

GCSE SCIENCE COURSEWORK (4460)

Commentaries on Moderation 2009

Biology B2.2 – Photosynthesis (Set 2)

N.B. These notes show the decisions that a moderator would probably reach.

| Section 1. | | |
|-------------------|--|-------------------------------|
| Q. No. | Comment | Mark awarded |
| 1 | Dependent variable: '... how the number of bubbles would change...' Allow Independent variable: '... as there was less light' implies changing light intensity. Allow. | 1 1 |
| 2(a) | Correct | 1 |
| 2(b)(i) | Correct | 1 |
| 2(b)(ii) | Has suggested extending the range, but the reason is rather vague. Allow | 1 |
| 3 | Correct | 1 |
| 4 | Accept 'time to get used to the light' as the idea of stabilisation | 1 |
| 5 | There is some truth in this answer, and it is worth a mark | 1 |
| 6(a) | It can be difficult to mark this question, especially if the candidate obtains good results. This candidate did get fairly good results and looking at the graph it is difficult to tell which result should have been repeated, especially as the candidate has not drawn a best-fit line. It would appear that it might have been better to have repeated one of the larger distances. Therefore, award zero | 0 |
| 6(b) | The candidate probably thinks that the value is too high, being led astray by the false extrapolation back to zero distance. However, if the candidate really had started too early, it is more likely that the number of bubbles would be too low and not too high. | 0 |
| 7 | Not very good English, but the candidate has earned both marks | 2 |
| 8 table | Table incomplete, as the candidate should have added "per minute" after 'amount of bubbles coming off the Elodea' | 1 |

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| 8 graph | A line graph is the correct choice here | |
| | • x axis is correctly labelled | 1 |
| | • y axis is correctly labelled | 1 |
| | • values at 5cm has been incorrectly plotted, but 1 plotting error is allowed | 1 |
| | • dot-to-dot line - it should be a line of best fit | 0 |
| | Total for Section 1 | 14 |

| Section 2 | | |
|------------------|--|---------------------|
| Q. No. | Comment | Mark awarded |
| 9 | Again, poor grammar. Gets the first mark on the Mark Guidance, but not the second. | 1 |
| 10 | Correct | 1 |
| 11 | Insufficient – this answer is not much better than ‘a fair test’ | 0 |
| 12(a) | Candidate has the correct idea | 1 |
| 12(b) | ‘Saving power’ is too vague to deserve a mark | 0 |
| 13 | Does not have the idea that the volume of the solution is a control variable | 0 |
| 14 | Candidate has the idea of comparison | 1 |
| 15 | Correct | 1 |
| 16 | A suitable answer that matches the third bullet point on the Mark Guidance | 1 |
| 17 | Answer matches the ‘easier to understand’ statement on the Mark Guidance | 1 |
| 18(a) | Correct choice of fertiliser, and suitable explanation | 2 |
| 18(b) | Candidate's answer is all rather vague, and fails to quote any evidence from the bar chart | 0 |
| | QWC - no evidence of any technical terms being used correctly Use the Q× to signify this. | 0 |
| | Total for Section 2 | 9 |

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| Total for paper | 23/34 |
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N.B. These notes show the decisions that a moderator would probably reach.

| Section 1. | | |
|----------------------------|---|----------------------|
| Q. No. | Comment | Mark awarded |
| 1 | Not very well expressed, although both variables are mentioned. If the teacher had decided to award one mark only, the moderator would probably agree with this. | 1 |
| 2(a) | Correct | 1 |
| 2(b) | Too vague to be worthy of a mark | 0 |
| 3 | The candidate was altering the number of drops of egg yolk. The number of drops is actually a discrete variable, therefore no mark | 0 |
| 4 | The candidate has suggested that the timing of the separation is the largest source of error, and this is probably true. However, the reason given is not correct, and therefore the whole answer is only worth one mark. | 1 |
| 5 | Again, not very well expressed, but the candidate has the right idea. It would be too severe to award zero. If the teacher decided to award the mark with a D, the moderator would probably agree. | 1 |
| 6 | No, we do not allow a mark for 'to see if it works' or 'to practice' | 0 |
| 7 | The candidate has stated that the number of drops does make a difference (1 mark) and has said that 3 drops takes longer than 0 drops (2nd mark) | 2 |
| 8 table | The headings in the table are correct, and the units for time are present. Note that the teacher has subsequently given the candidate a prepared blank table to complete. | 2 |
| 8 graph | 'number of drops' is actually a discrete variable, and therefore we could allow the candidate to plot either a bar chart or a line graph. <ul style="list-style-type: none"> • x axis is correctly labelled • y axis is correctly labelled, with units • values are plotted correctly • the bars are labelled | 1 1 1 1 |
| Total for Section 1 | | 12 |

