Cambridge International **AS Level**

Cambridge International Examinations
Cambridge International Advanced Subsidiary Level

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

ENVIRONMENTAL MANAGEMENT **8291/11**

Paper 1 Lithosphere and Atmosphere **May/June 2014**

1 hour 30 minutes

Additional Materials: Answer Booklet/Paper

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.
Write in dark blue or black pen.
You may use an HB pencil for any diagrams or graphs.
Do not use staples, paper clips, glue or correction fluid.
DO **NOT** WRITE IN ANY BARCODES.

Electronic calculators may be used.
You may lose marks if you do not show your working or if you do not use appropriate units.

Section A
Answer **all** questions.
Write your answers in the spaces provided on the question paper.

Section B
Answer **one** question from this section.
Answer the question on the separate answer paper provided.

At the end of the examination,
1. fasten all separate answer paper securely to the question paper;
2. enter the question number from Section B in the grid opposite.

	For Examiner's Use
Section A	
1	
2	
Section B	
Total	

This document consists of **11** printed pages and **1** blank page.

CAMBRIDGE International Examinations

Section A

Answer **all** questions in this section.

Write your answers in the spaces provided.

1 **(a)** Fig. 1.1 shows how temperature in the atmosphere changes between 0 and 80 km.

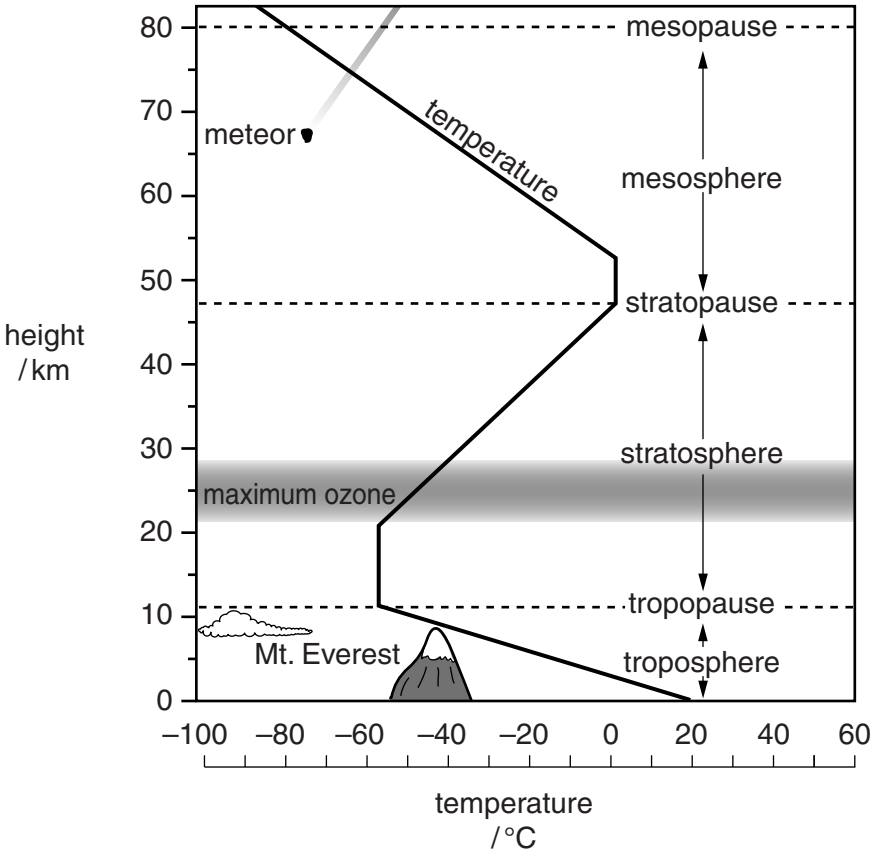

Fig. 1.1

(i) Using the information in Fig. 1.1, state by how much temperature falls between the Earth's surface and the tropopause.

..... [1]

(ii) Explain why high air temperatures in Fig. 1.1 are found close to the Earth's surface.

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..... [2]

(iii) Suggest why the clouds shown in Fig. 1.1 are normally prevented from rising above the tropopause.

