



GEO.PH7 Tropical Rainforests: Causes and Impacts of Deforestation

AQA 8035 · Calculators not allowed · about 50 minutes

Total Marks

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Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Show all your working.

- 1** State where the Amazon tropical rainforest is located, naming the country and the continent.

(Total for Question 1 is 1 mark)

- 2** Describe how subsistence farming causes deforestation in the Amazon region, naming the agricultural practice involved.

(Total for Question 2 is 2 marks)

- 3** Describe how commercial cattle ranching leads to loss of rainforest in the Amazon, including the typical land use change.

(Total for Question 3 is 2 marks)

- 4** Describe how soya agribusiness contributes to deforestation in the Amazon, mentioning commercial farming change.

(Total for Question 4 is 2 marks)

- 5 Describe the difference between selective logging and clear-felling as causes of deforestation in Amazonian forests.

(Total for Question 5 is 2 marks)

- 6 Describe how new roads such as the Trans-Amazonian Highway cause further deforestation beyond their own footprint.

(Total for Question 6 is 2 marks)

- 7 Describe how mineral extraction operations contribute to deforestation in the Amazon, naming one typical mineral or resource.

(Total for Question 7 is 2 marks)

- 8 Describe how hydroelectric schemes and dams can lead to deforestation in the Amazon, giving one named effect on land use.

(Total for Question 8 is 2 marks)

- 9 Describe how population growth and settlement expansion contribute to Amazon deforestation, giving one local example of land converted.

(Total for Question 9 is 2 marks)

- 10** Table 1 gives illustrative Amazon deforestation rates by decade for a practice exercise. Use this data to answer parts a and b.

Table 1, Amazon illustrative deforestation area per decade (thousand hectares):

1970s: 4000

1980s: 7000

1990s: 10000

2000s: 8500

2010s: 6000

a) Describe the pattern shown by the rates of deforestation in the Amazon across the decades in Table 1. (3 marks)

b) Suggest one reason for the decrease in deforestation between the 1990s and the 2010s. (1 mark)

(a) Describe the pattern shown by the rates of deforestation in the Amazon across the decades in Table 1. (3)

(b) Suggest one reason for the decrease in deforestation between the 1990s and the 2010s in the Amazon. (1)

(Total for Question 10 is 4 marks)

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- 11** Give two economic benefits of deforestation in the Amazon and one economic limitation for local communities or the national economy.

(Total for Question 11 is 3 marks)

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- 12** Explain TWO impacts of deforestation on biodiversity in the Amazon rainforest, using specific effects.

(Total for Question 12 is 3 marks)

13 Explain how deforestation affects soil quality in the Amazon, naming one process involved.

(Total for Question 13 is 2 marks)

14 Explain one impact of deforestation on indigenous groups in the Amazon, giving a named type of impact.

(Total for Question 14 is 2 marks)

15 Use the Amazon rainforest in Brazil as the named example in your answer. Explain the impacts of deforestation in a tropical rainforest you have studied, referring to economic, environmental and social consequences.

Explain the impacts of deforestation in the Amazon rainforest in Brazil.

(Total for Question 15 is 6 marks)

Mark scheme · GEO.PH7 Tropical Rainforests: Causes and Impacts of Deforestation

Question 1

- **B1** Brazil, South America, oe
- **Answer: The Amazon rainforest is located mainly in Brazil, in South America.**

Question 2

- **B1** clearing small areas of forest for crops or small-scale cattle, oe
- **B1** slash-and-burn agriculture is often used, which removes vegetation and reduces forest cover, oe
- **Answer: Small areas of forest are cleared for crops or small-scale cattle rearing, typically using slash-and-burn agriculture which removes vegetation and reduces forest cover.**

Question 3

- **B1** large areas of forest are cleared to create pasture for cattle, oe
- **B1** this is often done commercially to supply meat for domestic and international markets, increasing deforestation, oe
- **Answer: Large areas of forest are cleared to create pasture for cattle; this commercial ranching supplies meat for domestic and export markets and so increases deforestation.**

Question 4

- **B1** forest is cleared to create large-scale soya fields for export and animal feed, oe
- **B1** mechanised agribusiness replaces forest and small farms, increasing the area deforested, oe
- **Answer: Forest is cleared for large-scale soya fields used for export and animal feed; mechanised agribusiness replaces forest and small farms, increasing deforested area.**

Question 5

- **B1** selective logging removes only certain valuable trees, leaving much forest standing, oe
- **B1** clear-felling removes all trees from an area, causing complete loss of forest cover, oe
- **Answer: Selective logging removes certain valuable trees while leaving much forest, whereas clear-felling removes all trees from an area, causing complete loss of forest cover.**

Question 6

- **B1** roads open access to remote forest, allowing loggers, farmers and settlers to reach and clear land, oe
- **B1** they lead to settlement and further smallholder or commercial clearing along the road corridor, increasing deforestation, oe
- **Answer: Roads open access to remote forest for loggers, farmers and settlers, and lead to settlement and further clearing along the corridor, increasing deforestation beyond the road itself.**

