

Question	Answer	Marks	AO Element	Notes	Guidance
1	10 (cm) ;	1			
2	increase (rate) ;	1			
3	palisade mesophyll cell labelled correctly ; vacuole labelled correctly ;	2			
4	<i>any two from:</i> no photosynthesis in the dark / light required, for photosynthesis / to make glucose / AW ; starch converted to glucose / AW ; (starch / glucose,) used, for respiration OR as a source of energy / AW ;	2			
5	nitrate ;	1			
6	vascular bundle circled on photomicrograph ;	1			
7	L ; xylem ;	2			
8	liver ;	1			
9	B ;	1			

Question	Answer	Marks	AO Element	Notes	Guidance												
10	carbon dioxide ; urea ;	2		A (excess) salts													
11	<table><tr><th>changing condition</th><th>volume of urine</th><th>concentration of urine</th></tr><tr><td>increase in water intake</td><td>increase</td><td>decrease</td></tr><tr><td>increase in temperature</td><td>decrease</td><td>increase</td></tr><tr><td>increase in exercise</td><td>decrease</td><td>increase</td></tr></table>	changing condition	volume of urine	concentration of urine	increase in water intake	increase	decrease	increase in temperature	decrease	increase	increase in exercise	decrease	increase	3		one mark for each correct row	
changing condition	volume of urine	concentration of urine															
increase in water intake	increase	decrease															
increase in temperature	decrease	increase															
increase in exercise	decrease	increase															
12	electrical ; neurones ;	2															
13	<table><tr><th>hormone</th><th>gland</th></tr><tr><td>adrenaline ;</td><td>adrenal</td></tr><tr><td>insulin</td><td>pancreas ;</td></tr><tr><td>oestrogen</td><td>ovary ;</td></tr><tr><td>testosterone ;</td><td>testes</td></tr></table>	hormone	gland	adrenaline ;	adrenal	insulin	pancreas ;	oestrogen	ovary ;	testosterone ;	testes	4					
hormone	gland																
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Question	Answer	Marks	AO Element	Notes	Guidance
14	(pupil / B) becomes smaller / constricts / AW ;	1			
15	reduces the amount of light (entering the eye) / stops too much light (entering eye) ; protects, retina (cells) / receptors / sensors, from damage / AW ;	2			
16	22 (g per hour) ;	1			
17	06:00 ;	1			
18	suitable temperature ; water ; oxygen ;	3			
19	oxygen ; water ; (suitable) temperature ;	3		I air A humidity / moisture A warmth	

Question	Answer	Marks	AO Element	Notes	Guidance
20	1st swimmer(s) slower (than rest); appropriate use of data, swimmer 1 v. 2 / 3 / 4; (mean) reaction times for swimmers 2 - 4 similar; AVP; swimmer 3 team 2 is an anomaly / outlier	3	AO2	max [3]	
21	synapse ;	1			
22	brain ; spinal cord ;	2		either order	
[Total: 40]					