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..... [2]

(iv) Describe **one** characteristic of the troposphere.

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..... [2]

(b) The ozone layer shown in Fig. 1.1 occurs between 20 and 30 km above the Earth's surface.

(i) Briefly explain how the ozone layer protects life on Earth.

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(ii) Explain how human activity is believed to be responsible for ozone depletion.

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..... [4]

(iii) Fig. 1.2 shows changes to the shape and size of the hole in the ozone layer over the Antarctic between 1979 and 2011.

Fig. 1.3 shows the amount by which ozone has depleted over the Antarctic, between 1979 and 2011.

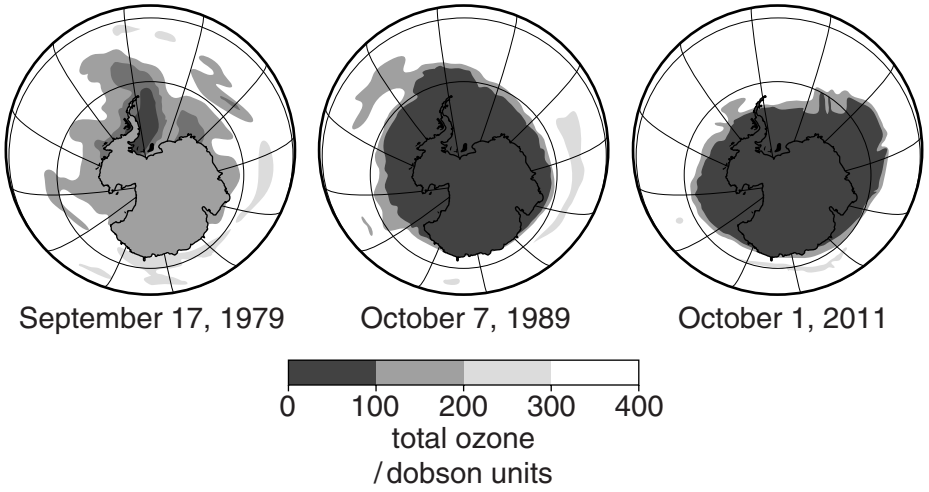

Fig. 1.2

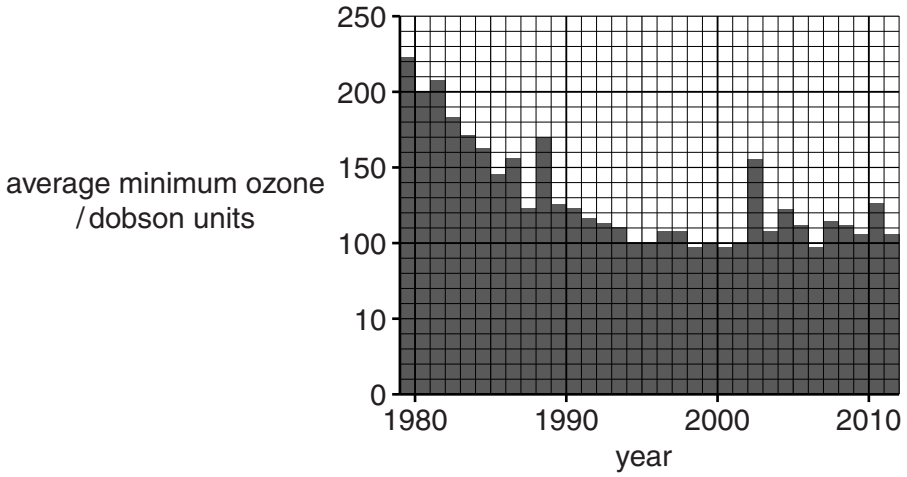

Fig. 1.3

To what extent does the data in Fig. 1.2 and Fig. 1.3 support the view that international agreements to reduce damage to the ozone layer have been successful?

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..... [6]

[Total: 20]

2 **(a)** Fig. 2.1 shows a cross section through the Earth, with some of the plates labelled.

