# GCSE Biology

# How to answer 6 mark LOR – J260-01 2018

# Example: J260 01 June 18, Q8b

### Task 1: Read this question

**8.** Peahens have plain grey feathers, which makes it hard for predators to see them.

The male peacock has brightly coloured feathers and a large tail that it used to attract peahens so they can mate

**(b)\*** Jamal’s textbook says that the male’s bright feathers and large tail evolved by natural selection, even though there are some disadvantages to having them.

Explain how the male peacock’s features evolved by natural selection and why they are still present despite these disadvantages.

#### Read the part of the question that tells you what to do….

‘Explain how the male peacock’s features evolved by natural selection and why they are still present despite these disadvantages.’

Underline parts of the question that you need to include when you write your answer.

### Task 2: What levels are these answers?

Look again at the question. The ‘important things to do’ have been underlined:

**Explain how** the male peacock’s features evolved by **natural selection** and **why** they are still present despite these **disadvantages**.

A ‘good’ answer (a **Level 3 answer**) will answer ALL parts of the question so will ….

* Explain how the features evolved by natural selection (this means in detail)
* Identify the disadvantages of the tail
* Say why the features are still there, even if they are a disadvantage

Answers at **level 2 and level 1** will only answer some parts of the question.

#### Look at these five examples of candidate answers

In your group, decide whether you think each answer is a ‘level 1’ or a ‘level 2’ or a ‘level 3’ answer. You don’t need a mark scheme to do this, just use your judgement, based on what the question is asking.

Justify your decisions by…

* Underlining parts of the answers that you ‘like’ and work out which part of the question the answer links to.
* Making notes on the answer to say what you think is ‘missing’.

**Answer 1**

Explain how the male peacock’s features evolved by natural selection and why they are still present despite these disadvantages.

As female peahen’s were attracted to the peacock who had the feature of brightly coloured tail, the was a greater chance that they would mate. This furthermore created offspring that also carry the gene for bright colours and large tail. These offspring would then pass on this gene to their own offspring.

Eventually the numbers of peacocks with brightly coloured feathers and large tail, out numbered those that did not. Even dispite the disadvantages the female attraction and posibily the dominant allele explains why these feature are still present today.

**Level**

**Notes**

**Answer 2**

The male peacock’s features have evolved because every animal chainges over time so the peacocks bright feathers and large tail has come over time to atract the femail peahen’s, there long tails could also be used for fighting, and by having the bright feathers will atract the peahens and help them mate.

**Level**

**Notes**

**Answer 3**

Many generations ago the peacock would have had mutations in genes producing new variants of the spieces. These could have made the peacocks tail more colourful. The colours would have attracted the peahens to mate with them. The characteristic would have been passed down to the offspring. Through many generations the peacocks with colourful feathers would reproduce more which decreased the population of peacocks with plain feathers.

**Notes**

**Level**

**Answer 4**

The male peacock’s bright features are helpful for it because they allow it to attract females and help them mate because they look attractive to females. This is natural selection as those who do not have bright feathers will not reproduce and die. Also the big, colourful feathers help the peacock seem large and scary to another peacock when they’re fighting over a female peahen. The male peacocks features are still present today because there are more advantages and uses for their feathers than disadvantages.

**Notes**

**Level**

**Answer 5**

A peacocks feathers may have evolved by natural selection as in order to attract a mate, they will need to stand out, hence the brightly coulored feathers, natural selection would have allowed those with brightly coloured feathers to breed whilst those with duller feathers slowly died off, decreasing the chance of dull coloured feathers on males being born, they are still present despite the disadvantages as they are essential for the breeding of peacocks as it increases the chance of peacocks finding a mate, therefore reducing the risk of extinction.

**Level**

**Notes**

### Task 3: Writing your own answer

Now write your own answer to the question on this sheet.

**8.** Peahens have plain grey feathers, which makes it hard for predators to see them.

The male peacock has brightly coloured feathers and a large tail that it used to attract peahens so they can mate

**(b)\*** Jamal’s textbook says that the male’s bright feathers and large tail evolved by natural selection, even though there are some disadvantages to having them.

