Human Influences on Ecosystems

Question Paper 6

Level	IGCSE
Subject	Biology
Exam Board	CIE
Topic	Human Influences on Ecosystems
Paper Type	(Extended) Theory Paper
Booklet	Question Paper 6

Time Allowed: **58 minutes**

Score: **/48**

Percentage: **/100**

1 In South America, forests have been cut down to provide land for cattle grazing and for growing crops, such as soya beans.

Fig. 6.1 shows an area before deforestation and after the planting of soya. Occasionally small areas of forest are left if the land cannot support agriculture.

Fig. 6.1

(a) Suggest the disadvantages of removing the forest from all but small areas of land.

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(b) Much of the soya is used to feed farm animals rather than to make foods that humans can eat.

Explain the advantages of using soya as food for humans rather than for farm animals.

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(c) Much of the cleared forest in South America is used as land for cattle grazing.

The clearing of forest and keeping large numbers of cattle have severe effects on the environment, especially the atmosphere.

Outline the effects of forest clearance and cattle farming on the atmosphere.

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(d) Yields from crops grown on soils like those in Fig. 6.1 are likely to decrease over time.

State reasons for the likely decrease in yields.

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(e) Forest products are used in the manufacture of paper.

Explain the environmental **advantages** of recycling paper.

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[Total: 13]

2 The red slender loris, *Loris tardigradus*, is a nocturnal mammal that feeds at night on flowers, fruit and a variety of small animals. It is found in forest ecosystems in South Asia.

Fig. 3.1 shows a red slender loris.

Fig. 3.1

(a) Explain the meaning of the term *ecosystem*.

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(b) State three ways in which mammals, such as the red slender loris, differ from other groups of vertebrates.

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(c) The large eyes of the red slender loris show that it is well adapted for a nocturnal way of life.

Suggest other features that the animal is likely to have that are adaptations to being active at night.

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Two species of slender loris are found in Sri Lanka, the grey slender loris, *L. lydekkerianus*, and *L. tardigradus*.

The International Union for Conservation of Nature describes the red slender loris as endangered. Horton Plains National Park in Sri Lanka is one of the few places where *L. tardigrad* is found.

(d) Discuss why areas of land, such as the Horton Plains National Park, must be conserved.

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(e) State how scientists could show that two populations of slender loris belong to the same species or to two different species.

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[Total: 12]

3 **(a** Explain why it is important to recycle paper rather than burn it.

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When paper is recycled printing ink has to be removed.

Printing ink contains lipid-based compounds. The ink is removed by making the paper into a pulp and mixing it with lipase for several hours.

Scientists in India discovered that the marine bacterium, *Vibrio alginolyticus*, produces lipase. They carried out an investigation to find out whether using *V. alginolyticus* to remove ink from paper pulp was as effective as mixing it with a solution of lipase.

(b) The bacteria were found to be more effective at removing the ink from the paper pulp than using the solution of lipase.

Suggest why.

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(c) The scientists also investigated the effect of temperature on the ability of the bacteria to remove ink from paper pulp. They found that bacteria kept at high temperatures did not remove ink from the paper pulp.

Explain why.

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[Total: 8]

4 Table 5.1 shows some information about air pollution.

Table 5.1

pollutant	source of air pollutant	effect of pollutant on the environment
…….	combustion of fossil fuels	increased greenhouse effect and global warming
methane	…… ……	increased greenhouse effect and global warming
sulfur dioxide	combustion of high sulfur fuels	acid rain
nitrogen oxides	fertilisers	rain

(a) Complete Table 5.1 by writing answers in the spaces indicated. [2]

(b) Explain how the increased greenhouse effect is thought to lead to global warming.

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(c) Fig. 5.1 shows changes in the emissions of sulfur dioxide in Europe between 1880 and 2004.

