



2008 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 CO₂, H₂O
 - 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 ± 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. | B | 11. | A | 21. | B |
| 2. | A | 12. | B | 22. | A |
| 3. | A | 13. | C | 23. | D |
| 4. | D | 14. | B | 24. | D |
| 5. | C | 15. | C | 25. | C |
| 6. | A | 16. | D | | |
| 7. | D | 17. | C | | |
| 8. | B | 18. | C | | |
| 9. | C | 19. | A | | |
| 10. | C | 20. | D | | |

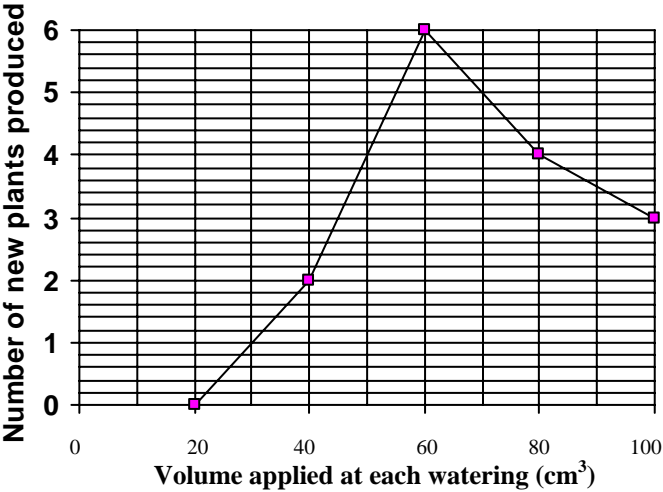
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Question	Acceptable answers	Marks	Unacceptable Answer	Negates
1 (a) (i)	<u>Passive smoking</u>	1	Environmental tobacco smoke	
(ii)	Headaches/coughs/dizziness/sickness/irritation of nose, throat and eyes/sore head, eyes, throat Smell of smoke on hair/clothes } = 1 reason Smell clings to hair/clothes } any 2	1		
(iii)	15(%)	1		
(iv)	Unfiltered/contains more/higher amount/ concentrations of <u>toxic chemicals</u> /more toxic	1		
(b)	Carbon monoxide/nicotine or any correctly named chemical/tar/arsenic	1	Rat poison/pesticides Carbon dioxide	Additional wrong answer

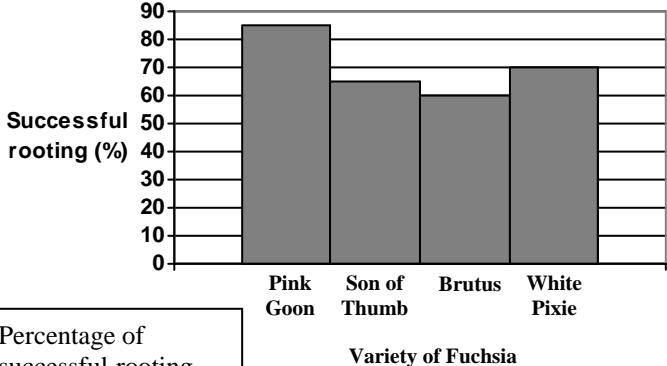
Question	Acceptable answers	Marks	Unacceptable Answer	Negates
2 (a) (i)	510 (litres per minute)	1		
(ii)	Size, fitness, sex, asthma/smoking/if you smoke/ don't smoke Male or female/gender/lung disease/infection/cancer/ health of lungs	1	Exercise How active you are Weight Health Time of day	An additional wrong answer
(b)	Maximum, out of	1		
(c)	Asthma/emphysema	1	Lung disease/cancer Breathing difficulties	

Question	Acceptable answers	Marks	Unacceptable Answer	Negates
3 (a) (i)	22 (beats per 20 seconds)	1		Wrong units
(ii)	66 (beats per minute)/three times answer in (a) (i)	1		
(b)	Increase/make it faster/quicker/higher/rise/go up	1	Reference to heart rate	
(c)	<u>Recovery</u> time/period	1	Recovery rate	Rate

