

14. Coordination and response

14.5 Tropic responses

Paper 3 and 4

Marking Scheme

Q1.

(b)(i)	plant Y would be straight(er) ; all, sides / parts / leaves, of plant Y, receives light ;	2	
(b)(ii)	phototropism ;	1	
(b)(iii)	receives more light / AW ; for photosynthesis ;	2	

Q2.

(a)(i)	shoot drawn going up towards light ; root drawn going down away from light ;	2	
(a)(ii)	phototropism ;	1	
(a)(iii)	mitosis ;	1	

Q3.

(a)(i)	the shoot grows towards the light / AW ;	1	
(a)(ii)	phototropism ;	1	
(a)(iii)	to get more light ; light needed for photosynthesis / light needed to produce food / AW ;	2	

Q4.

(a)(i)	root drawn growing downwards ; shoot drawn growing upwards ;	2	
(a)(ii)	gravitropism ;	1	

Q5.

(a)	gravitropism ;	1	
(b)	<i>idea of</i> negating the effect of gravitational pull / gravity, on one side of the plant (only) ; (used as a control) to compare with (the response of) plant B ;	2	

(c)(i)	auxin ;	1	
(c)(ii)	<i>any three from:</i> (<i>auxin / hormone produced in the tip</i>) moves / diffuses, away from tip / down the, stem <i>or</i> shoot <i>or</i> plant ; moves to / collects on, one / lower side (of stem / plant) ; stimulates <u>cell</u> elongation ; stem / plant, bends / grows / turns, upwards ; AVP ;	3	
(d)	<i>any three from:</i> reach light for photosynthesis ; (reach air for) carbon dioxide for photosynthesis ; (reach air for) oxygen for respiration ; <i>idea that they</i> grow tall so that flowers are exposed for, (wind / insect) pollination ; AVPs e.g. roots grow downwards / towards (direction of) gravity ; to reach, water / ions <i>or</i> minerals ; to anchor plant in the soil ;	3	

Q6.

(c)(i)	auxin ;	1	
(c)(ii)	<i>auxin / hormone:</i> made in the, shoot / stem, tip ; moves away from the tip ; moves to / collects on, lower side of stem ; stimulates cell elongation ; stem, bends / grows, upwards ; AVP ;	4	