|

|   |
|---|
| 1 |
|---|

Describe the effect of auxins in roots and shoots which causes the changes shown in the diagram **[2 marks]**

Roots

---



---

Shoots

---



---

|   |   |
|---|---|
| 0 | 1 |
|---|---|

|   |
|---|
| 2 |
|---|

Another effect observed in shoots is called phototropism. Phototropism is the response of shoots to light. The diagram shows the effect of light on a shoot

**Diagram 2**



Explain how the interaction of auxin and light causes the effect shown in **Diagram 2**. **[3 marks]**

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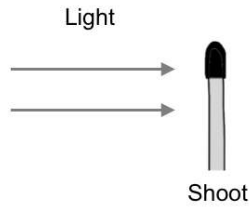
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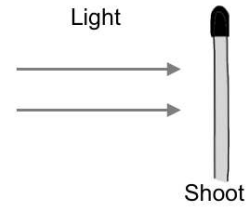
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0 1 . 3

In another experiment, a shoot was set up in the same way as Diagram 2. In addition, a small cap was added to the tip of the shoot. Diagram 3 shows the results of the experiment.

**Diagram 3**

After 24 hours



What conclusion can be drawn about the part of the shoot that detects the light?

**[1 mark]**

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0 1 . 4

Suggest why the conclusion might not be accepted based on the experiment being carried out as shown in **Diagram 3**.

**[1 mark]**

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