

Gaseous exchange

Mark scheme

1.	(a)	root hair	1	
	(b)	(i) 85	1	
		<i>if incorrect unit added = 0</i>		
		(ii) 0.85	2	
		<i>ignore working or lack of working</i>		
		<i>accept correct answer from candidate's (i) for 2 marks</i>		
		$\frac{85}{100}$ <i>with no answer or wrong answer gains 1 mark</i>		
		<i>accept ecf</i>		
	(iii)	absorb <u>more</u> water / ions		
		<i>allow 'get / collect / take in / take up / soak up / suck up' for absorb</i>		
		<i>allow 'lots' for more</i>		
		<i>allow 'moisture' for water</i>		
		<i>allow 'minerals / salts / nutrients' for ions</i>		
		<i>do not allow food or named foods</i>		
		<i>absorb water / ions gains 1 mark</i>		
		or		
		<u>large</u> surface area to absorb water / ions (2)	2	
		<i>large surface area linked to incorrect function = 1</i>		
		<i>ignore small so short diffusion pathway</i>		
				[6]
2.	(a)	(i) <u>on diagram</u> :		
		arrow drawn from cell X , through air space and out through stoma above stoma	1	
		(ii) transpiration	1	
	(b)	(i) 13 – 15	1	
		<i>ignore units</i>		
		(ii) any two from:		
		• warmest / hottest / brightest time of day		
		<i>accept warmer / hotter or sun higher in sky</i>		
		• water evaporates fastest		
		• stomata open / more open	2	
				[5]
3.	(a)	guard (cell)	1	
		<i>ignore stoma / stomata</i>		
	(b)	<u>Species A</u> :		
		• stomata open in dark / at night or close in light / in day	1	
		• stomata closed during warm(est) period or open when cool(er)	1	
		• heat (energy) / warmth increases evaporation / transpiration	1	
		<i>must give explicit link between heat and transpiration</i>		

- reduces water loss / evaporation / transpiration
ignore photosynthesis
allow converse points for species B

1

[5]