



**2009 Biology**

**Intermediate 1**

**Finalised Marking Instructions**

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## 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<sub>2</sub>, H<sub>2</sub>O
  - 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  $7.3 \pm 0.1$ .

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.

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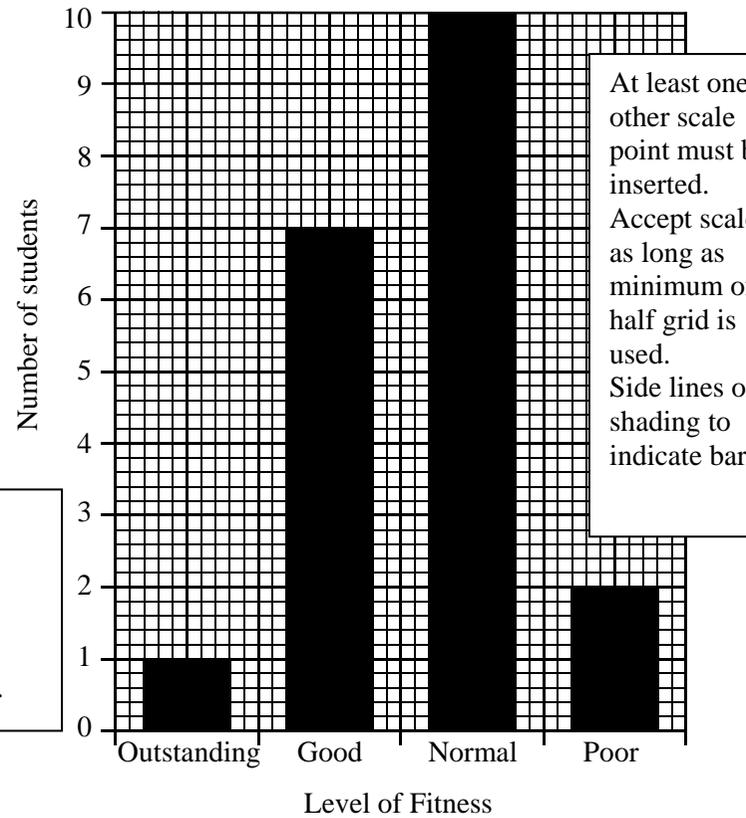
**Section A**

1.	A	11.	C	21.	C
2.	A	12.	B	22.	B
3.	B	13.	B	23.	D
4.	C	14.	A	24.	D
5.	A	15.	A	25.	C
6.	D	16.	B		
7.	B	17.	D		
8.	D	18.	D		
9.	D	19.	C		
10.	B	20.	A		

## Marking Instructions – Biology Intermediate 1 2009

Question	Acceptable answers	Marks	Unacceptable Answer	Negates										
1 (a)	<p><u>Mental</u> and <u>physical</u></p> <p style="text-align: right;">Both correct = 1</p>	<b>1</b>												
(b)	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;"><i>Instrument</i></th> <th style="text-align: center;"><i>Physiological Measurement</i></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Skin fold calliper</td> <td style="text-align: center;">Temperature</td> </tr> <tr> <td style="text-align: center;">Thermometer</td> <td style="text-align: center;">Body fat</td> </tr> <tr> <td style="text-align: center;">Sphygmomanometer</td> <td style="text-align: center;">Blood pressure</td> </tr> <tr> <td style="text-align: center;">Pulsometer</td> <td style="text-align: center;">Heart rate</td> </tr> </tbody> </table> <p style="text-align: right;">                     All 4 correct = 2                      2, 3 correct = 1                      0, 1 correct = 0                 </p>	<i>Instrument</i>	<i>Physiological Measurement</i>	Skin fold calliper	Temperature	Thermometer	Body fat	Sphygmomanometer	Blood pressure	Pulsometer	Heart rate	<b>2</b>		
<i>Instrument</i>	<i>Physiological Measurement</i>													
Skin fold calliper	Temperature													
Thermometer	Body fat													
Sphygmomanometer	Blood pressure													
Pulsometer	Heart rate													