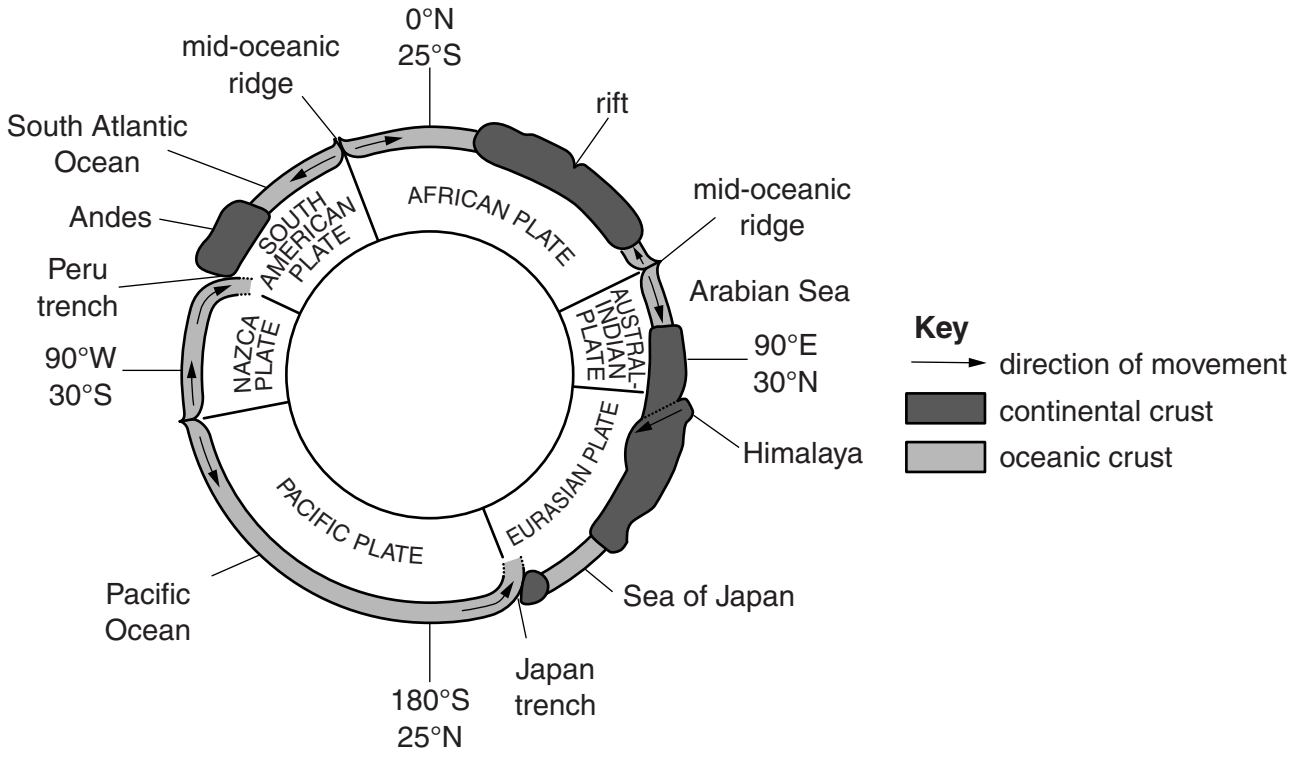

Fig. 2.1

(i) Using the letters **A**, **B**, **C** and **D**, write on Fig. 2.1 where you would expect to find the following:

subduction	**A**
ocean floor spreading	**B**
convection current	**C**
young fold mountains	**D**

[4]

(ii) With reference to Fig. 2.1, describe the processes that are responsible for the plates moving.

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..... [4]

(b) Fig. 2.2 shows a cross section through the plate boundary where the North American and Caribbean plates meet.

