Science - Biology

B1

Question			Marking details	Marks Available
1	*(a)*		fruticose;	1
	(b)	(i)	west;	1
		(ii)	E;	1
		(iii)	A;	1
			Question 1 total	**[4]**

Question			Marking details	Marks Available
2	*(a)*	(i)	E;	1
		(ii)	A or B;	1
		(iii)	A, B or C;	1
	(b)	(i)	3;	1
		(ii)	5;	1
		(iii)	4;	1
	(c)	(i)	I 16.00-20.00; Accept 16-20	1
			II 04.00-07.00; Accept 4-7	1
			(either order)	
		(ii)	<u>Most/ more</u> of the hamsters; Accept 90%	2
			Reject All	
			Are {below ground/ below surface/ in their burrows/ do not come out} at {<u>night</u>/ when it is <u>dark</u>};	
			reverse argument	
			Less hamsters; Accept only 10%	
			Are {above ground/ active} when it is {dark//at night};	
			Reject All	
			Question 2 total	**[10]**

Question			Marking details	Marks Available
3	*(a)*	(i)	23;	2
		(ii)	46;	
	(b)		50%;	1
			Question 3 Total	**[3]**

Question		Marking details	Marks Available
4	*(a)*	algae/ (water) plants/ moss/ named plants; accept weeds/ algal bloom	1
	(b)	bacteria; fungi; Reject germs/ microbes	2
	(c)	oxygen; accept correct symbols	1
		Question 4 Total	**[4]**

Question			Marking details	Marks Available
5	*(a)*	(i)	liver;	1
		(ii)	brain;	1
		(iii)	<u>harm/ hurt/ damage/ reduce growth of</u> } {baby/ child/ foetus/ embryo};	1
	(b)	(i)	4.5;	2
		(ii)	1.5 (ecf);	
	(c)		Deter people from drinking/ cut down consumption of alcohol/ less people spending money on alcohol/ people buy less alcohol; Reject <u>stop</u> people drinking/ buying alcohol;	1
			Question 5 Total	**[6]**

Question			Marking details	Marks Available
6	(a)		Kills the weeds/ plants (reject animals/ pests);	2
			Reject stop weeds growing	
			that compete (with the crop)/ {more room/ nutrients/ light} for crop;;	
	(b)	(i)	2 4 (5) 3 1 6 ;;;;	4
			5 correct = 4	
			4 correct = 3	
			3 correct = 2	
			2 correct = 1	
			1 correct = 0	

		(ii)			1

Argument	✓ or ✗
Increased crop yield	given
Less herbicide used	given
Reduced biodiversity	✗
Cheaper food	✓
Long term effects unknown	✗

All 3 correct for 1 mark;

		(iii)	Any two from,	2

Cost of extra herbicide/ farmers have to buy extra herbicide;

Competition from (resistant)soya/ description of competition;

Herbicide kills maize;

Question 6 Total **[9]**

Question	Marking details	Marks Available
7/1 *(a)*	growth (response) shown by plants;	1
	to a {one sided/unilateral} stimulus;	1
	Accept example of growth of plant towards {light source/ pull of gravity/ source of gravity} / sun;	1
(b) (i)	shoot drawn growing up from the horizontal;	2
	root shown growing down from the horizontal;	
	Must show at least slight curvature in the correct direction	
	Shoot should have leaves/ root should have an end	
(ii)	I positive gravitropism/ geotropism;	2
	Accept negative gravitropism/ geotropism if relates to drawing	
	Reject negative phototropism	
	II positive phototropism;	
	(Accept: negative gravitropism/ geotropism)	
	ANSWERS MUST RELATE TO THEIR DRAWING	
	Question 7 Total	**[6]**

Question		Marking details	Marks Available

8/2　*(a)*　　Any 2 from:　　　　　　　　　　　　　　　　　　　　　　　　2

the <u>more</u> overweight the greater the chance (of early death);

the <u>more</u> overweight a person is initially the greater the chance

(of <u>early</u> death) after losing weight;

losing weight decreases the chance (of early death);

Reject greater chance of death (not qualified by 'early')

(b)　　(i)

John's lunch	kJ
large portion of chips (300g)	3195
4 slices of bread and butter	2080
large fried fish 250g	1375
2 cups of black coffee with 4 teaspoons of sugar per cup	1360
200g portion of apple pie	2400
50 g portion of custard	250
Total energy content of John's lunch	10,660

2

Foods = 1 mark;

Total = 1 mark; (ecf)

Question		Marking details	Marks Available
	(ii)	160 (kJ);	1
		Allow ECF from (b)(i) as long as candidate's answer is greater than 10 500	
	(iii)	19%	1
		Question 8/2 Total	**[6]**

Question	Marking details	Marks Available
9/3 (a)	A <u>erector</u> muscle;	2
	B <u>sweat</u> pore;	
(b)	Any two of the following.	4
	1 mark for response 1 mark for explanation(2x2)	
	Response hairs flattened; NOT hairs relax/ lie down	
	Explanation {thin layer of / insulating layer of/ less} air trapped so more heat {can escape/ be lost}; NOT no air trapped	
	Response sweat (present)/ sweating/ sweat produced;	
	Explanation <u>heat</u> lost by <u>evaporation</u>/ <u>heat</u> {removed from the body/ used} to <u>evaporate</u> sweat;	
	Response vasodilation/blood vessels <u>wider</u>; NOT larger/ increase in size/ grow/ expand/ bigger	
	Explanation <u>more</u> blood near skin surface <u>more</u> heat lost; NOT blood gets nearer to skin surface	

Question 9/3 Total

Question	Marking details	Marks Available
10/4	**Indicative content**	6

Carbon dioxide taken up by plants for photosynthesis.
Carbon used in manufacture of carbohydrates/ sugar/ starch/ protein/ fat.
Plants eaten by animals.
Plants and / or animals respire and return carbon (dioxide) to air.
Plants and/ or animals die.
Decay/ named organisms release carbon (dioxide) to air.
Reference to fossilisation due to lack of decay.
Combustion/ burning of fossil fuels releases carbon (dioxide).

5-6 marks
The candidate constructs an articulate, integrated account correctly linking relevant points, such as those in the indicative content, which shows sequential reasoning. The answer fully addresses the question with no irrelevant inclusions or significant omissions. The candidate uses appropriate scientific terminology and accurate spelling, punctuation and grammar.

3-4 marks
The candidate constructs an account correctly linking some relevant points, such as those in the indicative content, showing some reasoning. The answer addresses the question with some omissions. The candidate uses mainly appropriate scientific terminology and some accurate spelling, punctuation and grammar.

1-2 marks
The candidate makes some relevant points, such as those in the Indicative content, showing limited reasoning. The answer addresses the question with significant omissions. The candidate uses limited scientific terminology and inaccuracies in spelling, punctuation and grammar.

0 marks
The candidate does not make any attempt or give a relevant answer worthy of credit

Question 10/4 Total **[6]**