Examiners' Report
Principal Examiner Feedback

Summer 2019

Pearson Edexcel Advanced Level
In Biology (WBI03) Paper 01Practical Biology and Research Skills

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This is the final paper for Unit 3 for the old IAL Biology. Performance has been broadly in line with previous series. The hardest question proved to be 1aiii, where students were taken a little outside of what they had learned or done in class.

Question 1ai

This was generally well answered with a majority gaining full marks. The commonest error was to think that DCPIP was titrated against the juice and thus give volume of DCPIP added as the DV.

Question 1aii

With 6 mark points for 2 marks, candidates score well on this question.

Question 1aiii

This question was very challenging for all but the very best. Candidates made an attempt to suggest ways, however few would actually work.
This flags a difficulty with questions, which ask for some inventive aspect, albeit within the context of familiar scenarios. Using well-known techniques to find out something new is one of the main activities of the scientist so this needs more emphasis in teaching.

Question 1bi

This question was tackled either well, by the majority, or not well at all. Few gained 1 mark.

Question 1bii

The graph question was, as has often been the case, high scoring for nearly all. For those who did drop a mark or 2 it was usually for some missed detail such as units on the y-axis or a poor scale (such as one going up in 3s) which then makes it very difficult plot accurately.

Question 1biii

A significant number did not score at all on this question. However, after that there was an even spread of marks between 2, 3 and 4, with very few getting 1. Candidates still have a strong tendency to just quote figures and not say what they are showing. Marking points 1 and 2 were the most commonly seen.

Question 1c

There was an even spread between 0, 1 and 2 marks on this. Those who scored 1 usually did so by plotting the SD but not the mean. Those gaining zero had effectively misinterpreted the question and talked about repeating the experiment and calculating a mean.

Question 2ab

This was a high scoring question with the vast majority gaining 3 or 4 marks.

Question 2c

Again, this was generally well answered by most, with lack of units again being the most common reason for the loss of a mark.

Question 2d

This was one of the least well-answered questions on the paper. A majority had no idea about the term at all. Another group knew that endemism is about species being restricted to just one area, but only the best fully answered the question using the information and did not describe the area in which Siberian tigers occur.

Question 2e

Again, not a well-answered question with the majority gaining zero or 1 mark. Very few gained mps 3 or 4, forgetting about genetic diversity altogether and not many mentioned species richness, although could describe how it is found.

Question 2f

A large number were able to gain 1 mark by quoting more or less verbatim from the passage. The second mark was reserved for those who could go beyond the passage and realise the implications of fragmentation on outbreeding.

Question 2g

This question was generally quite well answered with ecosystem benefits being the most popular answer.

Question 2h

Despite the many reference-writing questions in the past, this still manages to discriminate well. The key to a good answer here is though attention to detail. Thus, missing of et al, putting given name before family name, the addition of extraneous details such as vol or pp, were some of the common reasons for loss of marks.

Paper Summary

Based on their performance on this paper, students are offered the following advice:

- ensure that you are familiar with all of the nine core practicals. Within the context of the 9 core practicals learn the details of the scientific method and think about how it applies to each of them
- read questions very carefully, especially the command word
- ensure that you are familiar with data handling, and understand what it means to manipulate data
- work on your ability to use your understanding of the scientific method to devise procedures in novel situations.

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