



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
General Certificate of Education Advanced Subsidiary Level

CANDIDATE  
NAME

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**ENVIRONMENTAL MANAGEMENT**

**8291/12**

Paper 1 Lithosphere and Atmosphere

**May/June 2013**

**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 a soft pencil for any diagrams, graphs, tables or rough working.  
Do not use staples, paper clips, highlighters, glue or correction fluid.  
**DO NOT WRITE IN ANY BARCODES.**  
Electronic calculators may be used.

**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	
<b>Section A</b>	
<b>1</b>	
<b>2</b>	
<b>Section B</b>	
<b>Total</b>	

This document consists of **12** printed pages.

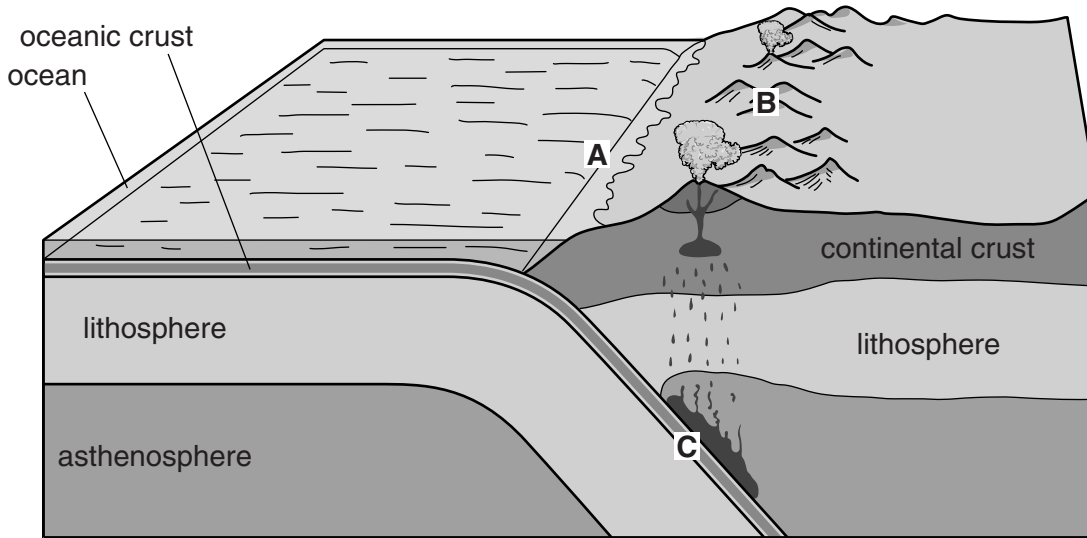


**Section A**

Answer **all** questions in this section.

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Use

- 1 (a) Fig. 1.1 shows the structure of the Earth's crust at an oceanic to continental plate boundary.



**Fig. 1.1**

- (i) Name the features that occur at **A** and **B**, and the process that occurs at **C**.

Feature **A** .....

Feature **B** .....

