Examiner's Report

Principal Examiner Feedback

October 2021

Pearson Edexcel International Lower Secondary Curriculum In Science (LSC11) Paper 01 Year 9 Achievemnt Test

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October 2021
Publications Code LSC11_01_2110_ER

General comments

The paper gave candidates of all abilities the opportunity to demonstrate their knowledge and understanding of science at this level. The majority of candidates seemed to be well prepared and could attempt the majority of questions, which was good evidence of the overall accessibility of the paper. It was pleasing to see most candidates took good care to present their answers clearly. There were no reports from examiners of evidence of candidates being short of time to complete the paper.

The paper produced a wide spread of marks indicating that the paper successfully discriminated between students of varying abilities. The groups of multiple-choice questions were designed to become more difficult as the paper progressed. AS is often the case Section B, which contained free response questions and is designed to test practical and experimental skills, proved more difficult to most students than many questions in Section A. This was especially so for weaker candidates.

Comments on individual questions

The paper was marked on-line. This means that multiple choice questions were marked by computer, not by the same examiner as marked the rest of the paper, so it is not been possible to provide comments on the range of responses given by candidates to multiple choice questions.

Section A

Question 6

Generally, candidates were able to score well on this question.

Question 7

This question was answered well by most candidates

Question 8

Generally, part a was answered correctly but part b less so. In part b, a large number of candidates appeared unfamiliar with the link to energy with many referring to the idea of an organism being “eaten by” another which did not gain credit.

Question 9

Generally, candidates were able to score well on this question.

Question 10

(a) Many correct answers were seen.

(b) Answered a bit weakly than part (a) but still many correct answers were seen.

Question 11

Most common errors were missing that there were 3 cells in series producing a voltage of 4.5 V and in rearranging the equation incorrectly.

Question 12

Some excellent responses were seen. However, some candidates did not answer the question correctly by failing to comment on the effect of how the waves would sound different, instead they tended to focus on differences in amplitude, wavelength, and frequency. There was some loss of marks due to the use of imprecise language and/or not a clear comparison.

Question 18

Many candidates scored both marks on this item. Many wrong answers mentioned parts of cells common to both plants and animals, eg cell membrane, mitochondria, cytoplasm.

Question 19

Part (a) was usually answered correctly but some vague answers about it meaning eco-friendly or good for the environment, or that it can be reused or recycled were seen.

(b)(i) Lots of good answers. A lot of candidates mentioned about harming animals when plastic gets into their habitats. Some answers were too vague to gain the mark.

(b)(ii) Lots of good responses. The idea of “reduce, reuse, recycle” came up a lot.

Question 20

Candidates found it harder to score 2 marks here. More detail was often needed about why more blood is needed, often they would include the idea that people ‘need more oxygen’ or ‘need more energy’ but less common to link ideas together to provide a coherent explanation.

Question 21(b)

Again, 2-mark responses were not common. Lots gained the mark identifying upthrust being smaller but didn't go on to talk about resultant/unbalanced forces. Lots mentioned surface area or volume being smaller but didn't go on to talk about the result of that in terms of the forces on the object.

Question 22

Most candidates were familiar with gold as an element but fewer could identify rubber as a polymer.

Question 23

(a) It was disappointing to see many candidates struggle with this simple conversion.

(b) Again, rearranging the equation was a barrier to many.

Question 29

(a) The cloze nature of this question appeared to make it more accessible, and many correct responses were seen.

(b) Some candidates lost marks because they provided unfocussed responses which just talked generally about desert conditions.

Question 31

Good usage of the term "streamlined". Some candidates were a little too vague when talking about the forces involved and tended to use phrases like "it can cut through the air better" rather than making a link to the reduction of air resistance.

Question 32

(a) Generally, well answered. Some thought that the disease might affect the rabbits too.

(b) Candidates found this more difficult than part (a) A number had obviously not noticed that the number of foxes was starting to increase again.