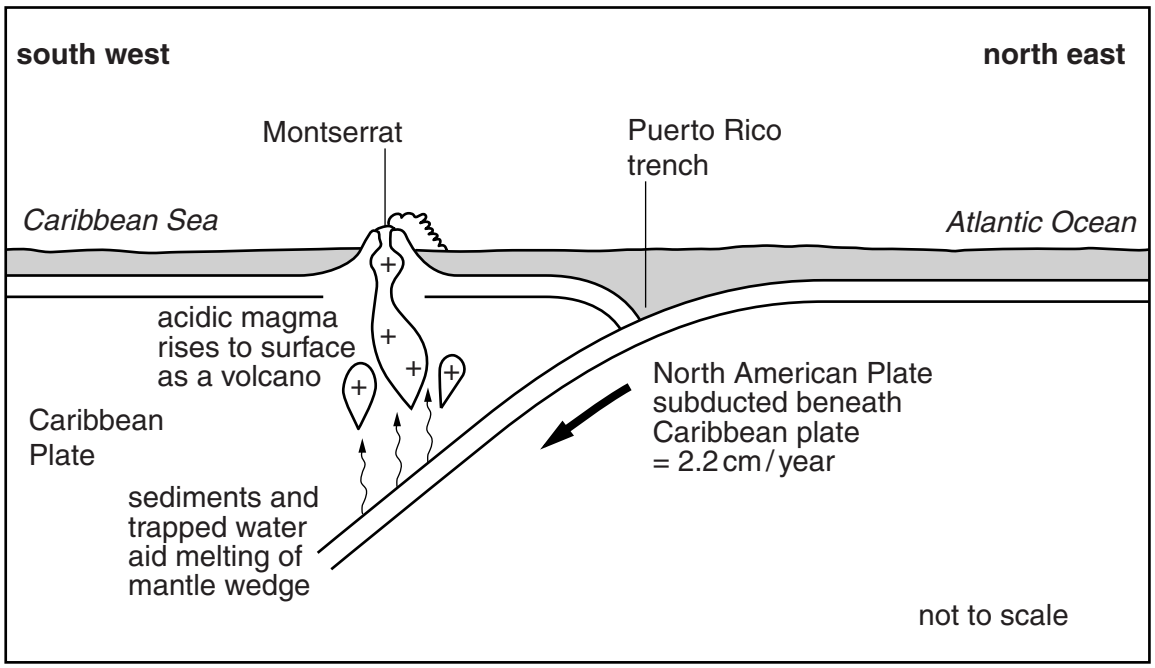

Fig. 2.2

Key

+ magma

rising molten rock

(i) Outline the tectonic processes responsible for creating the Puerto Rico ocean trench shown in Fig. 2.2.

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..... [2]

(ii) Describe the type of volcanic eruptions associated with the island of Montserrat shown in Fig. 2.2.

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(iii) Suggest the strategies that might be adopted to reduce the impact of eruptions such as that shown in Fig. 2.2.

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..... [5]

[Total: 20]

Section B

Answer **one** question from this section.

