Feeding Relationships
Mark Scheme 1

Level	IGCSE(9-1)
Subject	Biology
Exam Board	Edexcel IGCSE
Module	Double Award (Paper 1B)
Topic	Ecology and the Environment
Sub-Topic	Feeding Relationships
Booklet	Mark Scheme 1

Time Allowed: **58 minutes**

Score: **/48**

Percentage: **/100**

Grade Boundaries:

9	8	7	6	5	4	3	2	1
>90%	80%	70%	60%	50%	40%	30%	20%	10%

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. ig re better quality / taste 4. ig re 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. water / 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) plant / plants contain water / grass; 2. respiration;	Ignore food / other animals	1 max
(d)	1. (osmo)receptors; 2. hypothalamus; 3. pituitary gland 4. DH; 5. (ADH) increases / more (ADH); 6. kidney / nephron; 7. collecting duct; 8. more 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 beetles / 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