

Question	Answers	Extra information	Mark	AO / Specification reference
01.1	blubber – to stay warm flippers – to swim claws – to walk on ice	1 mark for one correct 2 marks for all correct	2	AO2 4.7.1.4
01.2	to prevent water entering the nose when diving		1	AO3 4.7.1.4
01.3	more blubber / thicker fur / white fur		1	AO3 4.7.1.4
01.4	to provide more insulation (as water will be colder) / for camouflage with ice	explanation must be linked to characteristic stated	1	AO3 4.7.1.4
02.1	have a thick layer of fat underneath skin		1	AO2 4.7.1.4
02.2	for camouflage in their different habitats		1	AO2 4.7.1.4
02.3	for insulation / to provide grip / to avoid slipping		1	AO3 4.7.1.4
03.1	food space to hunt water		1 1 1	AO1 4.7.1.1
03.2	light – to produce glucose by photosynthesis water – for photosynthesis and to keep their cells rigid space – so roots can absorb enough water and leaves can	1 mark for one correct 2 marks for two or three correct	3	AO1 4.7.1.1

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	absorb enough light minerals – for healthy growth	3 marks for all correct		
03.3	interdependence		1	AO1 4.7.1.1
03.4	nectar pollen		1 1	AO2 4.7.1.1
04.1	abiotic: temperature soil pH biotic: predators presence of pathogens		1 1	AO2 4.7.1.2
04.2	increase decrease decrease		1 1 1	AO2 4.7.1.2
04.3	less growth / photosynthesis		1	AO2 4.7.1.2
05.1	length – enables them to maximise access to light thorns – prevents them from being eaten		1 1	AO2 4.7.1.4
05.2	eaten by animals / birds dispersed through droppings		1 1	AO2 4.7.1.4

05.3	reduces competition for light / water / space / minerals / nutrients /water		1 1	AO2 4.7.1.4
06.1	habitat – place where an organism lives community – group of different species that interact within an ecosystem ecosystem – living organisms and physical conditions present in an area population – total number of organisms of one species present in an area	1 mark for one correct 2 marks for two or three correct 3 marks for all correct	3	AO1 4.7.1.1
06.2	enables them to reproduce enables to grow (provides energy for growth)		1 1	AO1 4.7.1.1
06.3	one from: light space water minerals		1	AO1 4.7.1.1
07.1	far away from seed dispersal increases decreases light		1 1 1 1 1	AO2 4.7.1.1
07.2	dandelion and sycamore – spread by wind chestnut and tomato – spread by animals		2 2	AO2 4.7.1.4
07.3	sweet tasting / juicy / bright coloured		1	AO3

	to encourage animals to eat it		1	4.7.1.4
08.1	animals and plants present in an ecosystem		1	AO1 4.7.1.1
08.2	one from: temperature / light intensity / soil pH / water availability / oxygen availability / carbon dioxide availability / mineral availability	accept any other named abiotic factor	1	AO2 4.7.1.1 4.7.1.2
08.3	one from: food availability / presence of predators / competition with other species / pathogens	accept any other named biotic factor	1	AO2 4.7.1.1 4.7.1.3
08.4	any two from: light space water minerals / mineral ions		2	AO2 4.7.1.1
08.5	Beech trees produce food by photosynthesis / provide shelter to increase probability of animals' survival		1	AO2 4.7.1.1
09.1	thick fur – to stay warm large ears – to detect predators sharp claws – to catch prey	1 mark for one or two correct 2 marks for all correct	2	AO2 4.7.1.4
09.2	A D E		1 1 1	AO2 4.7.1.4

09.3	one from: light / temperature / soil pH / soil mineral content / Wind intensity / carbon dioxide levels		1	AO1 4.7.1.2
10.1	habitat		1	AO2 4.7.1.1
10.2	mass of grass present hunting		1 1	AO2 4.7.1.1
10.3	any two from: mates – to produce new offspring / to pass on genes to the next generation food – to survive territory / space – for shelter / access to food / find mates	award 1 mark for the factor, and one for the linked explanation accept any sensible answers	4	AO2 4.7.1.1
10.4	increased light intensity increases rate of photosynthesis so plants grow larger more food available for deer so deer population is able to increase	accept converse	1 1 1	AO2 4.7.1.2 4.7.1.3
11.1	Tom's Diner		1	AO2 4.3.1.1 4.3.1.3
11.2	any two from: food could become contaminated as open to the air 30°C is not hot enough to kill most bacteria bacteria likely to reproduce rapidly at 30°C		2	AO2 4.3.1.1 4.3.1.3
11.3	any one from:	any sensible suggestion	1	AO1

	Water Rest Antibiotics			4.3.1.8													
11.4	bacteria require moisture to reproduce		1	AO2 4.3.1.1 4.3.1.3													
11.5	any four from: keep the person who has the disease in isolation which prevents spread through droplet infection / touching clean surfaces with an antiseptic which kills / destroys the pathogen wash hands when touching materials which have been in contact with contagious person to minimise risk of ingesting pathogen wear gloves / mask / protective clothing to minimise risk of inhaling / ingesting pathogen	to award four marks, answers should include two suggested approaches and two explanations of how these minimise the risk of pathogen transmission	4	AO2 4.3.1.1 4.3.1.3													
12.1	the genetic make-up of an organism / the genes that code for a particular characteristic		1														
12.2	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td colspan="2" rowspan="2"></td> <td colspan="2">Mother's alleles</td> </tr> <tr> <td>b</td> <td>b</td> </tr> <tr> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">Father's alleles</td> <td>B</td> <td>Bb</td> <td>Bb</td> </tr> <tr> <td>B</td> <td>Bb</td> <td>Bb</td> </tr> </table>			Mother's alleles		b	b	Father's alleles	B	Bb	Bb	B	Bb	Bb		1	
				Mother's alleles													
		b	b														
Father's alleles	B	Bb	Bb														
	B	Bb	Bb														
12.3	0%		1														

12.4	Bb bb		1 1	
12.5	male mouser: bb female mouse: bb		1 1	