Question 33

Often well done although plenty of examples of candidates mixing up exothermic and endothermic were seen.

Some candidates did not recognise the link with energy and the term “therm” meaning that many candidates chose acid/base examples for answers when “therm” was in each of the types of reaction.

Question 34

As might be expected converting the time correctly and rearranging were the main errors here. A number of candidates converted the time into minutes and so gave the final answer as 1. Some used 4.3 instead of 4.5.

Section B

This section contained questions which were mainly practically based. Candidate responses in the section were often not as good as those in the first section.

Question 36

(b) Generally, this question was answered well. Most were able to plot the result for 100N accurately. A significant number did join “dot to dot” and include the anomalous point in their line of best fit. Some were unable to identify the anomaly.

(c) In (c) the preferred answer to increase reliability is to repeat and average. Most candidates stated the need to take repeat readings but failed to

mention the need to take an average or comparison of the repeated readings. This was credited in this series but in future series we would like to see repeat and average.

(d) (d)(i) Generally answered well. Some vague answers were seen, and some misunderstood the question, but many candidates made a link between weight and force and were able to convey the right idea. Some lost marks by the statement not being comparative enough.

(d)(ii) This was not well answered. Many candidates ignored or failed to correctly read the question. Candidates needed to describe how the graph would change. Many described what was occurring in physical terms showing that they understood the physics but not the way the change would affect the graph.

Question 37

(a) Often fully correct and most candidates managed at least 1 mark.

(b) (i) It was disappointing that some candidates could not suggest use of a measuring cylinder. While measuring cylinder was frequently seen, all too often it was described as a measuring beaker, cup or jug none of which was accepted. Occasional volumetric apparatus was seen. There were also cases, particularly in this item, where candidates listed two answers or tried to give alternatives, one of which was correct and one incorrect which scores zero. Candidates need to recognise that they should give just one answer. If they give two and both are correct, they have gained nothing. If only one is correct, then they will score zero.
(ii) A large number of candidates said gloves when the use of goggles is much more appropriate.

The reason mark was harder for candidates to gain, a lot talked about the dilute acid being corrosive or burning. The use of the terms harmful or irritant was rarely seen.

(c) (i) Candidates mostly did not score on this item, many because they referred just to temperature and did not include the required reference to an increase or similar idea.

(ii) Amount/size of metal was often seen here. A lot of candidates also said volume of acid. Concentration was seen less often. A number stated pieces of equipment should be kept the same eg beaker, thermometer.

(iii) Candidates found this difficult. Often, they would repeat the experiment described in the question, rather than identifying a different variable that could be tested.

Question 38

Some candidates found it difficult analysing the information given in this question.

(a) Most candidates found this difficult, with many failing to score on this item, giving an answer <= 100. Many failing to read the label on the y axis of the graph. A few candidates gave their answer as 7500.

(b) A good number of candidates scored 2 marks here by recognising that either B killed more bacteria or A killed a higher %. Fewer recognised that the data was more complicated, and it could be argued both ways. Some just talked about one of the liquids and didn't compare them.

Summary Section

The following are a few general comments based on the performance of candidates on this paper.

- Candidates should be given as much practical experience as possible, such as in setting up electrical circuits and taking measurements using ammeters and voltmeters.

- Candidates need to know the correct names of common laboratory equipment.

- Candidates need to ensure they read the question carefully as many were giving answers that were already given in the question and so did not gain credit.

- Candidates should ensure to answer the question applying their knowledge to the context provided.

- Candidates should be reminded that to increase reliability we repeat **and** average.

- Answers need to be written so that the meaning is clear. e.g. “the temperature of the water increases”, rather than “it increases”.

- In questions such as 38(b) candidates should be encouraged to examine all of the data carefully. In a three-mark question such as this credit is given for describing a wider view of the information provided. Practise in class at answering this type of question would be beneficial.