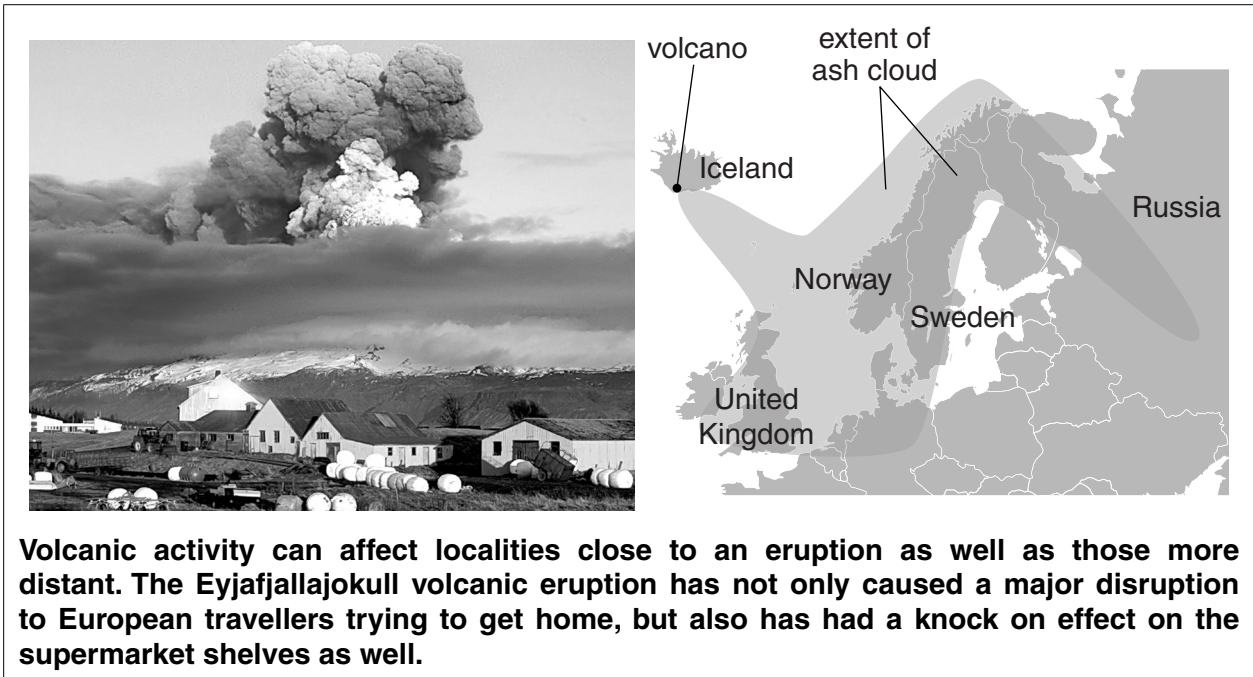
Process **C** ..... [3]

- (ii) Put **two** arrows onto Fig. 1.1 to show the direction of plate movement each side of the boundary. [2]



(b) Fig. 1.2 contains information about the eruption of Eyjafjallajokull in Iceland (March 2010).

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**Fig. 1.2**

Assess the environmental management issues and effects on people's lives, both local and distant, that would be associated with this volcanic eruption.

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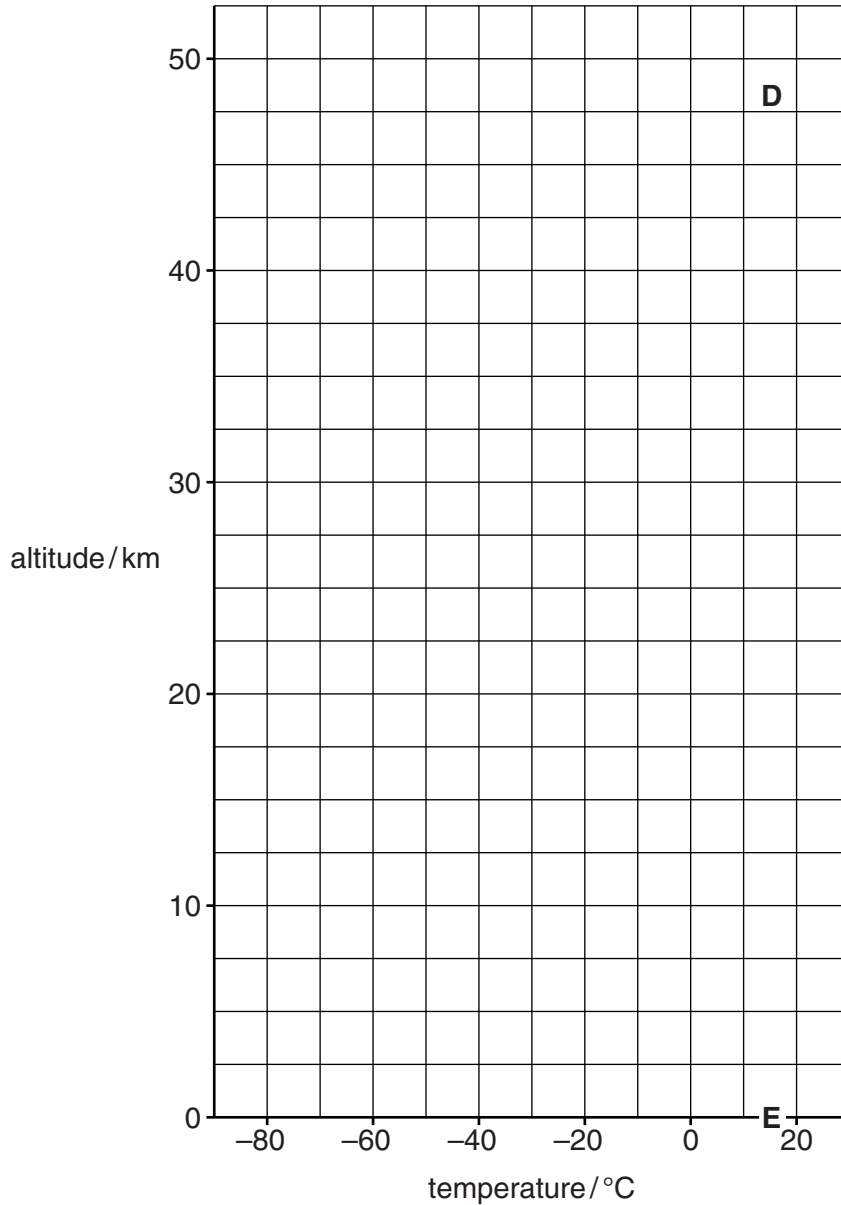
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..... [10]

