

# 9.3 Growth in Plants

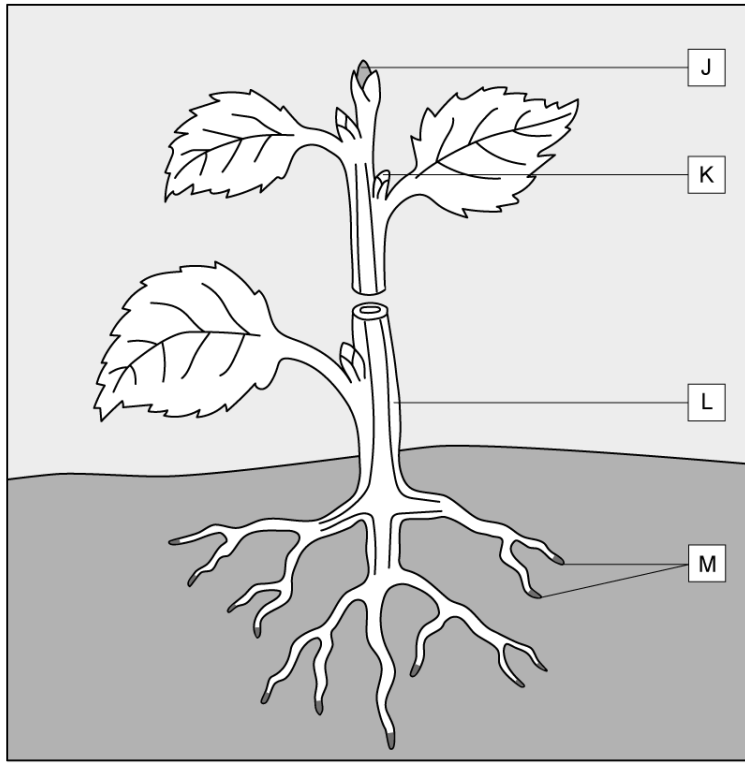
## Question Paper

Course	DP IB Biology
Section	9. Plant Biology (HL Only)
Topic	9.3 Growth in Plants
Difficulty	Easy

**Time allowed:** 10  
**Score:** /5  
**Percentage:** /100

**Question 1**

Which row of the table correctly identifies the parts labelled **J**, **K**, **L** and **M** on the diagram below?

