2011 Biology

Intermediate 1

Finalised Marking Instructions

GENERAL MARKING ADVICE: BIOLOGY

The marking schemes are written to assist in determining the "minimal acceptable answer" rather than listing every possible correct and incorrect answer. The following notes are offered to support Markers in making judgements on candidates' evidence, and apply to marking both end of unit assessments and course assessments.

1. There are no **half marks**. Where three answers are needed for two marks, normally one or two correct answers gain one mark.

2. In the mark scheme, if a word is **underlined** then it is essential; if a word is (**bracketed**) then it is not essential.

3. In the mark scheme, words separated by / are **alternatives**.

4. There are occasions where the second answer negates the first and no marks are given. There is no hard and fast rule here, and professional judgement must be applied. Good marking schemes should cover these eventualities.

5. Where questions on data are in two parts, if the second part of the question is correct in relation to an incorrect answer given in the first part, then the mark can often be given. The general rule is that candidates should not be penalised repeatedly.

6. If a numerical answer is required and units are not given in the stem of the question or in the answer space, candidates must supply the units to gain the mark. If units are required on more than one occasion, candidates should not be penalised repeatedly.

7. Clear indication of understanding is what is required, so:

   - if a description or explanation is asked for, a one word answer is not acceptable
   - if the questions ask for **letters** and the candidate gives words and they are correct, then give the mark
   - if the question asks for a word to be **underlined** and the candidate circles the word, then give the mark
   - if the result of a calculation is in the space provided and not entered into a table and is clearly the answer, then give the mark
   - **chemical formulae** are acceptable eg CO_2, H_2O
   - contractions used in the Arrangements document eg DNA, ATP are acceptable
   - words not required in the syllabus can still be given credit if used appropriately eg metaphase of meiosis

8. Incorrect **spelling** is given. Sound out the word(s),

   - if the correct item is recognisable then give the mark
   - if the word can easily be confused with another biological term then **do not** give the mark eg ureter and urethra
   - if the word is a mixture of other biological words then **do not** give the mark, eg mellum, melebrum, amniosynthesis.

9. **Presentation of Data:**

    - if a candidate provides two graphs or bar charts (eg one in the question and another at the end of the booklet), mark both and give the higher score
    - if the question asks for a line graph and a histogram or bar chart is given, then do not give the mark(s). Credit can be given for labelling the axes correctly, plotting the points, joining the points either with straight lines or curves (best fit is rarely used)
    - if the x and y data are transposed, then do not give the mark
    - if the graph used less than 50% of the axes, then do not give the mark
    - if 0 is plotted when no data is given, then do not give the mark (ie candidates should only plot the data given)
    - no distinction is made between bar charts and histograms for marking purposes. (For information: bar charts should be used to show discontinuous features, have descriptions on the x axis and have separate columns; histograms should be used to show continuous features; have ranges of numbers on the x axis and have contiguous columns.)
    - where data is read off a graph it is often good practice to allow for acceptable minor error. An answer may be given $7\cdot3 \pm 0\cdot1$.

10. **Extended response questions:** if a candidate gives two answers where there is a choice, mark both and give the higher score.

11. **Annotating scripts:**

    - put a 0 in the box if no marks awarded – a mark is required in each box
    - indicate on the scripts why marks were given for part of a question worth 3 or 2 marks. A ✓ or ✗ near answers will do.

12. **Totalling scripts:** errors in totalling can be more significant than errors in marking:

    - enter a correct and carefully checked total for each candidate
    - do not use running totals as these have repeatedly been shown to lead to more errors.
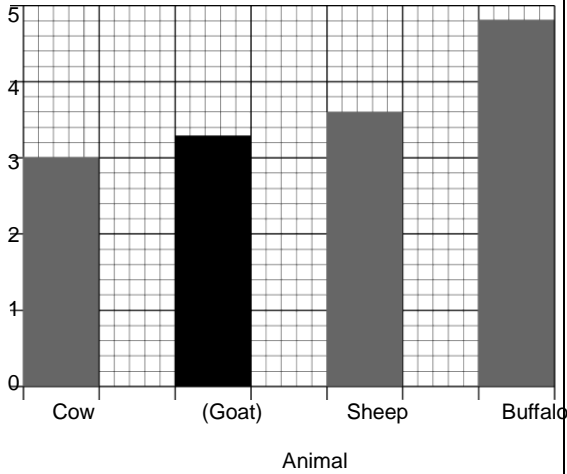
Part Two: Marking Instructions for each Question