3 Fig. 3.1 shows the pattern of land use in a rapidly growing LEDC city.

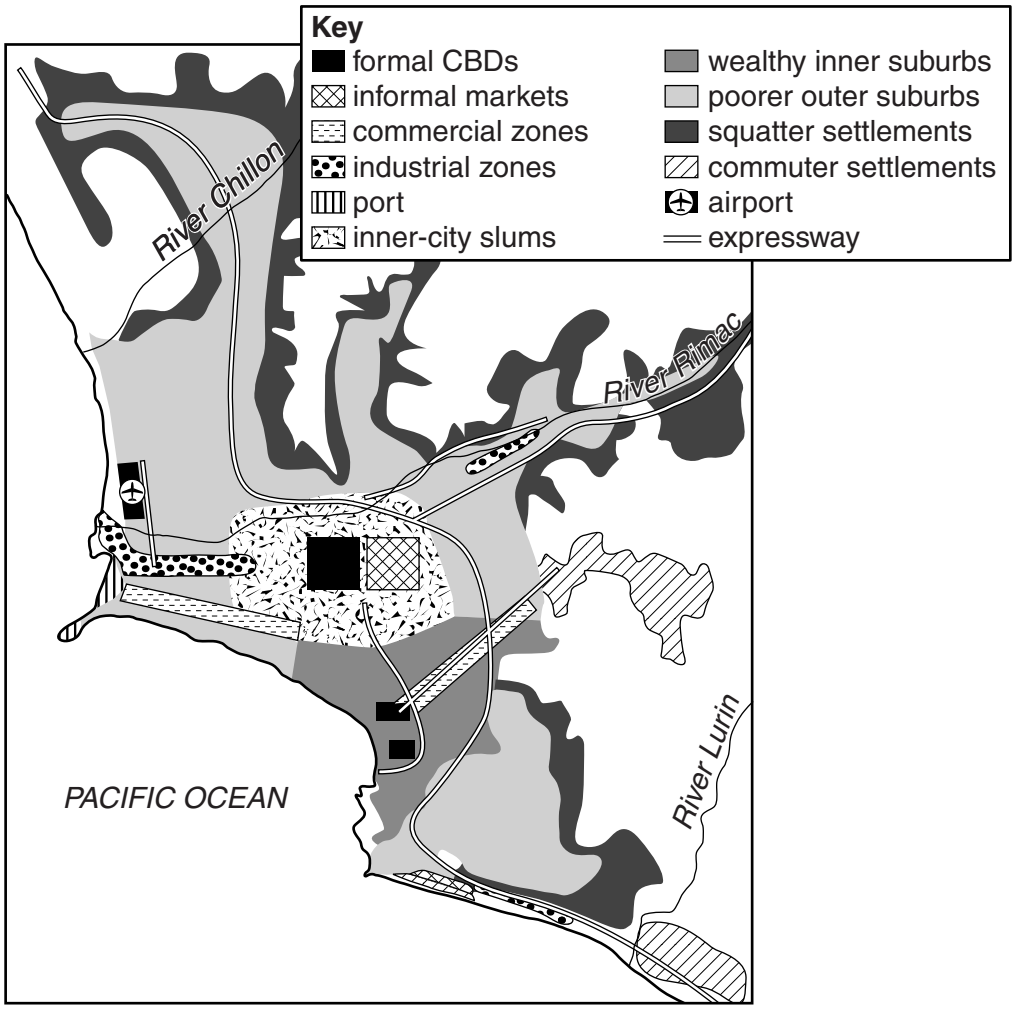

Fig. 3.1

(a) Describe the pattern of land use shown in Fig. 3.1. [10]

(b) With reference to examples with which you are familiar, assess the effects of urban growth on the city and the surrounding area. [30]

[Total: 40]

4 The city of Hong Kong has grown rapidly over the past 25 years. Fig. 4.1 shows the total hours of reduced visibility per year in Hong Kong as a result of air pollution between 1988 and 2009.

