

Question Number	Answer	Mark
3(a)(i)	graph shows {positive correlation / eq} between nitrate concentration and seedling growth ;	(1)

Question Number	Answer	Mark
3(a)(ii)	some seedling growth without any nitrates added / eq ;	(1)

Question Number	Answer	Mark
3(a)(iii)	0 (mmol dm ⁻³) ;	(1)

Question Number	Answer	Mark
3(a)(iv)	reference to seedlings could have all been different lengths to start off / final length is not a measure of growth / growth needs to take into account change (and time) / eq ;	(1)

Question Number	Answer	Mark
3(a)(v)	plants grow in other {dimensions / eq} / idea of more likely to be an error in measuring length ;	(1)

Question Number	Answer	Mark
3(a)(vi)	1. temperature ; 2. volume of solution ; 3. light / eq ; 4. measuring technique / eq ; 5. stage of development e.g. same number of leaves / eq ; 6. idea of seedlings raised in same {environment / eq} / named environmental condition ; 7. idea of seedlings being genetically similar to start with e.g. same parent plant ;	max (3)

Question Number	Answer	Mark
3(b)	0.125 to 0.13 ; mmol dm ⁻³ ;	(2)

Question Number	Answer			Mark
3(c)		Inorganic ion	Molecule made	Main role of the molecule in a plant
		nitrate	amino acid / protein / named protein / enzyme / nucleic acid / named nucleic acid / base ;	plant growth
		calcium	calcium pectate (pectin)	{sticking / holding / eq} (adjacent) plant cells {together / eq} / component of middle lamella ;
				(2)