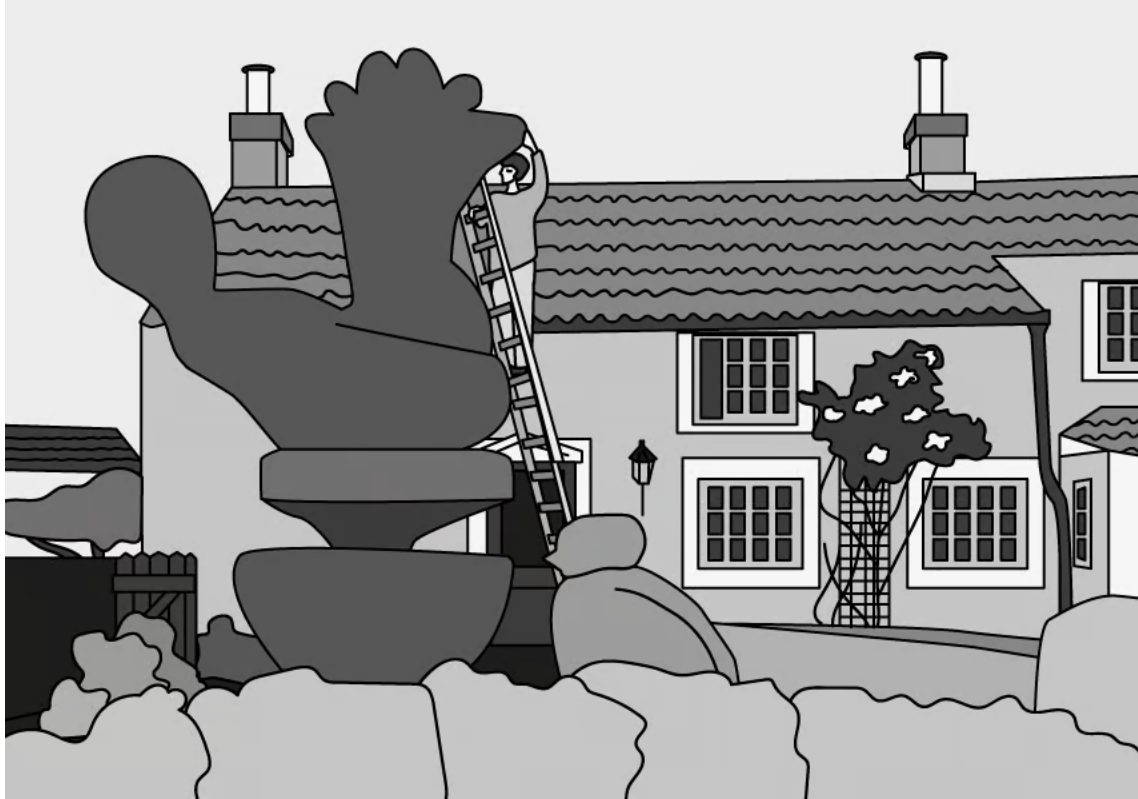


	<b>J</b>	<b>K</b>	<b>L</b>	<b>M</b>
<b>A.</b>	axillary bud	shoot apical meristem	root apical meristem	lateral meristem
<b>B.</b>	shoot apical meristem	axillary bud	lateral meristem	root apical meristem
<b>C.</b>	lateral meristem	shoot apical meristem	root apical meristem	axillary bud
<b>D.</b>	shoot apical meristem	lateral meristem	axillary bud	root apical meristem

[1 mark]

## Question 2

The image below shows an example of topiary, an art form in which gardeners trim species of plants such as privet (*Ligustrum ovalifolium*) to form decorative shapes in gardens. The gardener is shown here on a ladder, trimming the upper parts of the topiary shape.



What phenomenon of plant growth allows such forms to be shaped in plants?

- A. Negative geotropism
- B. Cell differentiation in the shoot apex
- C. Apical dominance
- D. Production of the plant hormone indole-3-acetic acid (IAA)

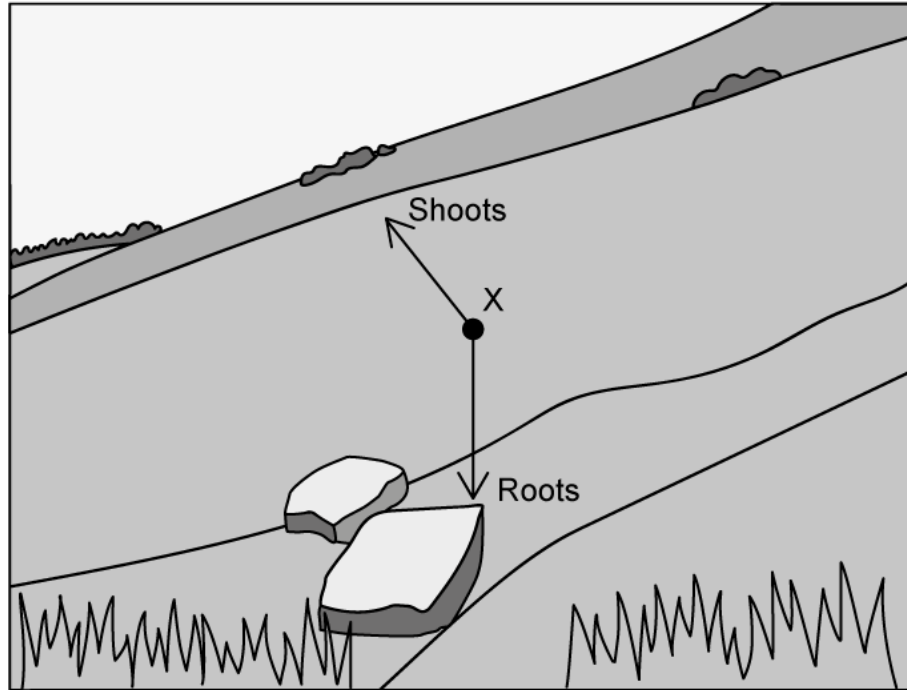
[1 mark]

