



**2007 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**

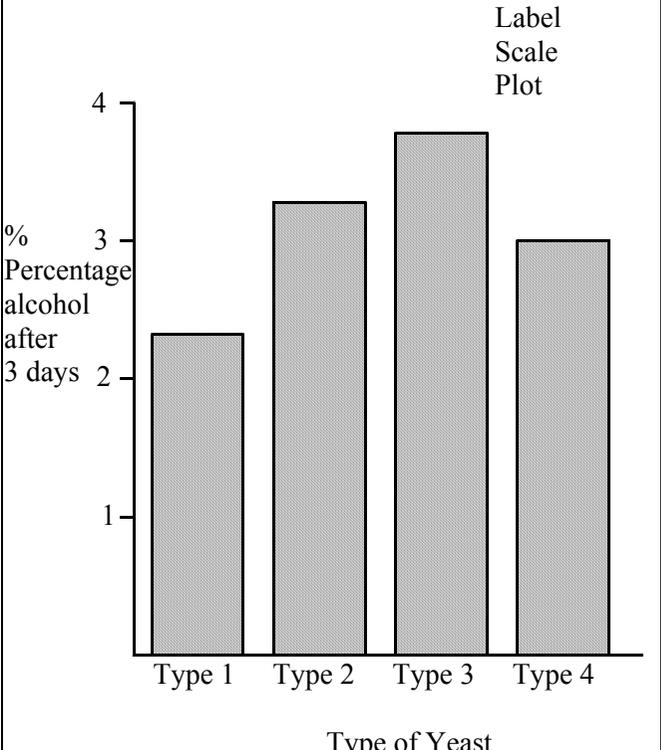
1.	A	11.	C	21.	D
2.	C	12.	B	22.	D
3.	C	13.	D	23.	B
4.	B	14.	B	24.	B
5.	C	15.	D	25.	A
6.	C	16.	A		
7.	A	17.	D		
8.	A	18.	A		
9.	C	19.	A		
10.	D	20.	B		

## Marking Instructions – Biology Intermediate 1 2007

Question	Acceptable answers	Marks	Unacceptable Answer	Negates
1 (a)	<u>Lather control agents</u>	1		
(b)	To soften the water	1		
(c)	<u>Enzymes</u> <u>They are</u> (very) powerful/strong	1	Powerful	
(d)	Protease(s)/amylase(s)/lipase(s) <u>or</u> any named enzyme	1		+ any other chemical

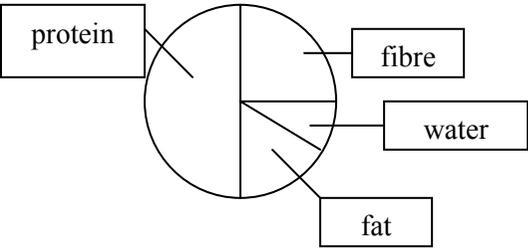
Question	Acceptable answers	Marks	Unacceptable Answer	Negates
2 (a)	Calves/ <u>genetically engineered</u> fungi/yeast/bacteria Calves stomach/GM bacteria	1	Yeast Cows Fungus Fungal rennet	
(b)	Whey	1	Why Weigh Way	
(c)	Sugar, acid Protein, flavour	2		

Question	Acceptable answers	Marks	Unacceptable Answer	Negates
<b>3 (a) (i)</b>	The antibiotic was only used against one type of bacteria/only tested one type of bacteria	<b>1</b>		Reference to reliability
<b>(ii)</b>	Repeat it/do it twice/do it again/use different bacteria/ set up plates with one antibiotic in each	<b>1</b>	Use more bacteria Leave for longer Reference to time/temperature Use bigger dish	...and change temperature
<b>(b)</b>	Over-use (of antibiotics)/used so much/used many times Over prescription/taking when not needed	<b>1</b>	They've got used to it Reference to immunity Constant use Not finishing course Evolved/adapted	Antibiotics have become not strong enough

Question	Acceptable answers	Marks	Unacceptable Answer	Negates
<p><b>4 (a) (i)</b></p>	 <p style="text-align: right;">Label Scale Plot</p> <p>Minimum of two scale points Zero not required Bars same width/thickness</p>	<p><b>1</b> <b>1</b> <b>1</b></p>	<p>No line on top of bar 'Daylight' Bars not drawn above corresponding label – lose plot mark Bar not correct width – lose plot mark</p>	

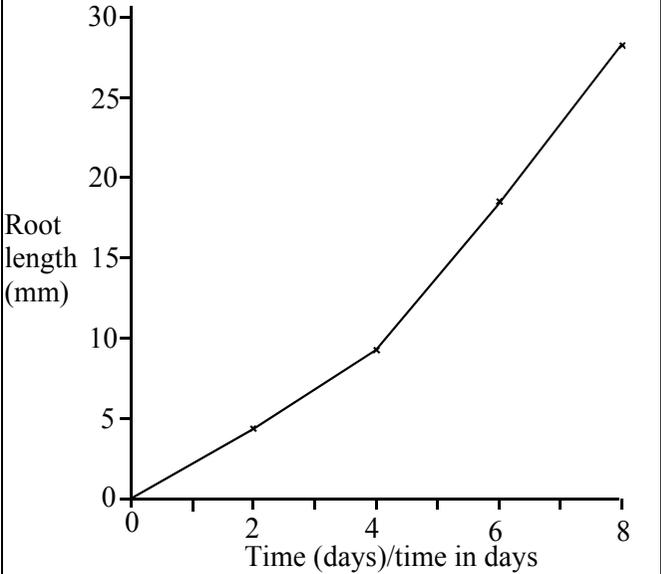
Question	Acceptable answers	Marks	Unacceptable Answer	Negates
<b>(ii)</b>	Any reasonable correct conclusion eg Type 3 (yeast) makes/produced most alcohol Type 1 produced least alcohol Different yeasts produce different percentages of alcohol Type 3 best at producing alcohol	<b>1</b>	Re-statement of results Type 3 is highest/best Type 1 is lowest/worst Type 3 has highest % alcohol	
<b>(b) (i)</b>	Fermentation/fermenting/anaerobic respiration	<b>1</b>	Brewing	
<b>(ii)</b>	Carbon dioxide/CO <sub>2</sub>	<b>1</b>		

