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Science B SCB2HP

(Specification 4500)

Unit 2: My home

Report on the Examination

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GCSE Science B

SCB2HP

General Comments

Most questions on this paper were attempted, though some with a lot more success than others. The majority of scripts were legible and had answers written where expected. Questions based on higher level calculations and symbol equations were generally answered poorly by most candidates on this paper. Many candidates also seemed unable to draw a comparison from data in a table or graph or to analyse graphs accurately. It is important to encourage candidates at higher level to learn the set formulae that they are expected to know and to use this when balancing symbol equations.

Question 1 (Standard demand)

(a) (i) This question was not answered very well by candidates, with few scoring the full two marks. Main areas where pupils lost marks were in the comparison of the cost (said it was cheap, not cheaper). Also, many candidates were writing about the conductivity of steel which is irrelevant for this question.

(a) (ii) Candidates again struggled to come up with a comparison of the two metals. Some candidates answered this question in terms of the aluminium being malleable, ductile, etc. which could also have been applied to the copper.

(b) (i) Candidates scored poorly on this question with many believing that the hangers had to conduct electricity or that the ceramic material is malleable or flexible.

(b) (ii) Some candidates knew that ceramics are brittle though many still could not apply this to the question. The electricity pylon question seemed to confuse candidates and get them talking in terms of conducting electricity.

(c) Few candidates scored all three marks for this question. Not much evidence to show that the pupils counted the 11 discs. There were two candidates that tried to calculate the number of discs by finding the ratio of discs to voltage. This worked well except when the figures were rounded leaving 0.9 of a disc.

(d) Most candidates knew the name of the part and were even able to add that it was a step down transformer. Incorrect answers included electricity generator and electricity cables.

Question 2 (Standard demand)

Candidates demonstrated a whole range of ability in this question with some detailed accurate and well formulated answers present. Other candidates struggled to formulate their ideas and many misconceptions were seen, in particular the blood vessels moving towards the surface of the skin when it is hot and moving back when it is colder. The most common response here was that when you exercise you get hot and then sweat. Very few candidates then went on to explain how sweating regulates your body temperature or even that the sweat then evaporates off your skin. Answers in the higher level paper did not show a significant improvement in accuracy or detail to the answers seen on the foundation tier.

Question 3 (a, b Standard demand) (c High demand)

(a) Only one candidate scored 2 marks for this question. Generally if candidates scored a mark here it was for hydrochloric acid not enzymes. Candidates that failed to score tended to put acid which was too vague to be in the MS.

(b) There were very few correct responses seen. The correct answers seen were ammonia and bicarbonate. The most common incorrect response was antacid then alkali.

(c) This question produced poor responses from candidates. Many candidates did not read or understand the term symbol equation as most wrote word equations thus not scoring any marks. Higher level candidates should be able to recall the chemical formulae for common compounds as shown in the specification and be able to use this to produce a balanced symbol equation.

Question 4 (a Standard demand) (b, c High demand)

(a) Candidates generally knew homeostasis though not all were able to spell it correctly. Other answers seen included thermal disology (sic), the central nervous system and thermal disilation (sic).

(b) Most candidates could give an example of negative feedback but could not describe what negative feedback is. Generally candidates answered the question in terms of the body keeping the internal conditions constant, not responding to reverse the changes detected in the system.

(c) A few good responses seen however candidates generally struggled with how the blood sugar level is controlled. Some responses ignore the question completely and discussed what diabetes is and the two types. Spelling was a major concern here as many candidates were not able to show that they knew the difference between glucagon and glycogen.

Question 5 (ai, b Standard demand) (aii, aiii High demand)

(a) (i) Very few candidates managed to complete the calculation correctly. Candidates either scored both marks or zero for this question. The most common error candidates made was to divide 40 by 35 and use this answer in additional calculations.

(a) (ii) No candidate scored full marks on this question with most not scoring anything. Candidates failed to use the information in the stem telling them that the energy in one litre of petrol was 35MJ and that only 40% of this was transferred effectively to the car. Most candidates also struggled on how to calculate the efficiency even though this was on the equation sheet.

(a) (iii) No candidate scored all three marks on this question. A significant number of candidates wrote down the word equation instead of the symbol equation asked for. Only one candidate managed to balance the equation correctly. A number of candidates also do not know how to use subscript when writing chemical equations with H20 and CO2 being common incorrect answers.

(b) (i) As with the foundation tier candidates, higher tier candidates also failed to find a pattern in the graph. Mpg was confused with fuel used. Most candidates stated that the mpg increases with speed, which is incorrect from the graph. Few responses took it further explaining how it only increased to a certain level.

(b) (ii) This was answered a lot better than 5bi. Most responses showed some idea that the fuel consumption was greater at higher speeds. Quite a few responses also looked at the environmental effects. There was no evidence of the third marking point about accidents being more severe at higher speed observed with most responses along the line of crashes were more likely to happen.

Question 6 (a, c High demand) (b Standard demand)

(a) Answers were a bit confused for this question. A few responses were in line with the mark scheme but others were trying to argue for choosing groups that had the same height, even though this was the variable being considered. Not one mention of using a larger group size.

(b) Height was the most common answer here but few responses looked at how the height of a person is dependent on food. Haircuts and bruises were some of the incorrect answers given for this part of the question.

(c) (i) Answered extremely well by all candidates. Very few incorrect responses – though one candidate used different letters (A and a) to those used in the question.

(c) (ii) Most responses here were correct though the occasional ½ or tt response was seen.

(c) (iii) This question was not answered well in the exam. Most candidates did not get across the idea of randomness or chance when passing on the genes. Most answers were looking in terms of dominant and recessive genes.

Question 7 (High demand)

(a) Candidates struggled to get all three marks here. A significant number were using types of electromagnetic wave not even listed for use in the question and others just did not know the correct order.

(b) (i) This question was not answered correctly by any candidate. A simple definition was required but was missing from all answers seen.

(b) (ii) Candidates grasp of the link between wavelength, frequency and energy was limited. Some candidates were trying to link in pitch but neglected to mention the wavelength or energy. Along with question 7(b)(i) if candidates were familiar with the specification this question should have produced a much better response.

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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