AQA GCSE Combined Science - Trilogy | 8464

SPECIFICATION POINT 4.7.3.4

Deforestation

Past-paper questions

Tier	**Foundation**
Question groups	**4**
Available paper years	**2019–2025**

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.

4.7.3.4 Deforestation

Question 01

June 2019 | 8464/B/2F | Original Q3

0 3 Animals have adaptations to survive in their environment.

These adaptations may be structural, behavioural or functional.

0 3 . 1 Draw **one** line from each animal adaptation to the type of adaptation it is.

[2 marks]

Animal adaptation	Type of adaptation
 Male palm cockatoos use sticks to beat on hollow branches to attract females.	Structural
 The harmless hornet moth has black and yellow stripes to look like a bee or wasp.	Behavioural
 Sea spiders have automatic muscle contractions that move oxygen around their bodies.	Functional

4.7.3.4 Deforestation

Question 01 · continued

Plants also have adaptations.

Orchid plants have adaptations which make them one of the most successful plant groups.

Orchids rely on insects for pollination.

Figure 2 shows an orchid.

Figure 2



0 3 . 2 Which **two** features help orchids survive?

[2 marks]

Tick (✓) **two** boxes.

- Brightly coloured flowers ☐
- Large quantities of pollen ☐
- No scent ☐
- Oval shaped leaves ☐
- Small leaves ☐

4.7.3.4 Deforestation

Question 01 · continued

Many orchid species grow in tropical rainforest ecosystems.

0 3 . 3 What name describes the variety of all the different species found in an ecosystem?

[1 mark]

Tick (✓) **one** box.

- Biodiversity ☐
- Evolution ☐
- Feeding relationship ☐
- Habitat ☐

0 3 . 4 Some species of orchid may become extinct because of deforestation.

Give **one** reason why tropical rainforests are being cut down.

[1 mark]

0 3 . 5 Give **one** factor that might cause a species of orchid to become extinct.

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

[1 mark]

Scientists have analysed the entire genetic material of one species of orchid.

0 3 . 6 What chemical is the genetic material made from?

[1 mark]

0 3 . 7 What is the name for the entire genetic material of an organism?

[1 mark]

9

4.7.3.4 Deforestation

Question 02

November 2020 | 8464/B/2F | Original Q5

0 5 This question is about biodiversity.

A farmer:

- grows only wheat crops
- has used all his small fields to make a few large fields
- cuts down trees in his woodlands to burn as fuel.

0 5 . 1 What are **two** ways the farmer could increase biodiversity on his farm?

[2 marks]

Tick (✓) **two** boxes.

Cut down trees to grow wheat	☐
Plant hedgerows around his fields	☐
Plant many different crops in his fields	☐
Put fences around his fields	☐
Put fertiliser on his wheat crop	☐

4.7.3.4 Deforestation

Question 02 · continued

Students investigated the effect of cutting down trees in the woodland.

This is the method used.

1. Mark out a 10 m by 10 m area where trees have been removed.
2. Place a 1 m × 1 m quadrat at six random positions in the area.
3. Record the number of plant species present.
4. Record the number of invertebrate species seen among dead leaves on the ground.
5. Repeat steps 1 to 4 in an area where there are trees.

0 5 . 2 Suggest **one** improvement the students could make to their method.

[1 mark]

0 5 . 3 The students made this prediction:

'There will be more invertebrate species living in the area where there are trees.'

Explain why the students' prediction may be correct.

[2 marks]

Question 5 continues on the next page

4.7.3.4 Deforestation

Question 02 · continued

Table 1 shows the students' results.

Table 1

Quadrat	Number of plant species		Number of invertebrate species	
	Area with no trees	Area with trees	Area with no trees	Area with trees
1	8	2	4	10
2	6	2	3	6
3	7	0	4	8
4	6	3	5	14
5	20	4	2	9
6	8	1	6	13
Mean	7	2	4	10

0 5 . 4 The students decided that one result was anomalous.