### Question 3

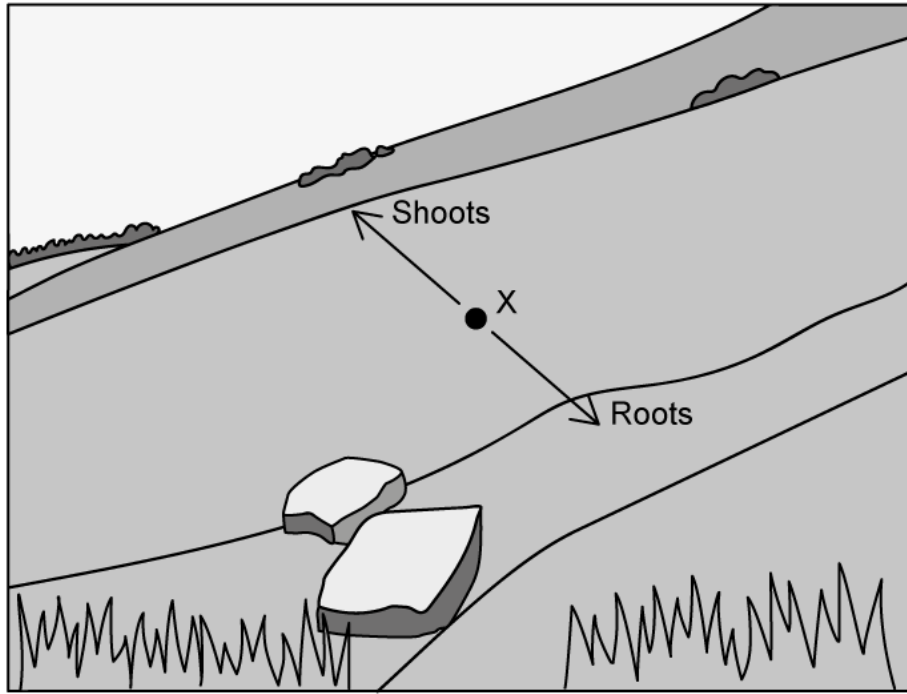
A sycamore tree seed lands on sloping ground at a particular spot, shown as **X** in the diagrams. Conditions there are favourable to the sycamore seed's germination.

Which diagram of **A – D** best shows the direction of growth of the tree's shoots and roots in its early life after germination of the seed?

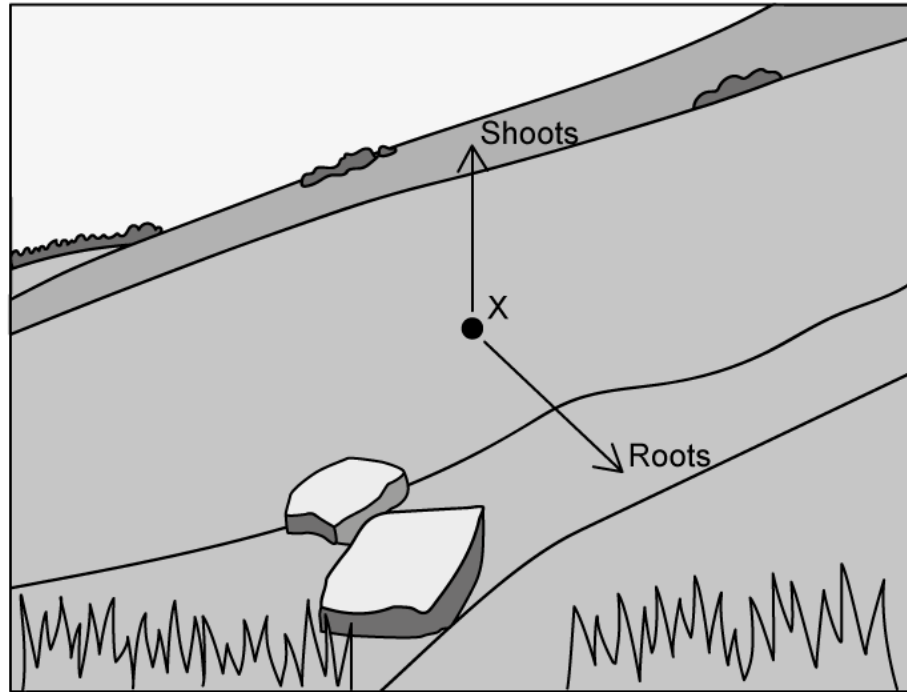
A.



