

**2006 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  $\surd$  or  $x$  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.

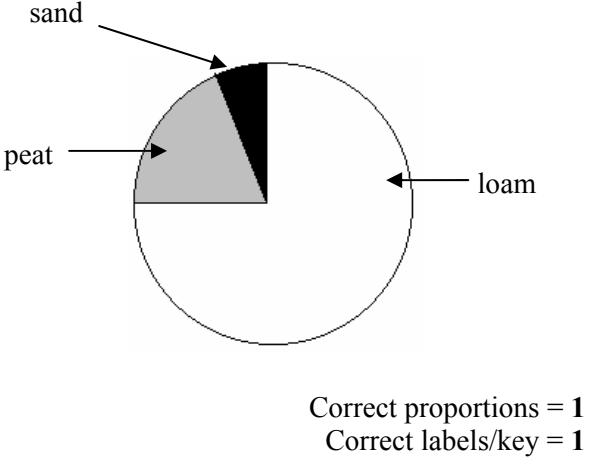
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Intermediate 1**

**Section A**

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

## Marking Instructions – Biology Intermediate 1 2006

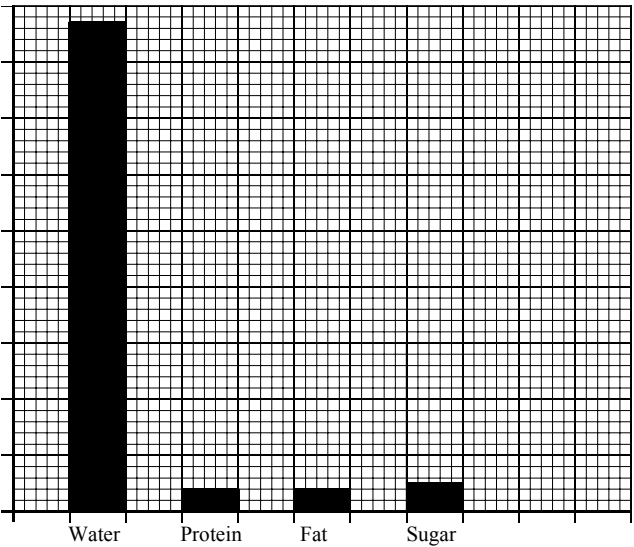
Question	Acceptable answers	Marks	Unacceptable Answer	Negates
1 (a) (i)	Flower – <i>Lobelia, Petunia, Salvia</i> (any 1) Vegetable – cabbage, cauliflower, lettuce (any 1)  1 flower + 1 vegetable (must come from the passage)	<b>1</b>	2 flowers OR 2 vegetables	
(ii)	(seedlings are) weak (looking)/shrivelled (up)/ collapsed/dead/ <u>root</u> (system) rotted away/dead  any 2 symptoms		Roots become weak/shrivelled/ collapse Dead flowers	
(iii)	Clean/sterilise trays/pots/greenhouse benches OR Don't use old compost/soil OR Use new compost/soil OR Add fungicide to water OR Prick out seedlings soon after germination OR Use good clean tap water for watering	<b>1</b>		
(iv)	(Seedlings) pricked out	<b>1</b>	Dispose of seedlings Pricked	

Question	Acceptable answers	Marks	Unacceptable Answer	Negates
<b>(b) (i)</b>	 <p>Correct proportions = 1 Correct labels/key = 1</p>	<b>2</b>	Percentage instead of labels Double lines on pie chart Missed centre dot Extra division (labelled or not) = 0 L, P, S	
<b>(ii)</b>	Grit/sand/perlite/stones/gravel/polystyrene balls	<b>1</b>	Holes	Acceptable answer and any wrong answer Eg grit and peat

Question	Acceptable answers	Marks	Unacceptable Answer	Negates
2 (a) (i)	15 cm <sup>3</sup>	1		
(ii)	<p data-bbox="629 919 949 983">Label = volume of water (added) (cm<sup>3</sup>)      1</p> <p data-bbox="629 1018 949 1046">Scale → 1</p> <p data-bbox="629 1054 949 1083">Minimum of 2 points</p> <p data-bbox="629 1091 949 1120">Plot → 1</p>	<p data-bbox="1144 276 1509 440">Scale starts at 1, lose scale and plot mark Wrong scale eg 1.6, 3.4, must have 0 to gain plot mark Bar graph = lose plot mark</p> <p data-bbox="1066 954 1088 983">1</p> <p data-bbox="1066 1023 1088 1051">1</p> <p data-bbox="1066 1091 1088 1120">1</p>		
(iii)	Reliable results/increase reliability/more reliable	1	More accurate/fairer/get on average	
(b)	Sown with (silver) sand/mixed with sand/pelleted/ (enclosed) in ball of clay	1	Sown with grit	Pelleted and/or chitted

Question	Acceptable answers	Marks	Unacceptable Answer	Negates
3 (a)	Tuber	1	Potato	
(b) (i)	Photosynthesis	1		
(ii)	Growth of leaves/to reproduce/converts to starch Growth/energy/produce flowers/stores it Make cell wall	1	Cell wall So plant gets food/feeds embryo Feeding plantlet	
(c)	Parent plant Runner Plantlet  All 3 correct = 1 0, 1, 2 correct = 0	1		
4 (a)	Cuttings/leaf cuttings/artificial propagation	1	Cutting Cutting out/of Vegetative propagation Propagation	
(b)	Faster/easier growth/grows better/prevents frost <u>damage</u> /encourage <u>root</u> growth	1	Germinates quicker Growth better/easier growth Controls temperature	Seedlings grow faster
(c)	Rooting powder/rooting compost/hormone powder /add fertiliser/phosphate/phosphorus/P Spacing out (to reduce competition)	1	Watering/plant food/add minerals /cut out competition	Water with potassium