Question 7

- **B1** forest is cleared for mines, access roads and worker camps, oe
- **B1** example linked detail, e.g. gold mining or bauxite extraction causes local and downstream environmental damage, oe
- **Answer: Forest is cleared for mines, access roads and worker camps; for example gold mining or bauxite extraction causes local forest loss and downstream environmental damage.**

Question 8

- **B1** building dams floods large areas of forest to create reservoirs, removing trees and habitat, oe
- **B1** construction also requires roads and worker settlements, causing additional clearance, oe
- **Answer: Building dams floods large areas of forest to create reservoirs, removing trees and habitat, and construction requires roads and settlements that cause additional clearance.**

Question 9

- **B1** growing rural and urban populations need land for housing and agriculture, so forest is cleared for settlements, oe
- **B1** example linked detail, e.g. riverbank villages or new farmsteads replace forest, oe
- **Answer: Growing rural and urban populations need land for housing and agriculture, so forest is cleared for settlements; for example riverbank villages or new farmsteads often replace forest.**

Question 10

- (a) **B1** deforestation rose from the 1970s to a peak in the 1990s, oe
- (a) **B1** values: 4,000 -> 7,000 -> 10,000 thousand hectares, oe
- (a) **B1** after the 1990s rates fell in the 2000s and 2010s to 8,500 then 6,000, showing a decline, oe
- (a) **Answer: Deforestation rates rose from the 1970s to a peak in the 1990s (4,000 -> 7,000 -> 10,000 thousand hectares) and then fell in the 2000s and 2010s to 8,500 and 6,000 thousand hectares respectively.**
- (b) **B1** government policies and enforcement reduced clearing, e.g. creation of protected areas or improved enforcement against illegal logging, oe
- (b) **Answer: Stronger government policies and enforcement reduced clearing, for example through creating protected areas and cracking down on illegal logging.**

Question 11

- **B1** benefit 1, e.g. income from timber sales or export earnings, oe
- **B1** benefit 2, e.g. jobs created in agriculture, ranching, mining or construction, oe
- **B1** limitation, e.g. short-term gains can harm long-term sustainability, e.g. soil degradation reduces future agricultural productivity, oe
- **Answer: Benefits include income from timber sales and export earnings, and jobs created in agriculture, ranching, mining and construction. A limitation is that these gains can be short term, because soil degradation and loss of forest services reduce future agricultural productivity and sustainability.**

Question 12

- **B1** impact 1, e.g. habitat loss reduces numbers of species and can cause local extinctions, oe
- **B1** linked detail for impact 1, e.g. specialist species that rely on intact forest are particularly vulnerable, oe
- **B1** impact 2, e.g. fragmentation isolates populations, reducing genetic diversity and making species more vulnerable to disease or environmental change, oe
- **Answer: Habitat loss from clearing reduces numbers of species and can cause local extinctions, especially of specialist species that rely on intact forest; fragmentation isolates populations, reducing genetic diversity and making species more vulnerable to disease or environmental change.**

Question 13

- **B1** removal of tree cover exposes soil to heavy rain and erosion, oe
- **B1** nutrient leaching and loss of the thin topsoil layer reduces fertility, oe
- **Answer: Removing tree cover exposes soil to heavy rain and erosion, and nutrients are leached away so the thin topsoil layer is lost, reducing soil fertility.**

Question 14

- **B1** loss of land and resources reduces ability to practise traditional livelihoods, oe
- **B1** this can cause social disruption, displacement and loss of cultural practices, oe
- **Answer: Loss of land and resources reduces the ability of indigenous people to practise traditional livelihoods, causing social disruption, displacement and loss of cultural practices.**

Question 15

- **Level 3** (5-6): A detailed explanation that uses specific reference to the Amazon in Brazil, covering economic, environmental and social impacts with developed examples and clear links between deforestation processes and consequences, leading to an overall judgement or synthesis.
- **Level 2** (3-4): A clear explanation that covers at least two types of impact (economic, environmental or social) with some specific reference to the Amazon, but with less development or fewer linked examples.
- **Level 1** (1-2): Simple statements about the impacts of deforestation with limited or no reference to the named Amazon case and little development.
- **Indicative content:**
 - Economic impacts: short-term gains from timber sales, cattle ranching and soya exports that create income and jobs, but risk of long-term decline in productivity due to soil degradation and loss of ecosystem services such as pollination and water regulation.
 - Environmental impacts: loss of biodiversity and habitat leading to local extinctions and fragmentation; increased soil erosion and nutrient leaching reducing fertility; the Amazon as a carbon store is weakened so deforestation releases carbon and reduces carbon sequestration, contributing to climate change.
 - Social impacts: indigenous and local communities lose land and resources, face displacement and cultural loss, and may suffer conflicts over land; health and livelihoods can be affected by pollution from mining and by changes in local climate and water availability.
 - Links and judgement: explain how processes such as clear-felling, road building and dam reservoirs drive these impacts, and weigh short-term economic benefits against long-term environmental damage and social costs when reaching a conclusion about overall impact.