Question	Acceptable answers	Marks	Unacceptable Answer	Negates									
2 (a) (i)	Windpipe/trachea/ring of cartilage	1											
(ii)	R	1											
(b)	<table border="1" data-bbox="376 507 1008 616"> <thead> <tr> <th data-bbox="376 507 551 544"><i>True</i></th> <th data-bbox="551 507 719 544"><i>False</i></th> <th data-bbox="719 507 1008 544"><i>Correction</i></th> </tr> </thead> <tbody> <tr> <td data-bbox="376 544 551 580"></td> <td data-bbox="551 544 719 580">✓</td> <td data-bbox="719 544 1008 580">Carbon dioxide/CO<sub>2</sub></td> </tr> <tr> <td data-bbox="376 580 551 616"></td> <td data-bbox="551 580 719 616">✓</td> <td data-bbox="719 580 1008 616">Increases</td> </tr> </tbody> </table> <p data-bbox="734 651 1008 683">1 mark per correct row</p>	<i>True</i>	<i>False</i>	<i>Correction</i>		✓	Carbon dioxide/CO <sub>2</sub>		✓	Increases	2		
<i>True</i>	<i>False</i>	<i>Correction</i>											
	✓	Carbon dioxide/CO <sub>2</sub>											
	✓	Increases											

Question	Acceptable answers	Marks	Unacceptable Answer	Negates
3 (a)	Outstanding	1		
(b)(i)	 <p data-bbox="369 526 414 766">Number of students</p> <p data-bbox="481 1069 1008 1101">Outstanding    Good    Normal    Poor</p> <p data-bbox="660 1117 862 1149">Level of Fitness</p> <div data-bbox="190 821 425 1061" style="border: 1px solid black; padding: 5px; width: fit-content;">       Height of bar determines mark. Don't penalise width/space between bars.     </div> <div data-bbox="952 383 1176 869" style="border: 1px solid black; padding: 5px; width: fit-content;">       At least one other scale point must be inserted. Accept scale as long as minimum of half grid is used. Side lines or shading to indicate bars.     </div> <p data-bbox="784 1181 1108 1252" style="text-align: right;">       Correct label and scale = 1        Correct plots = 1     </p>	2	No line across top of bars. 'daylight' at top of the bar.	
(ii)	50 (%)	1		

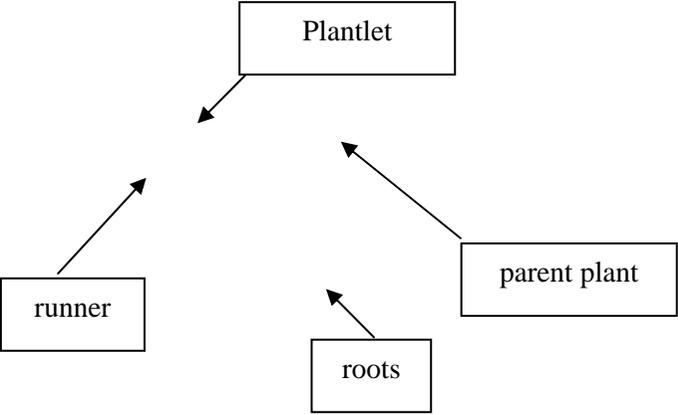
Question	Acceptable answers	Marks	Unacceptable Answer	Negates												
<p><b>4 (a) (i)</b></p> <p><b>(ii)</b></p> <p><b>(iii)</b></p> <p><b>(iv)</b></p>	<p>14 (units)</p> <table border="1" data-bbox="371 368 1108 809"> <thead> <tr> <th></th> <th><i>More than the sensible limit</i></th> <th><i>Less than the sensible limit</i></th> </tr> </thead> <tbody> <tr> <td>A woman who drinks 3 units of alcohol every day</td> <td>✓</td> <td></td> </tr> <tr> <td>A man who drinks 4 units of alcohol, 5 times a week</td> <td></td> <td>✓</td> </tr> <tr> <td>A woman who drinks 4 units of alcohol, 5 times a week</td> <td>✓</td> <td></td> </tr> </tbody> </table> <p>3 correct = 2 2 correct = 1 0, 1 correct = 0</p> <p>9 (units)</p> <p>4 (hours)</p>		<i>More than the sensible limit</i>	<i>Less than the sensible limit</i>	A woman who drinks 3 units of alcohol every day	✓		A man who drinks 4 units of alcohol, 5 times a week		✓	A woman who drinks 4 units of alcohol, 5 times a week	✓		<p><b>1</b></p> <p><b>2</b></p> <p><b>1</b></p> <p><b>1</b></p>		
	<i>More than the sensible limit</i>	<i>Less than the sensible limit</i>														
A woman who drinks 3 units of alcohol every day	✓															
A man who drinks 4 units of alcohol, 5 times a week		✓														
A woman who drinks 4 units of alcohol, 5 times a week	✓															
<p><b>(b)</b></p>	<p>Smoking/drugs/poor or unbalanced diet/any other avoidable risk</p>	<p><b>1</b></p>														