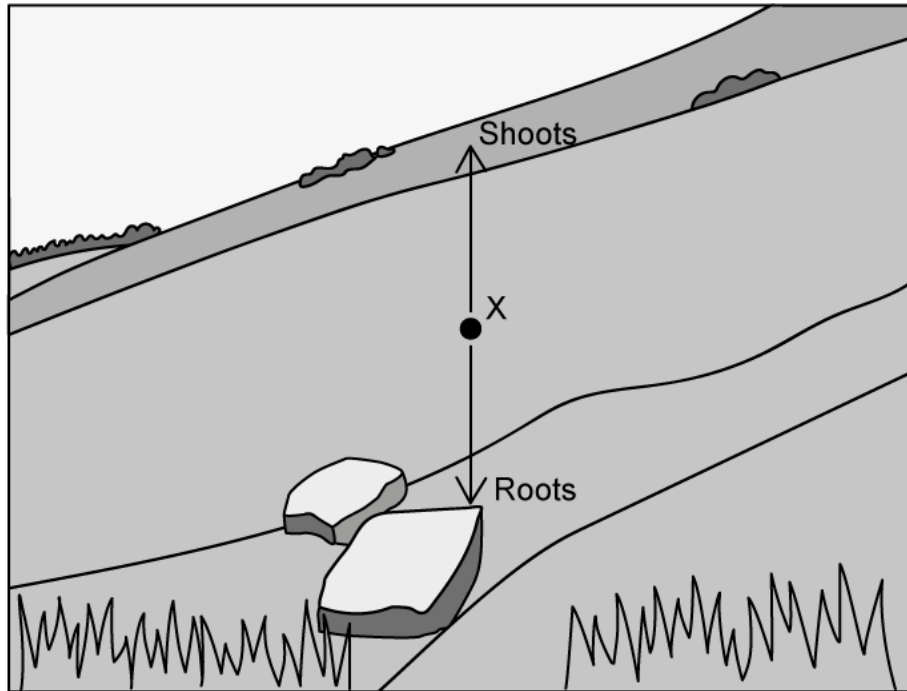
B.



C.



D.



[1 mark]

#### Question 4

Which row of the table gives the most accurate summary of the actions of auxins?

	In shoots	In roots
<b>A.</b>	Cells elongate	Growth inhibited
<b>B.</b>	Cells grow in number	Growth inhibited
<b>C.</b>	Cells elongate	Growth promoted
<b>D.</b>	Cells grow in number	Growth promoted

[1 mark]

### Question 5

Which of the following statements are true for the activity of micropropagation of plants?

- I. Explants are sterilised to reduce the risk of microbial contamination of the culture medium
- II. Micropropagation produces a desirably high amount of variation within the culture
- III. Explants can give rise to whole new plants thanks to totipotent cells in their meristems
- IV. Plant hormones are not used in micropropagation until the new plants are full-sized
- V. New plants are able to grow in soil once their roots and shoots have developed, after micropropagation

- A. II, III and IV
- B. I and III only
- C. I, III and V
- D. All of them

[1 mark]