| Section 2 | | |
|----------------------------|--|---------------------|
| Q. No. | Comment | Mark awarded |
| 9 | Correct | 1 |
| 10 | The candidate has failed to round correctly, and therefore only gets one mark | 1 |
| 11 | Incorrect result chosen, and wrong reason | 0 |
| 12 | Correct | 1 |
| 13 | Correct | 1 |
| 14(a) | Poor spelling. If the teacher accepted that the candidate was trying to spell "burette", the moderator would agree. However, annotation to this effect would help the moderator. | 1 |
| 14(b) | The candidate does not appreciate the meaning of the term 'precision' | 0 |
| 15(a) | Adding more emulsion is not the same as adding more emulsifier, therefore no mark | 0 |
| 15(b) | Incorrect | 0 |
| 16 | The candidate has stated that 'it's not very healthy because there's a lot of additives'. Again, not very well expressed, but this statement matches the last bullet point on the Mark Guidance QWC: 'healthy' and 'additives' qualify for this mark. Use the Q ✓ to signify this. | 1 1 |
| 17(a) | The candidate seems confused between suppliers and customers. No mark awarded. | 0 |
| 17(b) | 'something different' is too vague | 0 |
| Total for Section 2 | | 7 |

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| Total for paper | 19/34 |
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GCSE SCIENCE COURSEWORK (4460)
Commentaries on Moderation 2009
Physics P2.1 – Resistance (Set 2)

N.B. These notes show the decisions that a moderator would probably reach.

| Section 1. | | |
|----------------------------|--|---------------------|
| Q. No. | Comment | Mark awarded |
| 1 | Both variables correctly stated | 2 |
| 2(a) | The candidate did not <i>measure</i> the resistance, it was calculated, and therefore should not be awarded this mark | 0 |
| 2(b) | Not wishing to penalise the candidate twice for the same mistake, we should allow the mark here | 1 |
| 2(c) | Correct | 1 |
| 3 | Correct | 1 |
| 4(a) | Equivalent to keeping the p.d. constant; allow ✓ D | 1(D) |
| 4(b) | Not particularly well put. Mark as ✗D | 0(D) |
| 5 | Just worth the mark | 1 |
| 6 | An acceptable answer | 1 |
| 7 | Worth both marks | 2 |
| 8 table | Almost completely correct, but the quantity measured in volts should have been called potential difference or voltage, therefore only 1mark | 1 |
| 8 graph | A line graph is the correct choice here <ul style="list-style-type: none"> • x axis is correctly labelled • y axis is correctly labelled • The lowest and highest values have been plotted incorrectly. However, 2 incorrect values out of 10 just falls within the tolerance limits that we allow. • the line is not in the best position for a best-fit line | 1 1 1 0 |
| Total for Section 1 | | 14 |

| Section 2 | | |
|------------------|--|---------------------|
| Q. No. | Comment | Mark awarded |
| 9 | The candidate has correctly noticed that the units are missing | 1 |
| 10(a) | Idea of improving reliability | 1 |
| 10(b) | Three is insufficient | 0 |
| 10(c) | Correct | 1 |
| 10(d)(i) | Not very well expressed, but just worth both marks | 2 |
| 10(d)(ii) | Number and values are suitable | 1 |
| | Explanation is just worth the mark | 1 |
| 11(a) | Has not quite got the idea of improved reliability, although the last sentence comes close | 0 |
| | Has the idea of avoiding bias | 1 |
| | QWC: Biased and accurate qualify as technical terms. | 1 |
| | Use the Q✓ to signify this. | |
| 11(b)(i) | Answer not worth a mark | 0 |
| 11(b)(ii) | Worth at least one mark | 1 |
| 11(b)(iii) | Correct answer | 2 |
| | Total for Section 2 | 12 |

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| Total for paper | 26/34 |
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