AQA GCSE Combined Science - Trilogy | 8464

SPECIFICATION POINT 4.7.3.6

Maintaining biodiversity

Past-paper questions

Tier	**Higher**
Question groups	**4**
Available paper years	**2018–2025**

Using this booklet

1. Answer the questions in order and show your working.
2. Original question numbers and marks are retained.
3. Print at actual size (100%) for measuring questions.
4. Use the companion answer booklet to check your work.

Name: _____ **Date:** _____

Whole questions are retained for context, so some parts assess other specification points. Current and legacy sources are labelled. Continue on extra paper if needed.

4.7.3.6 Maintaining biodiversity

Question 01

June 2018 | 8464/B/2H | Original Q5

0 5 Read the following.

> In the 1950s farmers in India could not grow enough rice to feed the rapidly increasing population.
>
> At the International Rice Research Institute (IRRI) scientists began a selective breeding programme with 10 000 different varieties of rice plants.
>
> In 1966 the IRRI produced a new variety called IR8 which gave a yield of up to ten times the traditional varieties. IR8 has short stems and large rice grains.
>
> IR8 was grown by farmers all over India so people had enough to eat.

0 5 . 1 The IR8 variety of rice was produced by selective breeding.

Describe the steps the scientists would have taken to produce IR8

[4 marks]

4.7.3.6 Maintaining biodiversity

Question 01 · continued June 2018 | 8464/B/2H | Original Q5

0 5 . 2 The IRRI has now developed several new varieties of genetically modified (GM) rice plants.

Some people in India agree and some people disagree with GM varieties of rice being grown.

Explain why.

[4 marks]

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4.7.3.6 Maintaining biodiversity

Question 02

0 3 There is a need to grow enough food for all the people in the world.

Growing enough food affects habitats and biodiversity.

0 3 . 1 What is meant by the term biodiversity?

[1 mark]

Peat bogs are being destroyed because peat is used by humans.

Destroying peat bogs also reduces biodiversity.

0 3 . 2 Give **one** use of peat taken from peat bogs.

[1 mark]

0 3 . 3 Explain why the use of peat is harmful to the environment.

Do **not** refer to biodiversity in your answer.

[2 marks]

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Question 02 · continued

0 3 . 4 Intensive farming, where a single crop is grown on a large area of land year after year, is more cost effective for farmers.

It is efficient to use fertilisers and to burn the waste so the land is ready to use the next year.

Planting a single crop reduces biodiversity.

Suggest **two** ways that this type of farming can damage the environment.

Do **not** refer to biodiversity in your answer.

[2 marks]

1 _____

_____

2 _____

_____

0 3 . 5 Most of the world's production of antibiotics is used in farming.

Antibiotics are given to animals to prevent the spread of disease.

Explain how the widespread use of antibiotics in farming is a threat to human life.

[4 marks]