Section A

Question			Expected Answer/s	Max Mark	Additional Guidance
1			D	1	
2			D	1	
3			B	1	
4			D	1	
5			D	1	
6			A	1	
7			A	1	
8			C	1	
9			D	1	
10			B	1	
11			D	1	
12			B	1	
13			C	1	
14			D	1	
15			A	1	
16			C	1	

Question			Expected Answer/s	Max Mark	Additional Guidance
17			B	**1**	
18			B	**1**	
19			D	**1**	
20			B	**1**	
21			A	**1**	
22			B	**1**	
23			C	**1**	
24			A	**1**	
25			C	**1**	

Section B

Question			Expected Answer/s	Max Mark	Unacceptable Answers
1	**a**	**i**	Reduce/low(er) (levels of) fat/calories Less fat/calories	**1**	Helps them lose weight Rich in protein
1	**a**	**ii**	Gout	**1**	
1	**a**	**iii**	Any **two** of Chunks of beef or mince/chicken breasts/meatballs/turkey roasts/mince (with/without chunks of beef)	**1**	Only one correct answer or one correct answer and one incorrect answer or beef, chicken, turkey alone.
1	**b**		Antibiotics/named antibiotic/alcohol/ named alcoholic product such as beer, wine/proprietary brand of alcoholic drink/ Kefir/yoghurt/enzymes/rennet	**1**	Bacteria alone
1	**c**		Yeast	**1**	A named type of yeast does not negate
2	**a**	**i**	Curds	**1**	'and whey' negates Unripened cheese
2	**a**	**ii**	<u>Protein clots/thickens</u> or Converts protein into curds	**1**	It clots/thickens it Produces curds
2	**a**	**iii**	Calves (stomach) Genetically engineered bacteria	**1**	Cow stomach
2	**b**	**i**	4.6 Does not have to be in table	**1**	
2	**b**	**ii**	Sheep	**1**	
2	**c**	**i**	<u>Cow</u> <u>Sheep</u> and <u>Buffalo</u> and label: <u>Animal</u> Can be in any order as long as plots are correct All 4 correct = 1 mark	**1**	Correct names but no label 'Animal'
2	**c**	**ii**	Scale on vertical axis – at least 2 defining numbers, in addition to '0' provided	**1**	

	Question		Expected Answer/s	Max Mark	Unacceptable Answers
2	**c**	**iii**	Plots all correct, no 'topless bars'	**1**	'Daylight' between plotted bar and grid Top line only. Shading over top line.
3	**a**	**i**	40 (°C)	**1**	
3	**a**	**ii**	30 (°C)	**1**	
3	**a**	**iii**	(Same) type/size/colour or other feature of cloth or (same) type/size/concentration of stain Type of fabric The length of time the stain is on the cloth before the investigation. The volume of the stain.	**1**	Any reference to containers, concentration/volume of detergent, time General statement such as 'the stain' or 'same stain' Identical pieces of cloth
3	**a**	**iv**	✓ Repeat the investigation at the same temperatures.	**1**	Ticking more than one box negates.
3	**b**		Enzymes harmless coating Both correct = 1 mark	**1**	If one only is correct, no mark (no ½ marks).
3	**c**		Remove the (toxic) chemicals/ Reduce the chemicals in detergents/ Use less detergents Treat the waste water	**1**	Use less Wash at a lower temperature Treat it Filtering the water

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Question			Expected Answer/s	Max Mark	Unacceptable Answers
4	a		<u>74</u>	1	
4	b		(Pulse rate) increases/(with exercise) It increases.	1	Any re-statement of results It is high (without comparison) An additional incorrect answer would negate.
4	c		Three/3	1	
4	d		Students were fitter/had been (regularly) training/more exercise/regular exercise They were fitter/had been training	1	They are fit (without comparison) Practice They are healthy
5	a		**Food Group Use** Fats Protect against deficiency disease Carbohydrates Provide energy Proteins Growth & repair of cells/tissues Vitamins & minerals All 4 correct = 2 2, 3 correct = 1 0, 1 correct = 0	2	More than one line from a food group loses that mark
5	b		(table below)	1	

