

CHARACTERISTICS OF LIVING ORGANISMS-QP-MS

- 1** (a) Plant shoots respond to stimuli such as light.
Fig. 10.1 shows the growth response of a shoot to light.

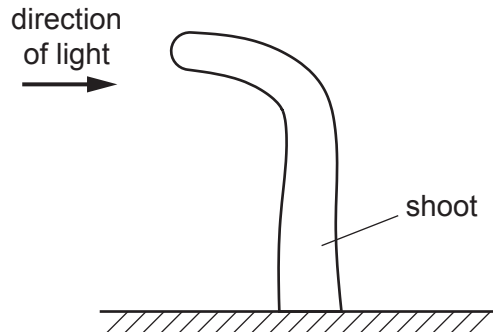


Fig. 10.1

- (i) Name the response shown in Fig. 10.1.
..... [1]
- (ii) Draw an **X** on Fig. 10.1 to show the area with the greatest cell elongation. [1]
- (iii) Name the hormone that controls cell elongation.
..... [1]

- (b) Fig. 10.2 shows a plant shoot with the tip removed.

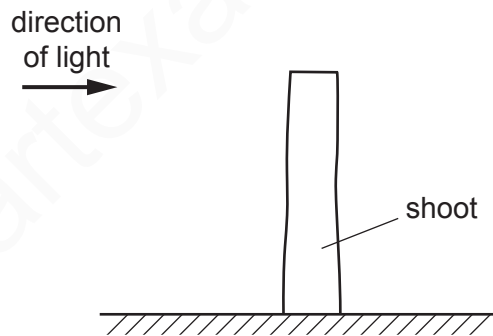


Fig. 10.2

State why the shoot in Fig. 10.2 did **not** bend.

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..... [1]

(c) Explain why plants need magnesium ions for photosynthesis and healthy growth.

Use ideas about energy in your answer.

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..... [3]

(d) Growth is one of the characteristics of living things.

(i) Complete the definition of the term *growth*.

Growth is a increase in size and dry
by an increase in cell number or cell size or both. [2]

(ii) State the name of two other characteristics of living things.

1

2 [2]

[Total: 11]

MARKING SCHEME

(a)(i)	phototropism ;	1
(a)(ii)	X drawn on the upper side of the shoot bend ;	1
(a)(iii)	auxin ;	1
(b)	auxin / hormone / chemical, produced at the shoot tip_;	1
(c)	magnesium ions required to make chlorophyll ; chlorophyll absorbs light energy (and converts this to chemical energy) ; (chemical) energy used to synthesise, carbohydrates or glucose / carbohydrates or glucose are used to make proteins (for growth) ;	3
(d)(i)	permanent ; mass ;	2
(d)(ii)	any two from: movement reproduction sensitivity excretion nutrition respiration ;;	2