Pearson

Examiners' Report
Principal Examiner Feedback

October 2017

Pearson Edexcel International Advanced Level In Biology (WBI06) Paper 1 Practical Biology and Investigative Skills

edexcel

Edexcel and BTEC Qualifications

Edexcel and BTEC qualifications are awarded by Pearson, the UK's largest awarding body. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers. For further information visit our qualifications websites at www.edexcel.com or www.btec.co.uk. Alternatively, you can get in touch with us using the details on our contact us page at www.edexcel.com/contactus.

Pearson: helping people progress, everywhere

Pearson aspires to be the world's leading learning company. Our aim is to help everyone progress in their lives through education. We believe in every kind of learning, for all kinds of people, wherever they are in the world. We've been involved in education for over 150 years, and by working across 70 countries, in 100 languages, we have built an international reputation for our commitment to high standards and raising achievement through innovation in education. Find out more about how we can help you and your students at: www.pearson.com/uk

October 2017
Publications Code WBI06_01_1710_ER

General Information

In general, students showed knowledge of the core practical methods. Students clearly identified variables that needed to be controlled but their descriptions as to how the control could be achieved lacked the precision required for this examination. Most students did try to tailor their answers to the given context of each question.

Question 1

Q1a
This question asked students to calculate a percentage increase in the vitamin C content. Most students calculated the difference in vitamin C content correctly but only a minority expressed this as a percentage of the vitamin C content of the Supreme variety.

Q1bi
Nearly all of the students gave some appropriate details to describe a method for comparing the vitamin C content of two liquids. However, the detail needed to gain credit for some marking points, for example, a method for extracting liquid from the fruit was not described. Many students did not clearly indicate the expected change of colour.

Q1bii
Most students correctly identified one of the variables other than the independent variable.

Q1biii
Students were then asked to choose one of the variables they had identified and explain how it could be controlled. Many students selected an inappropriate variable to be controlled and therefore did not give an answer describing an effect that it would have on the results that was worthy of credit.

Question 2
The context of this question was the date of return of migrating birds of different ages.

Q2a
Many students wrote a null hypothesis that only gained one mark. The second mark could not be awarded to statements linking climate change to the date of return.

Q2b
Most students presented the data in a clear table. In a few cases the full headings from the information given were not included. Many students made errors of omission when entering the raw data. The mean values were not always stated to the nearest whole day.

Q2c
Most students presented graphs with both axes fully labelled. The plotting was usually easily checked as a sensible scale was chosen in most cases. If a student had calculated incorrect means in part b they could still be awarded the plotting mark here as an error carried forward. Only a small number of students failed to include any range bars on their graphs.

Q2d
Most students correctly identified the critical value of 0.400 from the table and compared this with the calculated value of *r*. However, the negative sign only indicates a negative correlation rather than a value less than the critical value. The mistake of accepting the null hypothesis and suggesting there was no significant difference between the day of return and the year of hatching.

Q2e
Most students identified the small sample size and high variability of the results as reasons why the investigation might not be valid.

Question 3
This question was centred around the effect of light intensity on the abundance of one species of plant in a woodland.

Q3a
Students were asked to consider safety and ethical issues that they would need to take into account. Most students gave sensible answers that related to this investigation and gained two marks.

Q3b
Students were asked to describe preliminary work to ensure a proposed method would work. The students that had engaged with the context of the investigation gave good descriptions that covered at least three of the points on the mark scheme. Some answers were only given credit for the idea of practising the method to see if it works. This was particularly true of students that wanted to carry out preliminary work in a laboratory rather than in the field.

Q3c
Nearly all the students described a method of their investigation in a logical sequence. Most answers were focused around measuring the abundance of *M perennis*. However, there were frequently details of the method missing from answers. For example, there were very few accounts that stated a light meter would be used to measure light intensity and very few students stated a size of quadrat they would use.

Q3d
Students were asked to explain how the data from their investigation would be recorded, presented and analysed. Most students either described or drew tables with headings and graphs with labelled axes. Light intensity was often stated without any appropriate units. Only a small number of students suggested a statistical test that was not a suitable correlation test.

Q3e
The students found this question difficult to answer as they may have never carried out an investigation in the field. Only a small number of students identified that the light intensity would change during the sampling period.

Paper Summary:

Based on their performance on this paper, student should:

- Read the whole question before you start to answer, and check that your answer covers everything the question asks for.
- Make sure your answer relates to the specific context of the question.
- When studying Core Practicals, think about what the techniques might be used for and the types of scientific question they might help to answer.
- Carry out every Core Practical for yourself, so you understand how it works and any difficulties that might be encountered.
- If you are given the procedure for a practical technique, put yourself in the shoes of the person writing the procedure: how would they have worked out the details such as volumes, concentrations and times? They will have used preliminary practical work.
- Consider the strengths and limitations of each Core Practical technique.
- Practice writing null hypotheses for experiments you carry out, even if you will not necessarily be applying a statistical test.

Grade Boundaries

Grade boundaries for this, and all other papers, can be found on the website on this link:

http://qualifications.pearson.com/en/support/support-topics/results-certification/grade-boundaries.html

Pearson Education Limited. Registered company number 872828
with its registered office at 80 Strand, London, WC2R 0RL, United Kingdom