



**General Certificate of Secondary Education
November 2012**

Science B

SCB1FP

(Specification 4500)

Unit 1: My World

Report on the Examination

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GCSE Science B

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General Comments

Illegible writing continues to be a concern, as is a lack of working shown in calculations. There is some evidence of 'text speak' creeping in to responses. Students should appreciate that most examiners are unfamiliar with this language. Numerals in responses were often poorly formed and changes to numerals must be clear and not overwritten.

Question 1 (Low demand)

- (a) A range of incorrect responses were seen here, though most students were able to gain at least one mark. Apart from responses that demonstrated a complete lack of knowledge, linking molecule with atoms mixed together was the most common incorrect response.
- (b) About half of the students were able to gain all four marks here. 'Nucleus' and 'neutron' were commonly confused.
- (c) Fewer than half of the students could answer this question correctly. Some gained one mark out of all three parts by writing the same number for each part. Adding 11 and 23 to obtain the mass number was a common error for part ii.

Question 2 (Low demand)

- (a) Surprisingly, only 55% of students could answer this question correctly.
- (b) Most students (82%) were able to make an attempt at this question and gain at least one mark. The most common error was in naming carbon dioxide as the second product with lead. Oxygen was the most common incorrect response, but iron was also seen.
- (c) Students were expected to apply knowledge and common sense to their responses. The basic process of dissolving, filtering and evaporating is required knowledge and students should be able to see that filtering does not happen below ground, which was a common misconception or random error, or that evaporation could possibly be the second stage.

Question 3 (Low demand)

- (a) Surprisingly, 10% of candidates could not attempt this question. Of those students who did make an attempt the majority could name two types. Sound was a common incorrect response.
- (b) Very few students could give two correct responses. The most common correct response was 'no clouds to get in the way'. 'No pollution' was considered insufficient. A very common incorrect response was that the telescope would be nearer to what it was looking at.
- (c) Most students were able to answer this question correctly.

Question 4 (Low demand)

- (a) (i) Over two thirds of candidates were unable to answer either part of this question correctly. The mark most commonly gained was for 'light' for the first part. The most common incorrect answers were for 'oxygen' and 'carbon dioxide' in either part.
- (a) (ii) It was surprising that less than half of students could answer this question.
- (b) Only 30% of students gained this mark, many failing to give a full answer. It was common for students to give a list of answers which meant that the mark could not be awarded.
- (c) Less than 40% of students were able to complete the pyramid correctly. The most common error was to put fleas in the wrong place.
- (d) (i) 59% of students gained both marks here. A common error was incorrect rounding to 125 with no working shown which could have gained one mark.
- (d) (ii) Only 14% of students gained this mark. Most of the incorrect responses involved the fate of energy that the hedgehog **had** including movement and respiration. 'Excretion' is not equivalent to 'elimination' or 'faeces' or 'not digested'. Baby language and slang are unacceptable.
- (e) Most students were able to gain at least one mark for this question.

Question 5 (Low demand)

- (a) Most students were able to gain at least one mark for this question.
- (b) Again, most students were able to gain at least one mark with the majority gaining both marks.
- (c) This question proved more difficult with only 19% of students gaining the mark. The most common incorrect answer was 'other river dolphins'.

Question 6 (Low demand)

- (a) 60% of students answered this question correctly. Plant mining was the most common incorrect response.
- (b) Very few students could suggest any reasonable reasons here. 'Environmentally friendly' is insufficient without qualification, as is cheap/cheaper.
- (c) (i) Most students were able to gain at least one mark here with 45% gaining both marks.
- (c) (ii) It was surprising that a significant number of students who gave the correct plant were unable to explain their choice. Two thirds of students gave E, failing to realise that it is easier to collect shoots than roots.

Question 7 (Standard demand)

- (a) 25% of students were unable to attempt this question while a similar number gained the mark. It was evident that some candidates had not encountered this term, for whatever reason. A variety of random responses were seen including tropism, argon and photosynthesis
- (b) Again, 25% of students were unable to attempt this question with fewer of the rest gaining the mark. The most common incorrect response was 'photosynthesis'.
- (c) Whilst a good number of students recognised the need for a clear, organised response, many poorly organised responses would suggest that candidates need more opportunity to develop their skills in responding to QWC questions. The majority of students gained 2 or 3 marks. A significant number of students wasted time and space by repeating the stem. There was generally a lack of precise detail in responses. 'Change the colour of the light used', but no suggestion how this could be achieved. 'See if response is the same or different', without saying what response the student would be looking for. Many students failed to appreciate that the question was about phototropism and not unusually gravitropism was mentioned. Many candidates gave *their* expected outcome rather than what they would need to look for in the growth of the seedlings to answer the question posed, or answered in terms of growth or no growth. A stopwatch used to measure time is not appropriate nor is checking every few minutes. 'Observing where the auxins go' is not a reasonable suggestion.

Question 8 (Standard demand)

- (a) Nearly 80% of students gained this mark.
- (b) (i) This question was answered successfully by 60% of students provided that poor spelling was ignored. 'Tectonic' plates was accepted, but not 'techno' plates.
- (b) (ii) 64% of the students were unable to gain even one mark for this question. The majority of students failed to give the origin of the heat causing the convection currents in the mantle, or even mentioned 'mantle' or 'convection currents'. 'Climate change', 'global warming', and 'ocean currents' were all seen.
- (b) (iii) In order to gain full marks the students had to provide a complete explanation. A significant number failed to suggest a date as requested and so failed to gain a relatively straightforward mark. Mention of an earthquake was often the only mark gained.

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the [Results statistics](#) page of the AQA Website.

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