Draw a ring around the anomalous result in **Table 1**.

[1 mark]

0 5 . 5 How does removing trees affect the number of invertebrate species living among the dead leaves on the ground?

Use **Table 1**.

[1 mark]

4.7.3.4 Deforestation

Question 02 · continued

0 5 . 6 There were more plant species growing in the area where there were no trees.

Explain why.

[3 marks]

10

Turn over for the next question

4.7.3.4 Deforestation

Question 03

November 2021 | 8464/B/2F | Original Q5

0 5 Increased carbon dioxide levels in the atmosphere contribute to climate change.

0 5 . 1 Give **one** way deforestation can increase carbon dioxide levels in the atmosphere.

[1 mark]

0 5 . 2 Name **one** other gas that contributes to climate change.

Do **not** refer to carbon dioxide in your answer.

[1 mark]

0 5 . 3 Meat is produced for humans to eat.

Give **two** ways the production of meat releases carbon dioxide.

[2 marks]

1

2

Question 5 continues on the next page

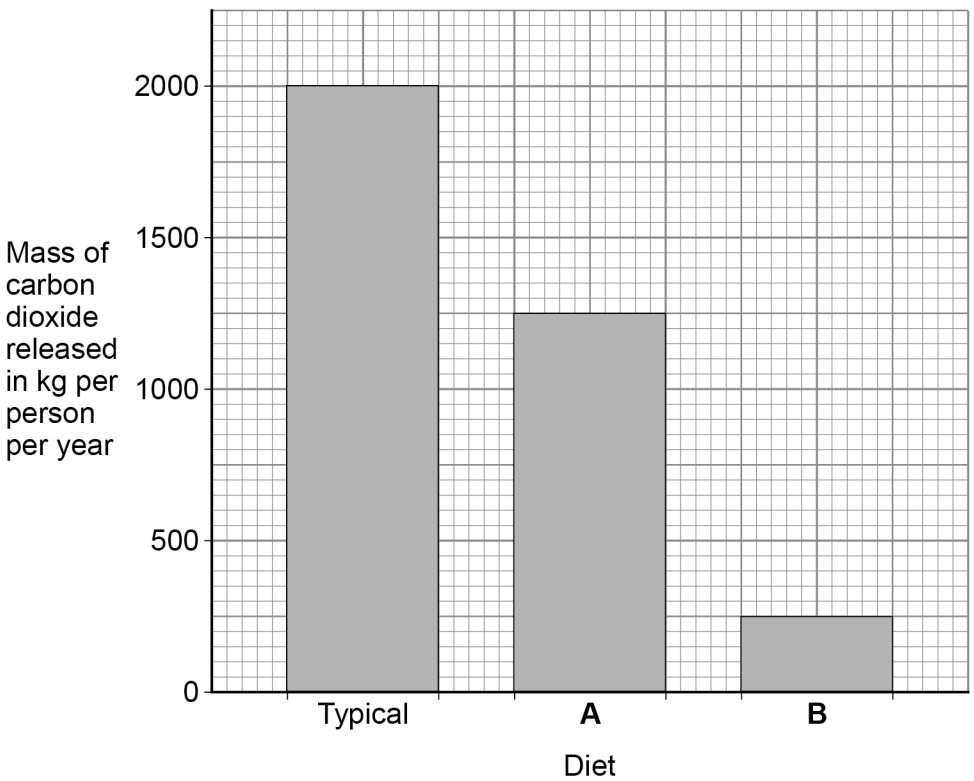
4.7.3.4 Deforestation

Question 03 · continued

0 5 . 4 The mass of carbon dioxide released during the production of food varies depending on the type of food.

Figure 4 shows the mass of carbon dioxide released as a result of three different diets.

Figure 4



4.7.3.4 Deforestation

Question 03 · continued

Compare the mass of carbon dioxide released as a result of the three diets shown in **Figure 4**.

Use data from **Figure 4** in your answer.