Question	Acceptable answers	Marks	Unacceptable Answer	Negates
<b>5 (a)</b>	15mg	<b>1</b>		
<b>(b)</b>	High blood pressure/stroke/harms fetus Heart attack/disease/failure/damage to heart/(lung) cancer/lung disease (or any named lung disease)/asthma Mouth cancer	<b>1</b>	Liver disease Passive smoking	
<b>(c)</b>	Reduces/decreases/harder for blood to carry oxygen	<b>1</b>	Slows Stops/disables/removes oxygen	

Question	Acceptable answers	Marks	Unacceptable Answer	Negates
6 (a)	 <p>Correct proportions = 1  Correct labels/key = 1</p> <p>Drawn lines must touch tick marks</p>	2	Double lines Very thick lines Wobbly lines Percentage (number) instead of labels Missing centre point Initials instead of names	
(b)	25 grams	1		
(c)	7:3	1		

Question	Acceptable answers	Marks	Unacceptable Answer	Negates
7 (a) (i)	Bronchus/bronchi Ring of cartilage	1		Windpipe
(ii)	Carbon dioxide/CO <sub>2</sub>	1		
(b)	<p>Tidal volume</p> <p>Vital capacity</p> <p>Peak flow</p> <p>all 3 correct = 2 1 or 2 correct = 1</p>	2		Extra line(s)

Question	Acceptable answers	Marks	Unacceptable Answer	Negates
<b>8 (a)</b>	55%	<b>1</b>		
<b>(b) (i)</b>	Capillary/capillaries	<b>1</b>		
<b>(ii)</b>	Artery arrow drawn coming away from the heart and vein arrow drawn going towards the heart ( <u>both</u> required for mark)	<b>1</b>		
<b>(iii)</b>	Pump/push/move <u>blood</u> (round the body) Keep blood flowing/moving/circulating (Concept of movement + blood)	<b>1</b>	Carry blood Provide/supply Pumps blood around the heart	Reference to another organ's function eg lungs

Question	Acceptable answers	Marks	Unacceptable Answer	Negates
9 (a)	A – <u>food store</u> B – protection prevents damage	1 1	Food storage Food source	.growth
(b) (i)	 <p>Label Scale Plot</p> <p>Minimum of 2 points on scale</p>	1 1 1	Bar graph – lose plot mark only Wrong scale but plotted correctly to that scale, award plot mark but not scale mark Thick lines Wobbly lines daylight	
(ii)	Between day 4 and day 6	1		

Question	Acceptable answers	Marks	Unacceptable Answer	Negates																
10 (a) (i)	Water Dry/wet Dampness Moisture Humidity	1	Cotton wool																	
(ii)	80%	1																		
(iii)	Fewer/less/no seeds/a number less than 12 germinated Little/no growth	1	No effect Nothing would happen Not a lot would germinate 2 or any number on its own																	
(b)	Chitting/pre-germination	1																		
(c)	<table border="1"> <thead> <tr> <th><i>Definition</i></th> <th><i>True</i></th> <th><i>False</i></th> <th><i>Correction</i></th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>✓</td> <td>Encourage/ increase/ allow/ promote/ produce help</td> </tr> <tr> <td></td> <td>✓</td> <td></td> <td></td> </tr> <tr> <td></td> <td>✓</td> <td></td> <td></td> </tr> </tbody> </table>	<i>Definition</i>	<i>True</i>	<i>False</i>	<i>Correction</i>			✓	Encourage/ increase/ allow/ promote/ produce help		✓				✓			1 1 1		
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	✓																			
	✓																			

Question	Acceptable answers	Marks	Unacceptable Answer	Negates										
11 (a)	<table border="1"> <thead> <tr> <th></th> <th><i>Average root length (cm)</i></th> </tr> </thead> <tbody> <tr> <td>None/0/no power</td> <td>1.5</td> </tr> <tr> <td>0.1</td> <td>6.1</td> </tr> <tr> <td>0.3</td> <td>15.2</td> </tr> <tr> <td>0.8</td> <td>9.2</td> </tr> </tbody> </table> <p>Heading as above = 1 All data = 1</p>		<i>Average root length (cm)</i>	None/0/no power	1.5	0.1	6.1	0.3	15.2	0.8	9.2	2		
	<i>Average root length (cm)</i>													
None/0/no power	1.5													
0.1	6.1													
0.3	15.2													
0.8	9.2													
(b)	<p>To allow comparison of growth without the rooting powder As a control (experiment) To see if they grow as much as the ones with rooting powder (the response should include a comparison)</p>	1	To see the effectiveness of rooting power											
(c)	0.3%	1												
(d)	To make the results reliable/increase reliability/more representative	1	In case some didn't grow Make sure results are conclusive	Accurate/fair/get an average/valid										

[END OF MARKING INSTRUCTIONS]