Explain how the male peacock’s features evolved by natural selection and why they are still present despite these disadvantages.

### Task 4: How did the examiners mark these answers?

This is the mark scheme for the question that the examiners used to mark the question.

| **Question** | **Answer** | **Marks** | **Guidance** |
| --- | --- | --- | --- |
| **8** | **(b)** |  | **Level 3 (5–6 marks)** Detailed explanation at the genetic level of how the features evolved by natural selection. **AND** Explains why the bright feathers and large tail are still present. *There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.* **Level 2 (3–4 marks)** Explains how the features evolved by natural selection but lacks reference to what happens to the genetic variants/alleles. **AND** Explains why the bright feathers and large tail are still present. **OR** Explanation at the genetic level of how the features evolved by natural selection. *There is a line of reasoning presented with some structure. The information presented is relevant and supported by some evidence.* **Level 1 (1–2 marks)** Explains how the features evolved by natural selection but lacks reference to what happens to the genetic variants/alleles. **OR** Explains why the bright feathers and large tail are still present. *There is an attempt at a logical structure with a line of reasoning. The information is in the most part relevant.* **0 marks** *No response or no response worthy of credit.*  | 6 | **AO1.1 Demonstrating knowledge and understanding of natural selection.** *how the features evolved by natural selection:* * new features/variation caused by a mutation/changes in the DNA
* there is competition to survive and reproduce
* individuals with phenotypes/features that are beneficial/advantageous are more likely to survive and reproduce
* the beneficial/advantageous genetic variants/alleles are passed on
* the beneficial/advantageous genetic variants/alleles become more common in the population over generations
* so, the feature(s) become more common over generations

**AO2.1 Application of knowledge and understanding in this context** *why the disadvantageous features are still present?** bright feathers/large tail help male peacocks to attract mates/peahens
* therefore, more likely to reproduce and pass on the genetic variants/alleles for these features
* the (reproductive) advantage of having the features outweighs the disadvantage
 |

This is some information about the marks that the examiners gave for each answer.

|  |  |  |  |
| --- | --- | --- | --- |
| **Answer** | **Level** | **Mark** | **Comments** |
| 1 | **3** | 6 | This response is clearly written and provides enough depth to get across each point. The first sentence explains the advantage of having bright feathers, to attract peahens and have a greater chance of mating. The candidate then explains that the gene for bright feathers is passed on and the offspring will then pass this gene on. They go onto describe the idea that despite the disadvantages, the attraction of females to the bright feathers explains why they are still present. This is a detailed explanation at the genetic level of how the features evolved by natural selection. This meets all the Level 3 descriptors for content and communication. |
| 2 | **1** | 2 | This candidate has correctly explained why the bright feathers are still present. They refer to the attraction of female peahens for mating. This information is relevant and has logical structure. There is no mention of passing on features or the genetics of evolution, so is limited to Level 1, 2 marks. |
| 3 | **3** | 6 | The idea of a mutation causing variants in the species causing some peacocks tails to be more colourful, along with passing on this characteristic is a detailed explanation at the genetic level of how the features evolved by natural selection. The application of this knowledge to suggest that the colours would attract peahens to mate and lead to increased reproduction, explains why the bright feathers are still present. This response meets all the Level 3 descriptors for content and communication. |
| 4 | **2** | 4 | This response clearly explains that the bright features attract females and helps them mate. It then explains how the features evolved by natural selection by saying that those without features do not reproduce. There is no reference to what happens at the genetic level so an improvement could be made to include this. Without it this response can be given Level 2. |
| 5 | **2** | 4 | This candidate explains the advantage of bright feathers for attracting peahens and being more likely to breed and pass on these traits, while the peacocks with dull coloured feathers would not. The answer does not make any reference to genetics so is limited to Level 2, 4 marks. |

#### Task 4 – Look at the levels you gave for each answer

Did you agree with the examiner level? If not, look at the comments and work out why.

Now use the mark scheme to mark your own answer.

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