Question	Acceptable answers	Marks	Unacceptable Answer	Negates
<p><b>5 (a)</b></p> <p>Mass per 100g (g)</p>	 <p style="text-align: center;">Content</p> <p style="text-align: right;">Label + scale = <b>1</b> Minimum 2 points Plot = <b>1</b></p>	<b>2</b>	<p>Bars not drawn above label, lose plot mark</p> <p>No top on bar Bar not above label Bar not correct width</p>	
<p><b>(b)</b></p>	<p>Destroy (disease causing) microbes/micro-organisms/makes it safer to drink/kill bacteria</p>	<b>1</b>	<p>Kill all bacteria/kill germs/get bacteria out/gives longer shelf life/safe to drink/get rid of bacteria/diseases</p>	
<p><b>(c)</b></p>	<p>Powdered/dried/condensed/evaporated milk UHT (treatment)/(making) yoghurt/keep in fridge/freezer/make fermented drink/pasteurization</p>	<b>1</b>	<p>Make cheese/butter Heat to 90°C Heat treat milk</p>	

Question	Acceptable answers	Marks	Unacceptable Answer	Negates
(d) (i)	10 %	1		
(ii)	1 : 6 sugar : fibre	1		

Question	Acceptable answers	Marks	Unacceptable Answer	Negates								
6 (a) (i)	40°C	1										
(ii)	10°C (or less) or 60°C (or more)	1										
(b)	Curds	1	Curdles Cheese	Curds and whey								
(c) (i)	Increase    Decrease    Decrease  3 correct = 2 2 correct = 1 0,1 correct = 0	2		2 ticks in 1 column								
(ii)	Food source for yeast/produce creamy alcoholic drink (brand name)/animal food/cattle cake	1	Treat it/make it into alcohol Add yeast									
7 (a)	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>Time (min)</td> <td>0</td> <td>10</td> <td><u>20</u></td> </tr> <tr> <td>Height of dough (mm)</td> <td><u>50</u></td> <td><u>52</u></td> <td>54</td> </tr> </table> All 3 correct = 1 0,1,2 correct = 0	Time (min)	0	10	<u>20</u>	Height of dough (mm)	<u>50</u>	<u>52</u>	54	1		
Time (min)	0	10	<u>20</u>									
Height of dough (mm)	<u>50</u>	<u>52</u>	54									
(b)	56mm (any value between 55mm and 57mm inclusive)	1										
(c)	Carbon dioxide/CO <sub>2</sub>	1										

Question	Acceptable answers	Marks	Unacceptable Answer	Negates
<b>8 (a)</b>	Physical Mental Social All 3 correct = <b>1</b> 0,1,2 correct = <b>0</b>	<b>1</b>		
<b>(b)</b>	Smoking/(drinking) alcohol/too much salt in diet/(taking) drugs/stress/eating too many fatty foods any other reasonable answer/being overweight/obese/poor/unhealthy diet	<b>1</b>	Drinking/high/low blood pressure/heart disease/eating fatty foods disease	
<b>9 (a)</b>	12 breaths per minute	<b>1</b>		
<b>(b)</b>	Vital capacity	<b>1</b>	Peak flow	

Question	Acceptable answers	Marks	Unacceptable Answer	Negates																	
10 (a) (i)	Body fat sensor/calculator/digital thermometer/liquid crystal thermometer/pulsometer/heart rate monitor Breathalyser/thermistor Any 1	1	Pedometer Thermocouple																		
(ii)	Cheaper/works without batteries/low maintenance	1	easier to use/won't break down/more accurate/more reliable/less likely to break down																		
(b)	<table border="1"> <thead> <tr> <th rowspan="2">Medical Condition</th> <th colspan="2">Cause</th> </tr> <tr> <th><u>High Blood Pressure</u></th> <th><u>Low Blood Pressure</u></th> </tr> </thead> <tbody> <tr> <td>Angina</td> <td>✓</td> <td></td> </tr> <tr> <td>Stroke</td> <td>✓</td> <td></td> </tr> <tr> <td>Fainting</td> <td></td> <td>✓</td> </tr> <tr> <td>Heart attack</td> <td>✓</td> <td></td> </tr> </tbody> </table> <p>4 correct = 2 3, 2 correct = 1 0,1 correct = 0</p>	Medical Condition	Cause		<u>High Blood Pressure</u>	<u>Low Blood Pressure</u>	Angina	✓		Stroke	✓		Fainting		✓	Heart attack	✓		2		2 ticks in 1 row
Medical Condition	Cause																				
	<u>High Blood Pressure</u>	<u>Low Blood Pressure</u>																			
Angina	✓																				
Stroke	✓																				
Fainting		✓																			
Heart attack	✓																				
(c)	Size/age/sex/fitness/exercise/excitement/smoking/drugs/medicine	1	Blood pressure/health of heart																		
(d)	Oxygen/carbon dioxide/sugar/nutrients/waste (products)/water/carbon monoxide/hormones (any other correct answer)/dissolved food/cholesterol	1	Blood cells/haemoglobin/plasma Food																		

<b>Question</b>	<b>Acceptable answers</b>	<b>Marks</b>	<b>Unacceptable Answer</b>	<b>Negates</b>
<b>11 (a) (i)</b>	Obese	<b>1</b>		Overfat and obese
<b>(ii)</b>	21% and 33%	<b>1</b>		
<b>(iii)</b>	Any reasonable conclusion drawn from information in the chart	<b>1</b>	Restatement of the results A lot more obese men than women	
<b>(b)</b>	Heart disease/kidney failure/arthritis/diabetes/heart attack/high blood pressure/stroke (any other correct answer)  Any 1	<b>1</b>		

[END OF MARKING INSTRUCTIONS]