Question number			Answer	Notes	Marks
1	(a)	(i)	1. (food web) order correct; 2. all arrows correct;	plant, hare, fox, cats and eagles need to be in correct order allow order only if in pyramid	2
		(ii)	herbivore / primary consumer;		1
	(b)	(i)	young heather;		1
		(ii)	1. more food / eq; 2. more nutritious food / eq; 3. easier to digest / softer / less spikes / eq; 4. fewer other animals / competition from other herbivores; 5. camouflage / fewer predators / protection from predators / shelter from predators / hide in long grass;	2. ignore better quality / taste 4. ignore competition alone / intraspecific	3
	(c)	(i)	32;;	allow one for 224 ÷ 700	
		(ii)	bilberry;		1

(d)	1. placed at random; 2. same sized quadrat	ignore repeat	
			1

Total 11 marks

Question number		Answer	Notes	Marks
2(a)		1. broken down / digested; 2. bacteria / fungi / microorganisms / saphrophytes / eq;	Ignore eaten	2
(b)		1. (dead) plants / humus then earthworms then birds; 2. arrows correct;	Earthworms in middle =1	2
(c)	(i)	20;		1
	(ii)	C;		1
	(iii)	(yes) not enough repeats / may be anomalous / eq;	Ignore not enough soil	1

Total 7 marks

Question number	Answer		Notes	Marks
3 (a)				4
		Number		
	the number of different tertiary consumers	(1)		
	the number of trophic levels	4;		
	the number of food chains	4;		
	the number of different predators	3;		
	the number of different consumers	7;		

Question number	Answer	Notes	Marks
3 (b) (i)	1. temperature / heat; 2. gravity; 3. moisture / dryness / water / eq;	Ignore food / predators / oxygen / smell	max 2
(ii)	difference for one mark: more in centre / less at edge; reasons for two marks: 1. less light (in centre); 2. reference to predators / humans / eq; 3. more leaf litter/food (in centre); 4. reference to named abiotic factor such as water / temperature;	 Allow converse Ignore safer / shelter unqualified More leaf litter to hide from predators = 2	max 3
(iii)	square drawn;	Allow small squares inside a large square	1
			Total 10 marks

Question number	Answer	Notes	Marks
4　(a)	1. warmer / eq; 2. avoid sweating　avoid water loss / 　　avoid dehydration; 3. avoid overheating / respiration produces heat / 　　eq; 4. less food available / less water in plants / eq;		3
(b)	1. avoid　the sun / avoid high temperature / 　　avoid heat / to shade / avoid overheating / 　　stay cool / cooler at night; 2. avoid　sweating / avoid water loss / 　　avoid dehydration;		2
(c)	1. (eating) plants / plants contain water / 　　grass; 2. respiration;	Ignore food / other animals	1 max
(d)	1. 　(osmo)receptors; 2. 　hypothalamus; 3. 　pituitary gland 4. 　ADH; 5. 　(ADH) <u>increases</u> / <u>more</u> (ADH); 6. 　kidney / nephron; 7. 　collecting duct; 8. 　<u>more</u> permeable; 9. 　reabsorption (of water) / water into blood;	Ignore less urine / less water in urine	6 max

Total　12　marks

Question number	Answer	Notes	Marks
5 (a) (i)	rice;		1
(ii)	(Asian) toad;		1
(b)	(sun)light; water / rain / moisture / eq; carbon dioxide / CO_2; minerals / ions / nutrients / salts / named mineral / eq; temperature / warmth;	ignore sun alone ignore humidity ignore weather / climate / pollution / global warming / drought / flooding / beetles / insects / pests	2
(c)	kills/destroys/reduce number of/remove beetles/consumers/pests; less rice eaten / eq;	because the beetles feed on the rice = 0 stop beetles eating rice = 1	2
3 (d)	idea of increasing number of toads/other organism/ predator; eats <u>beetles</u> / eq; OR capture / hunt mongoose / eq; increase toad population / less toads eaten / eq;	reduce the amount of beetles eating rice = 1 introduce predator to control pest = 1	2
		Total	8