[4 marks]

8

4.7.3.4 Deforestation

Question 04

0 2 Farmers can increase crop yield by controlling the conditions that plants grow in.

0 2 . 1 Draw **one** line from each substance to how the substance increases crop yield.

[2 marks]

Substance	How the substance increases crop yield
	Adds mineral ions to the soil
Fertiliser	Decreases carbon dioxide concentration in the soil
	Increases oxygen concentration in the air
Herbicide	Kills weeds that compete with crops

0 2 . 2 **Figure 1** shows a food chain for a farmer's field.

Figure 1

Seeds → Mice → Owls

Which is the secondary consumer in the food chain?

[1 mark]

Tick (✓) **one** box.

- Seeds ☐
- Mice ☐
- Owls ☐

4.7.3.4 Deforestation

0 2 . 3 Bees are insects that live in hives.

The bees fly in and out of the hives.

Figure 2 shows a crop growing in a field.

The farmer has added bee hives to increase the number of bees in the field.

Figure 2



Increasing the number of bees and other insects increases crop yield.

Which are **two** ways that increasing the number of insects in an area will increase crop yield?

[2 marks]

Tick (✓) **two** boxes.

- Insects change the soil pH around the crop. ☐
- Insects eat leaves from the crop. ☐
- Insects eat pests on the crop. ☐
- Insects pollinate the crop. ☐
- Insects shelter in the crop. ☐

4.7.3.4 Deforestation

0 2 . 4 Some farmers increase the size of hedgerows between fields where crops grow.

Suggest **one** reason why.

[1 mark]

Peat comes from peat bogs.

0 2 . 5 Peat can be used to produce garden compost.

Table 1 compares peat compost with a sample of soil.

Table 1

	Mineral ion concentration	Speed at which water drains through
Peat compost	Low	Slow
Soil	High	Fast

Young plants have short roots.

Explain **one** advantage of growing young plants in peat compost instead of in soil.

[2 marks]

Question 2 continues on the next page

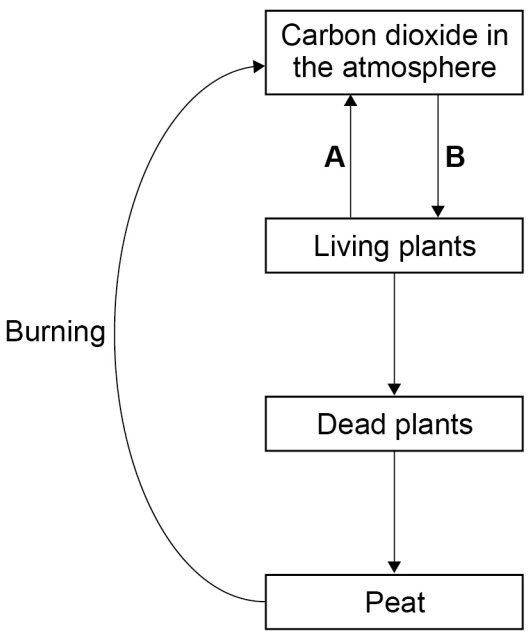
4.7.3.4 Deforestation

Question 04 · continued

Peat can also be burnt as fuel.

Figure 3 shows part of the carbon cycle.

Figure 3



0 2 . 6 Name process **A** and process **B**.

Choose answers from the box.

[2 marks]

condensation	**photosynthesis**	**respiration**	**transpiration**

Process **A** _____

Process **B** _____

4.7.3.4 Deforestation

Question 04 · continued

0 2 . 7 Peat contains carbon compounds.

Explain why burning peat contributes to climate change.

[2 marks]

0 2 . 8 Decay is an important process in the carbon cycle.

Which **two** types of organism cause decay?

[2 marks]

Tick (✓) **two** boxes.

- Algae ☐
- Animals ☐
- Bacteria ☐
- Fungi ☐
- Plants ☐

0 2 . 9 Deforestation affects the carbon cycle.

Give **one** use of the land after the land has been cleared by deforestation.

[1 mark]

15