

Examiners' Report

Summer 2013

PLSC Science (JSC01/01)
Year 6 Achievement Test

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General comments

This was the second examination for the Year 6 Achievement Test in science. Most candidates were very well prepared and had a sound knowledge of science at this level. This was again exemplified by high scores, sometimes close to full marks, on the multiple-choice sections of the paper.

In short answer questions, many candidates demonstrated their proficiency in recall of scientific terms and understanding of scientific principles.

In longer answer questions, many candidates demonstrated their scientific vocabulary, but were sometimes limited in how they used it in an explanation.

High achieving candidates were able to demonstrate a high standard in all these areas and the overall performance of the cohort again reflected thorough preparation by both candidates and centres.

Comments on individual questions

Question 1

Almost all candidates answered this correctly.

Question 2

Almost all candidates answered this correctly.

Question 3

Most candidates answered this correctly; option A (f) was the most common incorrect answer.

Question 4

Most candidates answered this correctly; option A (hand lens) was the most common incorrect answer.

Question 5

Responses were mixed, with no common incorrect choice. More able candidates answered this correctly.

Question 6

There was good understanding of the word opaque, with most candidates answering correctly.

Question 7

Almost all candidates answered this correctly.

Question 8

Many candidates answered this correctly. The remaining responses were mixed, with no common incorrect choice.

Question 9

Many candidates answered this correctly, with no clear pattern to incorrect choices.

Question 10(a)

This was generally well answered, with most candidates scoring 2 or 3 marks. A few candidates misunderstood the instructions and wrote Yes/No in only three boxes, one in each row.

Question 10(b)

Most candidates knew the word evaporation or were able to describe a method of heating the solution to remove the water. Candidates should be encouraged to include terminology, such as evaporation, wherever possible in their answers throughout the paper.

Question 11(a)

Many candidates were familiar with the term conductor or could state that the metal conducts electricity. Some candidates used phrases such as 'lets electricity through' without any reference to the conductive property of the metal. Weaker candidates incorrectly copied or rephrased one of the sentences from part (b).

Question 11(b)

Most candidates correctly chose the middle box, but the top box was a common choice for weaker candidates.

Question 11(c)

Most candidates answered this correctly. Candidates should be discouraged from giving alternative and/or tentative answers such as 'it will go dim or might not work'.

Question 12

Many candidates answered this correctly. The remaining responses were mixed, with no common incorrect choice.

Question 13

Most candidates answered this correctly. The remaining responses were mixed, with no common incorrect choice.

Question 14

Almost all candidates answered this correctly.

Question 15

Many candidates answered this correctly. D (rock pool by the sea) was the most common incorrect choice.

Question 16

Many candidates answered this correctly. The remaining responses were mixed, with no common incorrect choice.

Question 17

Fewer candidates chose correctly here, but with no consistent pattern to incorrect responses.

Question 18

Almost all candidates answered this correctly.

Question 19

Most candidates answered this correctly. D (sieving) was the most common incorrect choice.

Question 20

Many candidates answered this correctly. The remaining responses were mixed, with no common incorrect choice.

Question 21(a)(b)(c)

Many candidates scored 3 marks and the majority of candidates scored at least 2 marks. Sometimes maximum marks were not scored because of an incorrect choice. However, a number of candidates seemed not to notice the singular "Which feature..." so wrote more than one letter on each line.

Question 22

The first two spaces were often completed correctly, but almost all candidates, regardless of performance elsewhere on the paper, selected voltmeter rather than ammeter for the third space. Even candidates who scored close to maximum marks on the paper usually failed to score this mark. Answers other than voltmeter, or the occasional ammeter, were rarely seen on the third line, whereas incorrect answers on lines one and two were mixed.

Question 23

Many candidates answered correctly; A was the most common incorrect answer.

Question 24

Answers here were mixed. The majority of candidates correctly chose D, but B and C were common incorrect answers.

Question 25

Many candidates answered this correctly. The remaining responses were mixed, but with A being a slightly more frequent incorrect choice.

Question 26

Most candidates answered this correctly. The remaining responses were mixed, with no common incorrect choice.

Question 27

Many candidates answered this correctly. The remaining responses were mixed, with no common incorrect choice.

Question 28

The most able candidates correctly chose answer C. The remaining responses were mixed, with no common incorrect choice.

Question 29

Almost all candidates answered this correctly.

Question 30(a)(i) and (ii)

Most candidates answered both parts correctly.

Question 30(b)

The most able candidates answered this well. Of the remaining candidates, some left it blank or gave a wrong answer; others mentioned light but did not make a clear statement that indicated there would be *more* light available in the centre (or equivalent), or that trees would be blocking the light at the edges.

Question 30(c)

Only the most able candidates answered this well. A significant number of responses made reference to nitrates being poisonous or to the death of the lilies. Together with part (b) above, this was one of the lowest scoring questions on the paper.

Question 31(a)

Many candidates were distracted by the picture of a bottle of salad dressing which had been provided to assist weaker readers or those unfamiliar with the name salad dressing. As a result, many candidates made reference to likely ingredients for salad dressing or to the uses of salad dressing in their answer. Those candidates who attempted to give the generic definition of a mixture given on the specification often still made reference to 'ingredients'.

Question 31(b)

Some candidates knew the word emulsion, but the majority did not.

Question 32(a)

Few candidates showed clear understanding of the term variables. The majority copied out the contents of the table above the question, often word for word.

Question 32(b)

Many candidates were able to construct a clear table with column headings. Some candidates need further guidance on the use of the phrase "Draw a table", since a significant number gave a pictorial representation – this was often a drawing of the choice chamber with the correct number of woodlice drawn in each section.

Question 32(c)

Most candidates gave a correct conclusion.

Question 32(d)

The majority of candidates scored this mark showing their understanding of the need to collect more data.

Question 33(a)

This was well answered; the majority of candidates chose the most appropriate measuring cylinder for the task.

Question 33(b)

The most able candidates answered this with ease, often showing their working in the space at the bottom of the page. Although not required on this occasion, this demonstrates good practice for future questions.

The majority of candidates performed less well. A number of candidates added all the weighings together. When checking their answers, candidates should be advised not only to check their working, but also to look at the magnitude of their calculated value in relation to the mass of the other items listed. For example, many gave a mass of salt that was higher than the mass of the water, salt and beaker.

Question 33(c)

Most candidates demonstrated a clear understanding of factors affecting rate of dissolving. The majority scored both marks and extremely few failed to score at least one mark.

Question 34(a)

Many candidates answered this correctly. The remaining responses were mixed, with no common incorrect choice.

Question 34(b)

More candidates understood the term variables in this context than had in Q32a. However, this was still a low scoring question since many gave 'the number of masses' (the dependent variable in this case) as one of their answers, rather than a variable they would *control* to make a fair test, such as the length or width of the material being tested.

Question 34(c)

Most candidates drew neat, accurate, labelled bar charts and scored both marks. If only one mark was scored, this was usually as a result of an error with one of the bar heights, usually 17.

Many candidates coloured in their bar charts. Although this was not necessary, it was a good indicator that the paper was completed comfortably in the time available. Only a handful of scripts suggested that a few individuals may have been a little short of time and thus left a few parts of the section B questions blank.

Summary Section

Based on their performance on this paper, candidates should:

- develop their understanding of the term variables;
- develop their knowledge of the terminology used in electrical wiring and circuits e.g. conductor, ammeter;
- be given further opportunities to produce their own results tables;
- be guided on how best to check calculations;
- be discouraged from copying out sections of the question to form their answer, as indicated in last summer's report.

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