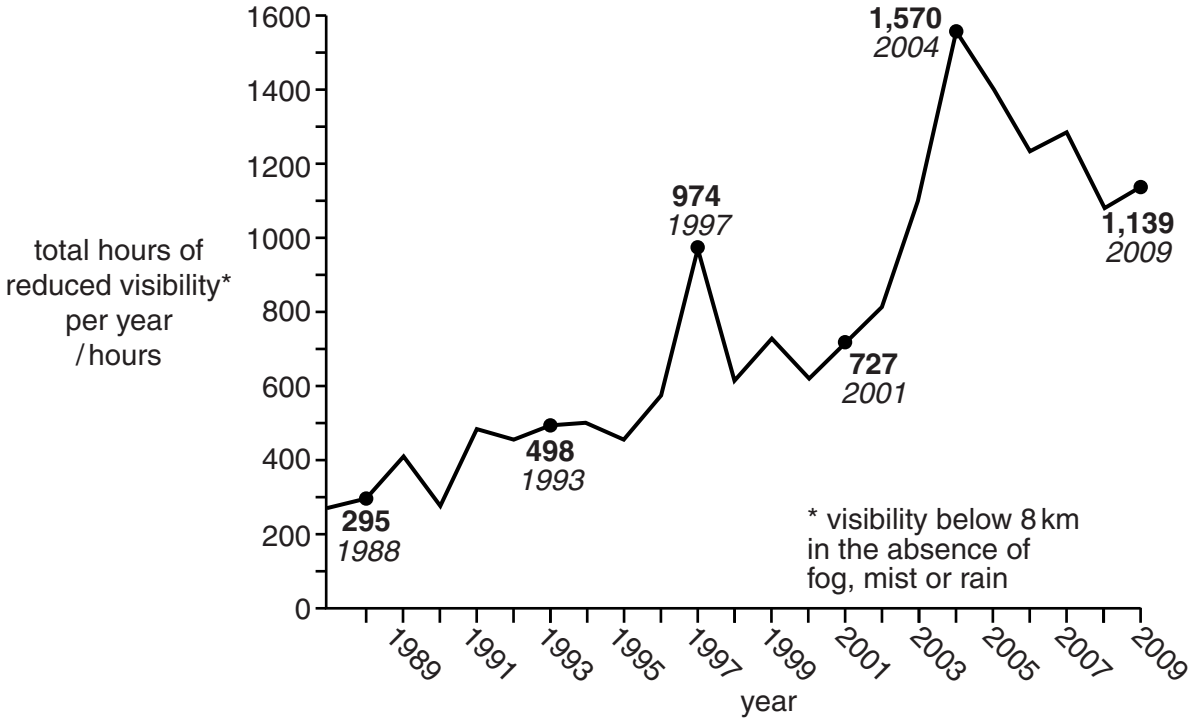

Fig. 4.1

(a) Describe the trend shown by Fig. 4.1 and outline **two** likely sources of air pollution in such a densely populated city. [10]

(b) With reference to examples from LEDCs or MEDCs with which you are familiar, assess the problems in controlling atmospheric pollution. [30]

[Total: 40]

5 Fig. 5.1 is an isoline map which shows anomalies in global air temperatures in January. The temperature anomaly at a particular place is the difference between the temperature of the place and the average temperature for that latitude.

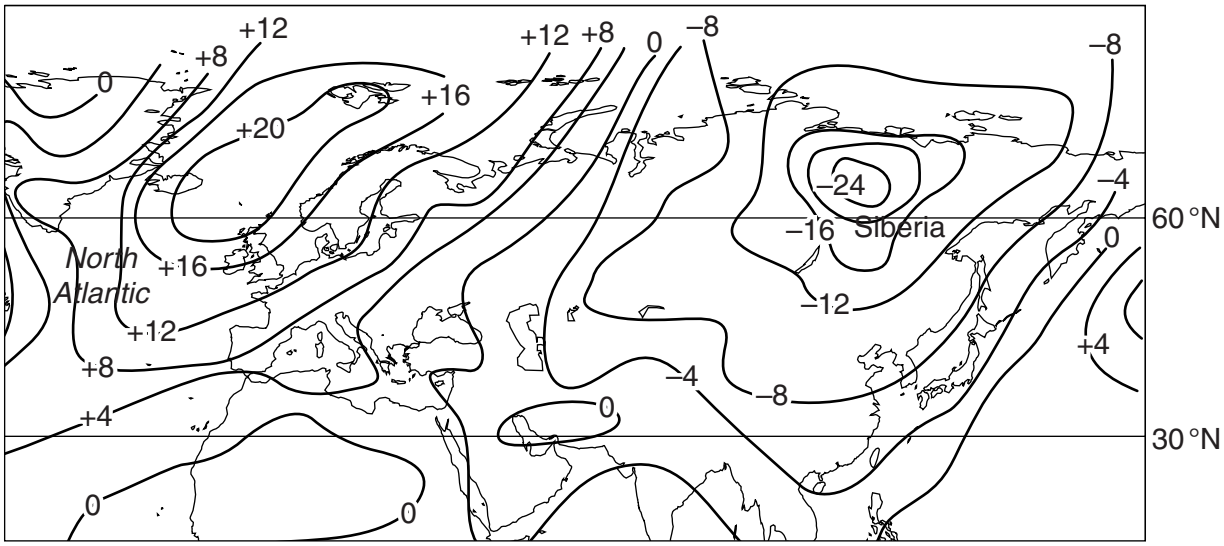

Fig. 5.1

(a) Suggest reasons for the high positive anomaly found in the North Atlantic compared with the high negative anomaly found at the same latitude in Siberia. [10]

(b) For **one** area with which you are familiar, describe and explain the likely impacts of global warming. Explain why it has been difficult to manage these issues on a global scale. [30]

[Total: 40]

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