

Environmental systems and societies
Standard level
Paper 1

Friday 5 May 2017 (afternoon)

Candidate session number

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1 hour

Instructions to candidates

- Write your session number in the boxes above.
- Do not open this examination paper until instructed to do so.
- Answer all questions. Refer to the resource booklet which accompanies this question paper.
- Answers must be written within the answer boxes provided.
- A calculator is required for this paper.
- The maximum mark for this examination paper is **[35 marks]**.



Answer **all** questions. Answers must be written within the answer boxes provided.

The resource booklet provides information on Brazil. Use the resource booklet and your own studies to answer the following.

1. List **two** biomes found in Brazil. [1]

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2. (a) **Figure 3(b)** shows biodiversity data for the Atlantic Rainforest and Cerrado region. Identify **two** factors that may have led to these differences in biodiversity. [2]

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- (b) Identify **two** factors that make regions such as Cerrado and Atlantic Rainforest important for conservation. [2]

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3. With reference to the species listed in **Figure 4**, identify **two** factors that may have contributed to their status given on the IUCN Red List. [2]

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4. With reference to the images in **Figure 4**, justify your choice of **one** animal as the most suitable to promote conservation.

[2]

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5. (a) Using data from **Figure 5(a)**, calculate the natural increase rate for Brazil in 2015.

[1]

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(b) Identify **one** reason why the natural increase rate, calculated in part (a), is different from the actual growth rate of the population, which was 0.63% in 2015.

[1]

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6. From the shape of the age-gender pyramid in **Figure 5(b)**, suggest how the population in Brazil is likely to change in the next 30 years.

[3]

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7. Identify **two** environmental impacts of hydro-electricity generation in Brazil.

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8. With reference to **Figure 7(b)**, estimate the average annual increase in gross domestic product (GDP) between 1990 and 2012. [1]

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9. (a) Describe the relationship between harvested area and grain production as shown in **Figure 8**. [2]

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(b) With reference to **Figure 8**, outline **two** reasons for the relationship between the area used for grain production and the quantity of grain produced. [2]

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10. **Figures 9(a) and 9(b)** provide information about the production of ethanol from sugar as a biofuel.

(a) Explain how biofuel production can be used as a strategy to control greenhouse gas emissions in Brazil.

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(b) Outline **one** limitation for using biofuels as a strategy to control greenhouse gas emissions.

[2]

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11. With reference to **Figure 11(a)**, suggest what conclusions can be drawn regarding the sustainability of the Brazilian population over the period shown.

[2]

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12. The survey data, shown in **Figures 12(a) and 12(b)**, represents the values of the Brazilian people in respect of global warming, the environment and the economy.

With reference to the information in the resource booklet, to what extent have these values been demonstrated during the recent development of Brazil?

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