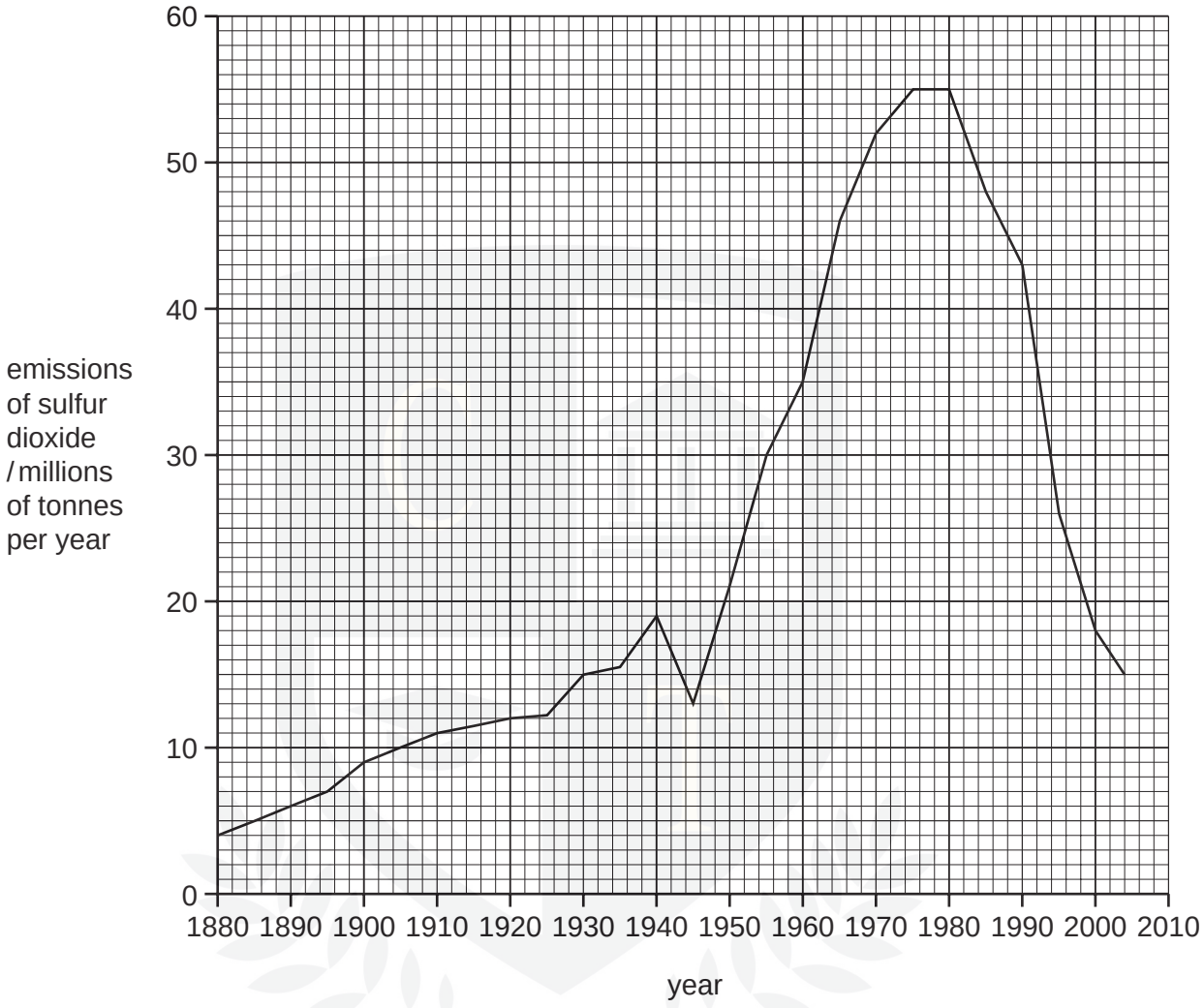

Fig. 5.1

(i) Use the information in Fig. 5.1 to describe the changes in the emissions of sulfur dioxide in Europe between 1880 and 2004.

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(ii) Describe the effects of acid rain on the environment.

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(iii) Outline the methods that have been used to reduce the emissions of sulfur dioxide.

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[Total: 15]