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Examiners' Report
Principal Examiner Feedback

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Pearson Edexcel International Advanced Level
Biology (WBI04) Paper 1
The Natural Environment and Species Survival

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Introduction

We saw a wide range of responses on this paper indicating that many students were well-prepared for this exam. The quality of some of the responses really was very good and there were fewer questions left blank than we have seen in the past.

Question 1

Students coped well with the diagram in part (a) and answered the multiple choice questions without any real problems; (iii) was the lowest scoring of the four questions.

The table of data in part (b) discriminated well and we were pleased with the number of students who suggested appropriate values in (iii) and attempted to explain the reasons for their choice. Students do need reminding that when they are describing data, as in (i), they should quantify one of their descriptions.

Question 2

Students know the sequence of events that take place during inflammation but students must write responses that actually answer the question - part (a) was asking what would happen if inflammation was reduced and not what would happen if it took place.

Students should be encouraged to read the question carefully to pick out what we are actually asking for. In part (c) we tell them that the transplanted organ is destroyed by T killer cells. The answer requires an account that starts with the reduced activity of the T helper cells and ends with the transplanted organ not being destroyed i.e. no activated T killer cells to release the perforins, so no chemicals to destroy the transplant cells.

Question 3

The responses to part (a) were quite disappointing as a large proportion of students described transcription and translation instead of describing the role that mRNA plays in these processes. Admittedly, these accounts were very good. Students should be encouraged to apply their knowledge to the context of the question and not simply regurgitate mark schemes from past papers which were appropriate for the context of the particular question that they had been written for.

From the responses that we saw it was evident that weaker students are very confused about the degenerative code and its significance. Part (b)(ii) was testing this part of the specification, but we saw a number of scripts where it was being referred to in parts (i) and (iii) as well.

Question 4

In part (a), the students who remembered to relate temperature to enzymes scored well. However this question was another example of where students need to read the question carefully before they launch into their response. We only wanted an explanation for the rate of development but got several responses that talked about embryo survival and the ratio of males to females. Although this did not penalise the mark for the question it did mean that valuable time was lost.

Students coped well with the slightly unusual multiple choice in this question. Ironically, in part (c), when we did want the students to address all three aspects of the data they did not! Many students simply focussed on the ratio of males to females.

Question 5

Part (b) was probably the question that was answered the best. We saw some really good accounts of a microbiology investigation, with the stronger students focussing on testing the combination of antibiotics that the question required. What was really pleasing was the number of students who were describing how the bacteria should be spread on agar; in the past the bacteria have been spread directly onto the Petri dishes.

The majority of students found the two calculations very straightforward.

Question 6

The whole of this question was answered reasonably well. Students know the AS specification content on breeding programmes in zoos and are used to gel electrophoresis questions in this paper. The quality of expression was noticeably improved with most students referring to DNA bands on the gel instead of fragments, bars or blocks which we used to see a lot of.

Part (b)(iii) saw some very good ideas. Students just need to be reminded to use the mark allocation for a question to ensure that they are writing sufficient responses.

Question 7

Students had a good attempt at this question. With the exception of part (a), the context for the rest of the question was different.

There were some good attempts at comparing adenosine deaminase deficiency and HIV infection in part (b). Students just need reminding to be as specific as they can in their answers; they are supposed to know that the host cell of HIV is the T helper cell so a reference to T cells is going to be too vague.

Question 8

Part (a) saw lots of very good accounts of primary succession, which unfortunately were not required. Students must be reminded to read the whole of the question and think about what is required, instead of key word spotting and then churning out everything that they know about the topic.

In part (b), marks were lost by students who did not make it clear which trees they were talking about or that whole species were being lost. When answering biodiversity questions it is important that students refer to species of plants or animals in their answer.

Part (c) we did not want a straightforward account of global warming. The stronger students wrote about the faster-growing trees absorbing more carbon dioxide from the atmosphere with the result of less infra red radiation being trapped.

From the response to part (d) it was clear that students understand that global warming is a controversial issue however the question required students to think about the groups of people listed in the question specifically.

Summary

Based on the performance of students on this paper, the following advice is offered:

- Avoid the use of 'it' and 'they' in an answer, as it is not always clear what these pronouns are referring to, resulting in a response that is not unambiguous enough to be awarded marks.
- Check the mark allocation of a question and use this to help structure the response.
- Once the response has been written it should be read through carefully to ensure that the question has been answered.
- Always check the command word at the start of the question. If the command word is 'explain' make sure that there is some biological reasoning included in the response.
- If a question has been asked in relation to a particular context, the answer must be specific to the context and not just be a generic description / explanation.

Grade Boundaries

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