



Pearson
Edexcel

Examiners' Report

Principal Examiner Feedback

October 2018

Pearson Edexcel International Advanced Level

In Biology (WBI01)

Lifestyle, Transport , Genes and Health

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

1 (a) (i)

The majority of candidates gained this mark.

1 (a) (ii)

The majority of candidates gained this mark.

1 (b) (i)

This was a good discriminatory question with only 20% of candidates gaining 3 marks. Often a water molecule was not included in the answer or the peptide bond was drawn incorrectly.

1 (b) (ii)

The majority of candidates gained this mark.

1 (c)

Many candidates gained 2 marks. Most correctly identified water as a solvent and that it is polar.

Question 2

2 (a)

This question was generally well answered, though some candidates incorrectly stated a consequence rather than an effect and therefore scored only 1 mark.

2 (b)

The majority of candidates gained this mark.

2 (c)

The majority of candidates gained both marks here.

2 (d) (i)

This question was well answered.

2 (d) (ii)

This question was well answered.

2 (d) (iii)

Few candidates scored maximum marks here. Many simply gave a list of lifestyle factors and could therefore only access one of the marking points

Question 3

3 (a) (i)

This has been asked on a few occasions previously and was well answered.

3 (a) (ii)

Few candidates scored both marks. There still seems to be a misconception that an allele is a "type" of gene.

3 (b) (i)

This was a genetic cross concerning a dominant disorder. Many candidates correctly gave genotypes of parents, gametes and all four genotypes of the possible offspring, but fewer were able to go on to link these genotypes to the correct phenotypes.

3 (b) (ii)

This was well answered and there was also an ecf mark from (b)(i)

Question 4

4 (a)

This question was well answered.

4 (b) (ii)

An average number of candidates gained both marks. Many confused the correct bases.

4 (b) (ii)

This question was well answered.

4 (c)

This question was a good discriminator across the ability range, a QWC 5-mark question on transcription with an emphasis on logical sequence. Many candidates score 3 or more marks and there was a good level of recall. It was clear that they had made effective use of mark schemes from previous series where a similar question had been asked.

Question 5

5 (a)

Most candidates answered this BMI calculation question correctly.

5 (b) (i)

Candidates were asked to describe trends from a graph showing the relationship between BMI and diabetes. Many correctly identified the trend and provided a correct manipulation of data figure.

5 (b) (ii)

This question asked candidates to compare trends in men and women. Many were able to state that the incidence is higher in men but fewer went on to look at the data in more detail or provide a relevant calculation.

5 (c)

The majority of candidates correctly identified taking exercise as a method of reducing obesity. However only vague references to an improved diet were often given and not linked to energy intake so the second marking point wasn't seen often.

5 (d)

This question on the use of food diaries as an investigative tool was generally well answered.

Question 6

6 (a) (i)

Many candidates answered correctly

6 (a) (ii)

This was very well answered with many scoring a maximum of 3 marks, clearly having made use of past papers and marks schemes.

6 (b)

Few candidates were able to work out this blood vessel calculation correctly. Historically such questions are not well answered which suggests that this is an area which candidates should concentrate on with reference to past papers and

mark schemes. Additionally, level 2 math skills need to be worked on for example converting mm to cm.

6 (c)

This was a QWC question for 6 marks with the emphasis on clarity of expression. Candidates were asked to relate an arteries structure to its function. Responses needed to be paired ie the structure related to its associated function. Some candidates simply gave a list of structures. However, it was generally well answered with a pleasing level of detail and knowledge and many scored 4 or more marks.

Question 7

7 (a)

Well answered question by candidates.

7 (b) (i)

Candidates were asked to name an appropriate prenatal test and describe how it is carried out. This was well answered with many gaining full marks and providing a pleasing level of detail.

7 (b) (ii)

This question has been asked in a previous series and was well answered.

7 (b) (iii)

Candidates were asked to discuss the ethics of genetic screening and generally did so well. There was however some misuse of biological terms.

Question 8

8 (a)

This question asked candidates to describe the relationship between enzyme activity and temperature. Similar questions have been asked in the past and many gained 2 marks for describing the trend across the temperature range and including a correct manipulation of data linked to this. The second marking point was rarely seen.

8 (b)

This question asked candidates to explain the relationship between enzyme activity and temperature. Many gained mp1 for stating that the enzyme is denatured, with higher level answers linking this to bonds breaking and fewer enzyme-substrate complexes being subsequently formed.

8 (c)

This was a practical based/HSW type question. Candidates were provided with information and asked to describe an experiment they could do to verify the results of THIS investigation. Unfortunately, many described different enzyme linked experiments and a few even discussed other core practical's such as Daphnia and vitamin C. Most commonly marks were awarded for naming a controlled variable, controlling temperature in a water bath, and repeating to find an average. The other marking points were seen less frequently, particularly the determination of mass and the calculation of a rate.

Advice to students:

In order to improve their performance candidates should: -

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

- Read the whole question carefully, including the introduction, to help relate your answer to the context asked. You should read the question through carefully at least once and then write down your knowledge and understanding in a way that answers the question.
- Read your answers back carefully – do they answer the question, have you made at least as many clear points as marks are available?
- When asked to describe data, either graphs or tables, look first for the main trends i.e. the overall changes and describe these. You need then to make a judgment about the usefulness of any mathematical manipulation of the data and this should only be carried out if it adds value to your written description.
- Do not be afraid to include a sketch diagram or graph if it will help add clarity to your answer.
- When describing the measurement or control of variables, be specific about what is to be measured e.g. volume or mass and avoid vague terms such as amount.
- Pay particular attention to the use of technical names and terms, a logical sequence and organisation of your answer in QWC labelled extended writing questions.
- Use past papers and mark schemes to ensure understanding of questions involving magnification calculations and calculations in general.
- Pay attention to the number of marks available for each question and structure answers accordingly.

