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Examiners' Report
Principal Examiner Feedback

Summer 2019

Pearson Edexcel Advanced Level

In Biology (WBI01) Paper 01

Lifestyle, Transport, Genes and Health

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Grade Boundaries

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Introduction:

This paper tested the knowledge and understanding of the two AS topics: 'Lifestyle, health and risk' and 'Genes and health', together with elements of How Science Works. The range of questions provided plenty of opportunity for candidates to demonstrate their grasp of these AS topics. Overall, candidates coped extremely well with this paper, finding most of the questions straightforward to tackle. There were very few examples of questions not being attempted at all, with all questions achieving the full spread of marks.

It was good to see how well many candidates could recall several areas of the specification in a good level of detail, particularly the QWC questions. It was also very pleasing to see few candidates losing marks for poor quality of written communication (QWC) with answers often set out in a logical style with good expression of clarity.

Some candidates let themselves down by not reading the questions carefully enough, or by providing a response without the detail required at this level.

It was also noted that several candidates simply wrote everything they knew about a given topic, therefore wasting time. It is suggested that candidates look carefully at the maximum number of marks available for each question and structure their answers accordingly.

Many candidates have clearly made good use of past papers and mark schemes, but it is important for candidates to understand the scientific principles covered in the specification, so they can apply them to new contexts and not write a rehearsed answer to a question that has been asked in the past.

Question 1(c)

The majority of the candidates were able to complete this without a struggle most commonly scoring 3 marks However, a description of the structure of starch had to be linked to an explanation to achieve full marks.

There was a misconception that energy is being broken down rather than starch and similarly that it is energy being stored rather than glucose.

Question 1(d)(i)

A simple statement of correlation which most candidates were able to recognise.

Question 1(d)(ii)

Candidates need to answer this question in terms of energy difference between men and women, but some answers were typically vague "men eat more..." or irrelevant in terms of mentioning muscle mass or BMI.

Question 1(d)(iii)

Many candidates achieved full marks here and it was pleasing to see the correct use of manipulated figures to illustrate differences.

Question 2(a)

The majority of candidates were able to obtain MP1 that heart rate increases as temperature increases. Fewer were able to develop this idea as being linked to an increase in enzyme activity and more enzyme-substrate complexes being formed.

Question 2(b)

Many candidates were able to obtain full marks for this question.

Question 2(c)

A very well answered question by the majority of candidates.

Question 3(b)

Candidates struggled to convert the information that had been given into a pedigree diagram. Many drew Punnett squares which were not creditworthy.

Question 3(c)(i)

This was a question about prenatal testing that candidates felt confident with from previous papers. Many scored full marks.

Question 3(c)(ii)

This was a question about prenatal testing that candidates felt confident with from previous papers. Many scored both marks. However, we did not award mp1 for reference to parents being carriers as the condition is a dominant one. This prevented some candidates from accessing this marking point, though they could still gain full marks.

Question 4(a)

Candidates scored highly on this drawing question-the majority gained 2 marks.

Question 4(c)

A well answered QWC question on the roles of RNA in protein synthesis. It was pleasing to see candidates answering coherently and in a logical sequence.

Question 5(a)

Well answered by many.

Question 5(b)

Well answered by many with use of the correct figures.

Question 5(c)(i)

This was a well answered question by many candidates.

Question 5(c)(ii)

Overall a high scoring question for many candidates, though many did not score MP1 and gave an incorrect description of artery wall for MP2.

The QWC emphasis was on logical sequence which the majority of candidates adhered to.

Question 6(b)

Overall a very well answered by the majority of candidates.

Question 6(c)(i)

Well answered by most.

Question 6(c)(ii)

Candidates were asked to explain how an increase in temperature affected permeability in beetroot cells. Many were able to state that it increases, and more pigment leaks out. However, the role of cell membrane components was either ignored or wrongly explained. For example, candidates referred to the whole phospholipid membrane moving rather than the individual phospholipids, and enzymes being denatured rather than membrane proteins.

Question 7(a)(i) and (ii)

These questions were well answered with the majority of candidates correctly identifying the pulmonary vein and sketching the correct route of blood through the heart.

Question 7(a)(iii)

Candidates were asked to explain how oxygen concentration in the blood would be affected by the child having a hole in the heart. The majority recognised that this would cause mixing of oxygenated and deoxygenated blood, but few were able to develop the idea further to.

Question 7(b)(i)

Many candidates struggled to extract the relevant data from the bar chart and use it in a calculation.

Question 7(b)(ii)

Sadly, candidates often misread the information and gave a description of ventricular systole itself rather than the events following it and hence scored zero,

Question 8(a)

Candidates were asked to describe what is meant by the term gene mutation. Though this question has been asked before, few scored both marks for incorrectly mentioning amino acid sequences and genes.

Question 8(b)

Only a handful were able to gain full marks for this question which was a QWC with the emphasis on clarity of expression. Candidates were expected to link ideas and knowledge from different areas of the specification, such as protein structure and blood clotting. Some told the verbatim blood clotting process without appreciating that the mutation had caused this process to stop.

Question 8(c)

Only a small percentage of candidates answered this question correctly though it was targeted at 2 grade A marks.

Paper Summary:

A wide range of candidate responses were seen at both grade boundaries. Questions involving mathematical skills continue to cause problems to some candidates and a level 2 standard was not seen in some cases. As this is the last of the legacy papers for this specification, many questions were from areas that had been tested before for example Daphnia and CVD. However, they were often testing slightly different aspects of the specification point or required synergy of information from more than one source. Whilst the majority of candidates coped with this well, a few failed to appreciate these subtle nuances.

The A grade and E grade boundaries are in line with those from previous series and it was felt that candidate performance and the scope and difficulty of the areas tested were all comparable.