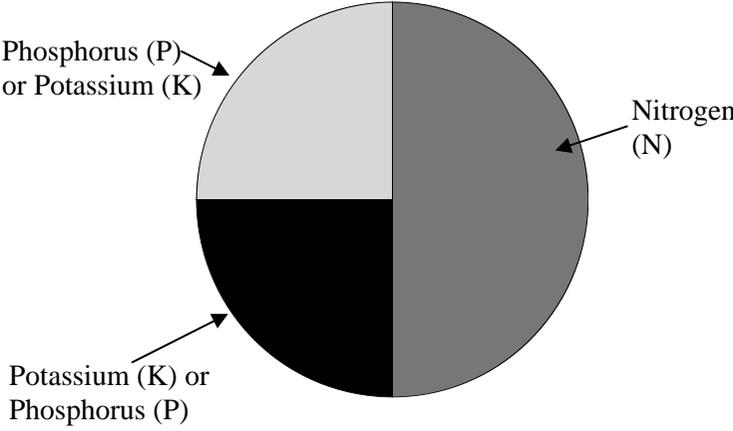
Question	Acceptable answers	Marks	Unacceptable Answer	Negates												
5 (a)	<table border="1" data-bbox="371 199 1099 486"> <tr> <td data-bbox="371 199 573 284">Stout</td> <td data-bbox="573 199 958 284"></td> <td data-bbox="958 199 1099 284">4.5(%)</td> </tr> <tr> <td data-bbox="371 284 573 352"></td> <td data-bbox="573 284 958 352">Black or <u>dark</u> brown</td> <td data-bbox="958 284 1099 352">6.5(%)</td> </tr> <tr> <td data-bbox="371 352 573 421">Golden (ale)</td> <td data-bbox="573 352 958 421"></td> <td data-bbox="958 352 1099 421">5.3(%)</td> </tr> <tr> <td data-bbox="371 421 573 486">Best bitter</td> <td data-bbox="573 421 958 486">Brown, tawny or amber</td> <td data-bbox="958 421 1099 486"></td> </tr> </table> <p data-bbox="831 523 1106 624" style="text-align: right;"> All 4 rows correct = 2  2 or 3 rows correct = 1  0 or 1 row correct = 0 </p>	Stout		4.5(%)		Black or <u>dark</u> brown	6.5(%)	Golden (ale)		5.3(%)	Best bitter	Brown, tawny or amber		<b>2</b>		
Stout		4.5(%)														
	Black or <u>dark</u> brown	6.5(%)														
Golden (ale)		5.3(%)														
Best bitter	Brown, tawny or amber															
(b)	Alcohol            carbon dioxide  <p style="text-align: right;">Both correct = 1</p>	<b>1</b>														

