

Question number	Answer	Notes	Marks
1 (a)	shape; order; names; ignore order width to scale / area to scale;	allow names or levels	4
(b)	pyramid shape; different organisms have different masses / less mass further up pyramid / bush has greatest biomass / different bar widths / eq;	allow size	2
(c)	respiration; uneaten / not all eaten; not digested / indigestible; death / decomposition / eq;		max 2
(d)	decrease; less caterpillars / less food / less bush / eq;		2

TOTAL 10 MARKS

Question number	Answer	Notes	Marks
2 (a) (i)	thistle;		1
(ii)	song thrush;		1
(b) (i)	A iris / cornea; B pupil;		2
(ii)	1. sclera / sclerotic; 2. optic nerve; 3. lens / cornea;		3
(c) (i)	number/amount/group/all of organisms of same <u>species</u> ;	allow correct binomial name of a species ignore type	1

(c)(ii)	<ol style="list-style-type: none"> 1. <u>variation / variety</u>; 2. <u>mutatio</u> 3. (white snails) <u>survive / survival / survival of the fittest</u>; 4. not seen/camouflaged / not eaten / not killed; 5. reproduce / breed; 6. pass on gene/allele/DNA (for light shell) to offspring; 	<p>allow converse for black snails</p> <p>ignore do not die</p>	<p>Max 5</p>
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Total 13 marks

Question number	Answer	Notes	Marks
3 (a)	grass;		1
(b) (i)	1600;;	allow one mark for 96 000 or 1.6 or $\div 60$ in working	2
(ii)	1. anaerobic (respiration); 2. less oxygen; 3. lactic acid / low pH; 4. affects enzymes / denatures enzymes; 5. less energy / less ATP;	ignore oxygen debt ignore muscle fatigue / cramp / pain	Max 3

	<p>(c)</p> <ol style="list-style-type: none"> 1. <u>variation</u> / <u>variety</u>; 2. <u>mutation</u> <u>mutates</u>; 3. <u>survive</u> / <u>survival</u> / <u>survival</u> of the fittest; 4. reproduction / breed / mate / produce offspring; 5. pass on gene / DNA / allele; 	<p>allow converse</p> <ol style="list-style-type: none"> 3. ignore several generations / increase in number 4. ignore pass on mutation unless defined / characteristic 	<p>Max 4</p>
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<p>(d)(i)</p>	<p>light passes through retina twice / retina again / more light through retina / more detection by retina / more stimulation of retina / more retina cells stimulated / reflects back through retina / eq;</p>		<p>1</p>
<p>(ii)</p>	<p>large(r) pupil / dilated pupil / expanded pupil / <u>more</u> rods / larger hole in iris / radial muscles contract more / eq;</p>	<p>ignore more cones ignore smaller iris ignore circular muscles relax</p>	<p>1</p>
<p>(e)(i)</p>	<p>1. lion eats <u>protein</u> / meat is <u>protein</u>; 2. amylase cannot digest <u>protein</u>;</p>	<p>1. allow lion does not eat <u>starch</u> / meat has no <u>starch</u> 2. low amylase digests <u>starch</u></p>	<p>2</p>
<p>(ii)</p>	<p>1. increase surface area / increase surface area to volume ratio; 2. <u>protease</u> / <u>pepsin</u>;</p>	<p>ignore enzyme</p>	<p>2</p>

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4 (a)	<table border="1"> <thead> <tr> <th>sentence</th> <th>number</th> </tr> </thead> <tbody> <tr> <td>The number of organisms is</td> <td>(8)</td> </tr> <tr> <td>The number of different types of plant is</td> <td>2 / two;</td> </tr> <tr> <td>The number of animals is</td> <td>6 / six;</td> </tr> <tr> <td>The number of primary consumers is</td> <td>2 / two;</td> </tr> <tr> <td>The number of food chains is</td> <td>5 / five;</td> </tr> </tbody> </table>	sentence	number	The number of organisms is	(8)	The number of different types of plant is	2 / two;	The number of animals is	6 / six;	The number of primary consumers is	2 / two;	The number of food chains is	5 / five;		4
	sentence	number													
	The number of organisms is	(8)													
	The number of different types of plant is	2 / two;													
	The number of animals is	6 / six;													
	The number of primary consumers is	2 / two;													
The number of food chains is	5 / five;														
(b) (i)	producer(s);	1													
(ii)	predator / <u>tertiary</u> consumer / carnivore;	1													
(c) (i)	decrease / fewer / less / eq;	Ignore die out / extinct	1												
(ii)	increase / more / eq;		1												

Total 8 marks