5 b

Source of vitamin C	Percentage of daily intake (%)
<u>Fruit</u>	
<u>Vegetables</u>	
	<u>10</u>

All 3 correct = 1

Question			Expected Answer/s	Max Mark	Unacceptable Answers
6	a	i			

Person	Body mass (kg)	Height (cm)	Description
X			
Y			Underweight
Z			Obese

Both correct = 1   **1**

Question			Expected Answer/s	Max Mark	Unacceptable Answers
6	a	ii	1.54 and 1.80/1.8 Or in reverse order Both correct = 1	**1**	
6	b	i	Anorexia/anorexic/bulimia/bulimic	**1**	Eating disorder
6	b	ii	Heart disease/attack/failure/problems/ conditions/high blood pressure/stroke/ angina/kidney failure/arthritis/diabetes or other named condition	**1**	Blood pressure alone
6	c		Skin (fold) callipers/body fat sensor	**1**	Body fat/callipers/fat sensor Scales
7	a	i

Label, including units (years) = 1
Correctly plotted and joined = 1 | **2** | Wrongly plotting 10, 145 instead of 15, 145.
Daylight between plots and point on grid.
More than one line drawn (double line)
Plotting to 0,0.
Plotting beyond 60

Bar graph instead of line graph – no plot mark (can still get label mark, if correct) |

	Question		Expected Answer/s	Max Mark	Unacceptable Answers
7	a	ii	The older the person, the lower the Target Heart Rate/pulse rate/beats per min or converse. A trend is required	1	Any re-statement of results Need 'Target Heart Rate', 'Heart Rate' alone is insufficient Target on own.
7	b		<u>Arteries</u> <u>veins</u> Both correct = 1	1	
8	a	i	<u>Ladybirds</u> and <u>Lacewings</u> Both correct = 1	1	
8	a	ii	<u>Biological</u> (control)	1	
8	b		Kill them, poison them, less pests for them to eat so the numbers reduce, reduce numbers.	1	Less for them to eat
8	c		Plant disease: (Grey) mould, And Method of control: Burning/fungicide/antifungal removing affected parts of plants Both correct = 1	1	fungal disease, fungus

8 d i

Beneficial insect	Number of pairs of wings	Spots
<u>hover flies</u>		
	0/no/none	
		<u>Yes</u> spots
<u>wasps</u>		
	<u>2</u>	<u>Yes</u> spots

<div align="right">6 correct = 2
3, 4, 5 correct = 1
0, 1, 2 correct = 0</div>

Max Mark: **2**

Question			Expected Answer/s	Max Mark	Unacceptable Answers
8	d	ii	Ladybirds have 1 pair of wings and lacewings have 2 pairs of wings or The number/amount of (pairs of) wings Or ladybirds have fewer wings	1	Single statement alone is not sufficient eg lacewings have two pairs of wings Or incorrect statement of number of wings (omission of 'pairs of')
8	e		<u>4</u>	1	
9	a		<table><tr><td>*Part*</td><td>*Name*</td><td>*Description of function*</td></tr><tr><td></td><td><u>Embryo</u></td><td>Grows/develops into (new) plant/shoot or root</td></tr><tr><td></td><td></td><td>Protection/protects</td></tr><tr><td></td><td><u>Food store</u></td><td></td></tr></table> Each correct row = 1	3	Inclusion of 'shoot' or 'root' does not negate 'Grows/ develops' alone is insufficient Food or store alone are insufficient food storage. Seed coat keeps the seed safe.
9	b		Delay in germination (until spring) or Seed does not germinate/grow until spring/conditions are right/seeds are inactive until the conditions are right	1	They don't germinate/grow/ sleep until spring/not growing yet Growth delayed.
9	c	i	Anemone	1	
9	c	ii	<u>Warm</u>, (then) <u>cold</u>, (then) <u>warm</u>	1	Warm then cold
9	d		Oxygen/air/water/moisture One or more correct answer (oxygen and water)	1	Sunlight or any other wrong answer negates an otherwise correct answer.(water and sunlight) Suitable temperature alone.

[END OF MARKING INSTRUCTIONS]