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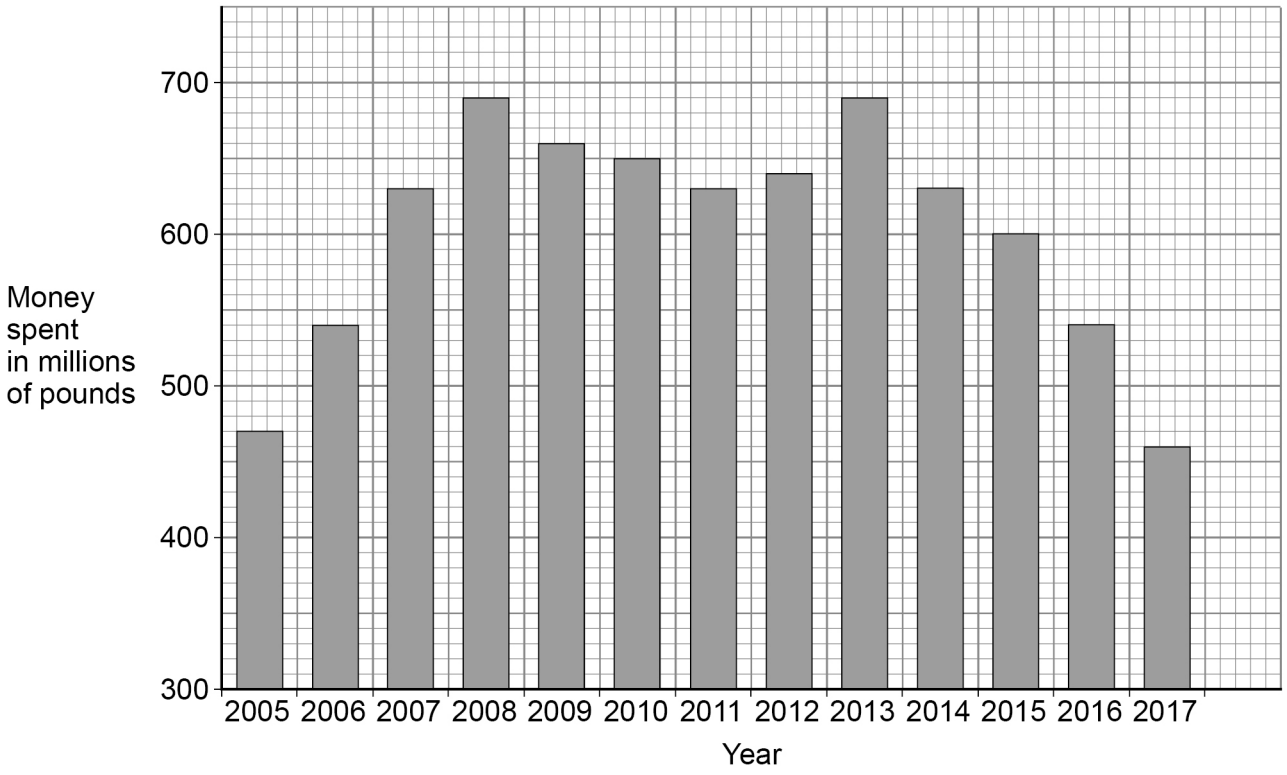
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4.7.3.6 Maintaining biodiversity

Question 03

0 2 **Figure 2** shows the money spent on conserving biodiversity in the UK by the government.

Figure 2



0 2 . 1 Describe the trends in the money spent on conserving biodiversity from 2005 to 2011.

Use data from **Figure 2** in your answer.

[2 marks]

4.7.3.6 Maintaining biodiversity

Question 03 · continued

0 2 . 2 Calculate the percentage decrease in the money spent on conserving biodiversity from 2013 to 2017.

Use the equation:

$$\text{percentage decrease} = \frac{\text{change in money spent from 2013 to 2017}}{\text{money spent in 2013}} \times 100$$

Give your answer to 2 significant figures.

[3 marks]

Percentage decrease (2 significant figures) = _____ %

0 2 . 3 Conservation of peat bogs can help maintain biodiversity.

Give **two** uses of peat taken from peat bogs.

[2 marks]

1 _____

2 _____

Question 2 continues on the next page

4.7.3.6 Maintaining biodiversity

Question 03 · continued

0 2 . 4 Describe **two** ways to **increase** biodiversity in the UK.

Do **not** refer to money spent or to peat in your answer.

[2 marks]

1 _____

_____

2 _____

_____

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4.7.3.6 Maintaining biodiversity

Question 04

0 4 Farmers can increase crop yield by controlling the conditions the plants grow in.

0 4 . 1 Maize is a crop plant.

A variety of maize has been genetically modified (GM) to be resistant to a herbicide.

Explain how growing GM herbicide-resistant maize can produce a larger yield than growing non-GM maize.

[4 marks]

Extra space

0 4 . 2 Explain how growing a GM herbicide-resistant crop can **decrease** the biodiversity of animals.

[2 marks]

Question 4 continues on the next page

Bees are a type of insect.

The number of insects near a crop can be increased by planting hedgerows.

0 4 . 3 Increasing the number of bees **and** other insects increases crop yield.

Suggest **two** reasons why increasing the number of insects can increase crop yield.
[2 marks]

1 _____

_____

2 _____

_____

0 4 . 4 Hedgerows provide habitats for insects.

Give **one** reason why increasing hedgerow habitats increases insect numbers.
[1 mark]

_____

_____

0 4 . 5 Some farmland contains areas of peat.

When peat is dug up:

- the oxygen levels in the peat increase
- the peat decays quickly.

Explain why increasing the level of oxygen in peat contributes to climate change.
[2 marks]

_____

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