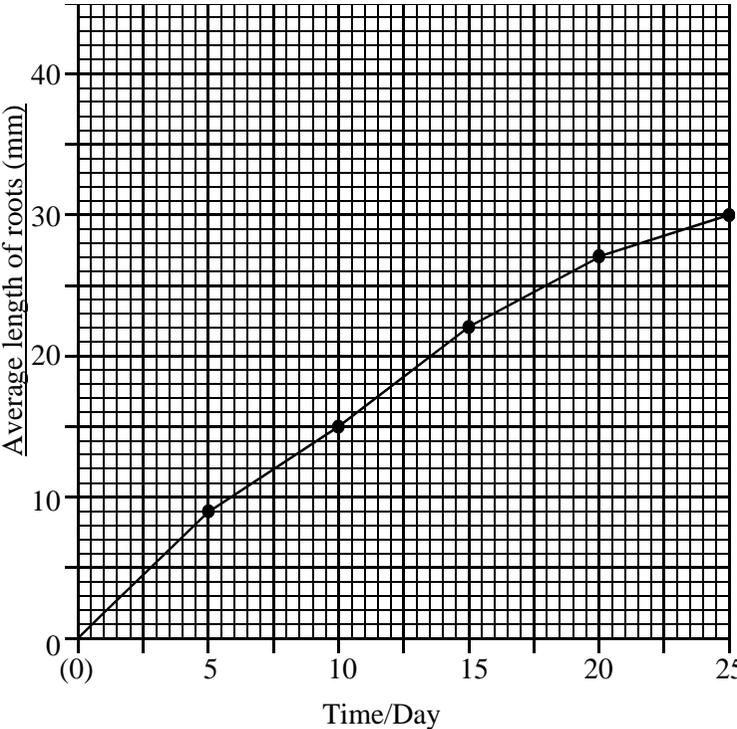


Question	Acceptable answers	Marks	Unacceptable Answer	Negates
7 (a) (i)	8 (g/100cm <sup>3</sup> )	1		
(ii)	3 (times more sugar)	1		
(b) (i)	Pasteurisation/pasteurising	1	UHT	
(ii)	<u>Skimmed</u> (milk)	1	Semi-skimmed	
(c)	Prevent/protect against disease or named disease Strong teeth/bones/healthy skin	1	Keep you healthy General statement about health, growth or immunity	

Question	Acceptable answers	Marks	Unacceptable Answer	Negates
8 (a) (i)	P	1		Additional letter(s)
(ii)	Q and S	1		Additional letter(s)
(iii)	Y	1		
(b)	Resistant/resistance Bacteria carry on growing/multiplying.	1	General statement such as 'they don't work' Any reference to immunity.	

Question	Acceptable answers	Marks	Unacceptable Answer	Negates
9 (a)	 <p data-bbox="929 683 1115 778">All correct = 2 2, 3 correct = 1 0, 1 and = 0</p>	2		
(b)	Tuber/bulb/offsets	1	Named plant Roots Plantlet Runners Reference to artificial propagation	

Question	Acceptable answers	Marks	Unacceptable Answer	Negates
10 (a)	 <p data-bbox="369 263 593 327">Phosphorus (P) or Potassium (K)</p> <p data-bbox="996 327 1102 391">Nitrogen (N)</p> <p data-bbox="369 590 593 654">Potassium (K) or Phosphorus (P)</p> <p data-bbox="907 694 1102 726">All 3 correct = 1</p>	1		
(b)	2:3:2	1	Any un-simplified answer	
(c)	Potassium/K	1		

Question	Acceptable answers	Marks	Unacceptable Answer	Negates
11 (a)	More reliable results/increase reliability	1	General statement eg, 'some seeds won't grow'	
(b)	 <p data-bbox="398 1145 705 1342">Accept horizontal scale which uses half available grid width or more. If drawn line continues beyond (25, 30), lose plot mark</p> <p data-bbox="797 1158 1104 1254">Horizontal scale = 1 mark Vertical label = 1 mark Plots = 1 mark</p>	3	Double lines - lose plot mark. If bar graph drawn - lose plot mark. 'Daylight' between line and intended plot - lose plot mark.	

Question	Acceptable answers	Marks	Unacceptable Answer	Negates		
(c)	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="padding: 2px;">0 – 5</td> <td style="padding: 2px; text-align: center;">✓</td> </tr> </table>	0 – 5	✓	<b>1</b>		More than one box ticked.
0 – 5	✓					
(d)	Control/comparison or Reference to validity or To see the effect of water alone or water without minerals.	<b>1</b>	General statement such as ‘to see if there are different results’.			

Question	Acceptable answers	Marks	Unacceptable Answer	Negates
<p><b>12 (a) (i)</b></p>	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px 10px;">18cm</div> <div style="border: 1px solid black; padding: 2px 10px;">20cm</div> <div style="border: 1px solid black; padding: 2px 10px;">6cm</div> </div> <p style="text-align: right; margin-top: 20px;">All 3 correct = 1</p>	<p><b>1</b></p>		
<p><b>(ii)</b></p>	<p>Score/split/slit (seed) coat or Soak in water</p>	<p><b>1</b></p>		
<p><b>(b)</b></p>	<p>Mixed with sand</p>	<p><b>1</b></p>	<p>Sand alone</p>	
<p><b>(c)</b></p>	<p>Dormancy/dormant</p>	<p><b>1</b></p>		

[END OF MARKING INSTRUCTIONS]