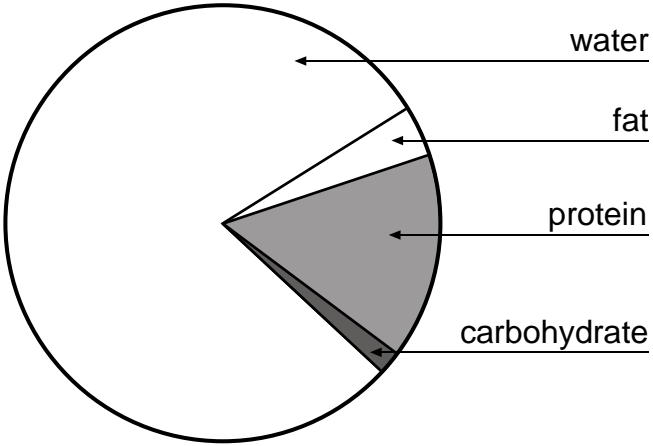
Question	Acceptable answers	Marks	Unacceptable Answer	Negates																							
<p>4 (a) (i)</p>	<table border="1" data-bbox="371 363 1052 544"> <thead> <tr> <th><i>Student</i></th> <th><i>Daily energy requirement (kJ)</i></th> </tr> </thead> <tbody> <tr> <td></td> <td>5200</td> </tr> <tr> <td>Michael</td> <td></td> </tr> <tr> <td></td> <td>3800</td> </tr> <tr> <td></td> <td>4200</td> </tr> </tbody> </table> <p data-bbox="837 580 1111 643">All 4 correct = 2 marks 2 or 3 correct = 1 mark</p> <p data-bbox="371 715 987 810">(ii) (Michael) – requires and uses more energy requires/needs more energy (every day) needs more kJ (or converse)</p>	<i>Student</i>	<i>Daily energy requirement (kJ)</i>		5200	Michael			3800		4200	<p data-bbox="1173 368 1196 395">2</p> <p data-bbox="1173 715 1196 742">1</p>	<p data-bbox="1263 715 1720 847">Michael has better energy requirement Uses/has more/higher energy Higher intake of energy Higher metabolism</p>	<p data-bbox="1821 715 2013 777">Use of incorrect values</p>													
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Question	Acceptable answers	Marks	Unacceptable Answer	Negates
5 (a)	 <p data-bbox="376 933 739 965">Scale 2, 4, 6, 8 is acceptable</p> <p data-bbox="985 933 1097 1029">Label = 1 Scale = 1 Plot = 1</p>	3	<p data-bbox="1254 343 1792 478">Use of a scale of 10, 20, 30 – lose scale mark Bar graph – lose plot mark Labels – ‘number of new plants’ or ‘number of plants grown’ – lose label mark</p> <p data-bbox="1254 510 1523 646">Double lines Overshoot 100 Anything to left of 20 Plot a point at 0, 0</p>	
(b)	60(cm ³)	1		
(c)	Repeat (experiment)/investigation/more plants used (at each volume)/twice more/three times more	1	Take more samples Repeat at 60cm ³	At one specific volume

Question	Acceptable answers	Marks	Unacceptable Answer	Negates
6 (a) (i)	(Tube) A	1		
(ii)	<u>Temperature/temp</u> or reference to temperature in a statement	1	°C One at 20°C and one at 2°C Heat/same temperature Warmth	Another variable
(b)	(Label) – moist cotton wool at 20 ⁰ C	1	Moist soil	Any other wrong addition
(c)	<u>Food store</u> /endosperm	1	Food storage/food source	
(d)	Dormancy/dormant	1	Dormination Hibernation	

Question	Acceptable answers	Marks	Unacceptable Answer	Negates
7 (a)	 <p>Percentage of successful rooting</p> <p>Height of bar determines mark Don't penalise width/ spaces between bars</p> <p>Label = 1 Plot = 1</p>	2	No line on top of bar No line on sides of bar	
(b)	Brutus	1		
(c)	<p>(Dip in) <u>rooting powder/compost/hormone/gel</u> Cover with poly bag/put in propagator/increase humidity Remove lower leaves/increase temperature Add phosphate/phosphorus/P Supply heat to roots</p>	1	Temperature Cutting compost Water Put in greenhouse Adding nutrients Add fertilisers	

Question	Acceptable answers	Marks	Unacceptable Answer	Negates
8 (a)	Stop insects/rabbits getting at them Warmer/protected from damage/frost/pests/wind/birds Makes plants grow better/faster/ripen quicker/bigger Increases humidity Germination speeded up	1	Control the conditions Warm Keep same/right temperature Keep humidity normal Keep right/suitable temperature Keep heat in Protect from strong sunlight	
(b)	Aphids – insecticide/pesticides/soapy water/detergent Crushing/ladybirds/biological control Grey mould – fungicide/destroying or burning infected plants/good ventilation/cutting away infected areas	1 1	Picking off, bug spray, anti-insecticide Pesticides/herbicide/spray disinfectant Antifungal spray	
(c)	Photosynthesis	1		

Question	Acceptable answers	Marks	Unacceptable Answer	Negates
<p>9 (a) (i)</p> <p>(ii)</p>	<p>1:12</p>  <p>All correct = 1 mark</p>	<p>1</p> <p>1</p>		
(b) (i)	Rennet	1		
(ii)	Calves (stomach)/gm bacteria Calf rennet/baby cow	1	Cow's stomach Fungus	
(c) (i)	Yeast	1	Fungus Bacteria	
(ii)	Creamy alcoholic drink/animal feed/named brand of creamy alcoholic drink Cattle feed	1	Fermented alcoholic drinks	Kefir

Question	Acceptable answers	Marks	Unacceptable Answer	Negates
(c) (i)	Bacteria	1		
(ii)	Rash/eczema/ <u>skin</u> irritation/inflammation/dermatitis/psoriasis/asthma	1	Hay fever/itchiness Inflammation	
(iii)	(Cover with a harmless) coating/coat (in wax)/enclose/trap/encase Pre-test for allergies/test on animals	1	Cover them Coat the detergent Reduce the enzyme in detergent	Jelly/rubber/plastic coating Gel, clay balls

[END OF MARKING INSTRUCTIONS]