[Total: 20]

- 2 (a) Fig. 2.1 is a grid that can be used to illustrate some aspects of the structure of the Earth's atmosphere.



**Fig. 2.1**

- (i) Draw a line to show the changes in temperature with altitude from 0 to 50 km between points **D** and **E** on Fig. 2.1. [4]
- (ii) Write the terms **troposphere** and **stratosphere** onto Fig. 2.1 at appropriate altitudes. Write your answers on Fig. 2.1. [1]
- (iii) In which level of the atmosphere does:
  - ozone depletion occur .....
  - global warming occur? .....[2]

(iv) Outline **two** functions of the helium-filled weather-research balloons that usually ascend to about 10 000 m.

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(ii) Explain why rainfall is frequent in area Y in Fig. 2.2.

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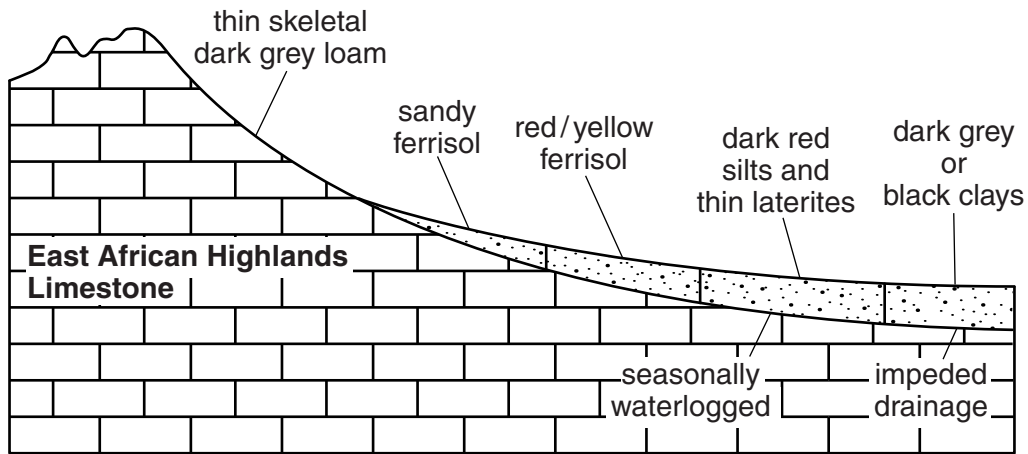
..... [4]

[Total: 20]

## Section B

Select **one** question from this section.

- 3 (a) Fig. 3.1 shows how soils underlain by limestone change from the top of a hill to a valley floor.



**Fig. 3.1**

Briefly explain how slope and drainage affect the development of the soils shown in Fig. 3.1. [10]

- (b) With reference to an area you have studied, assess the extent to which soil degradation is as much a product of natural causes as it is of human activity. For the area you have selected, assess one method that has been used to sustain soil quality. [30]

[Total: 40]

- 4 (a) Table 4.1 contains data on the level of importance people give to some environmental problems found in urban areas. The percentages are derived from a representative survey of the population in a LEDC urban area. Respondents were asked to state whether each of the environmental problems was: a major problem, a minor problem or not a problem.

Table 4.1

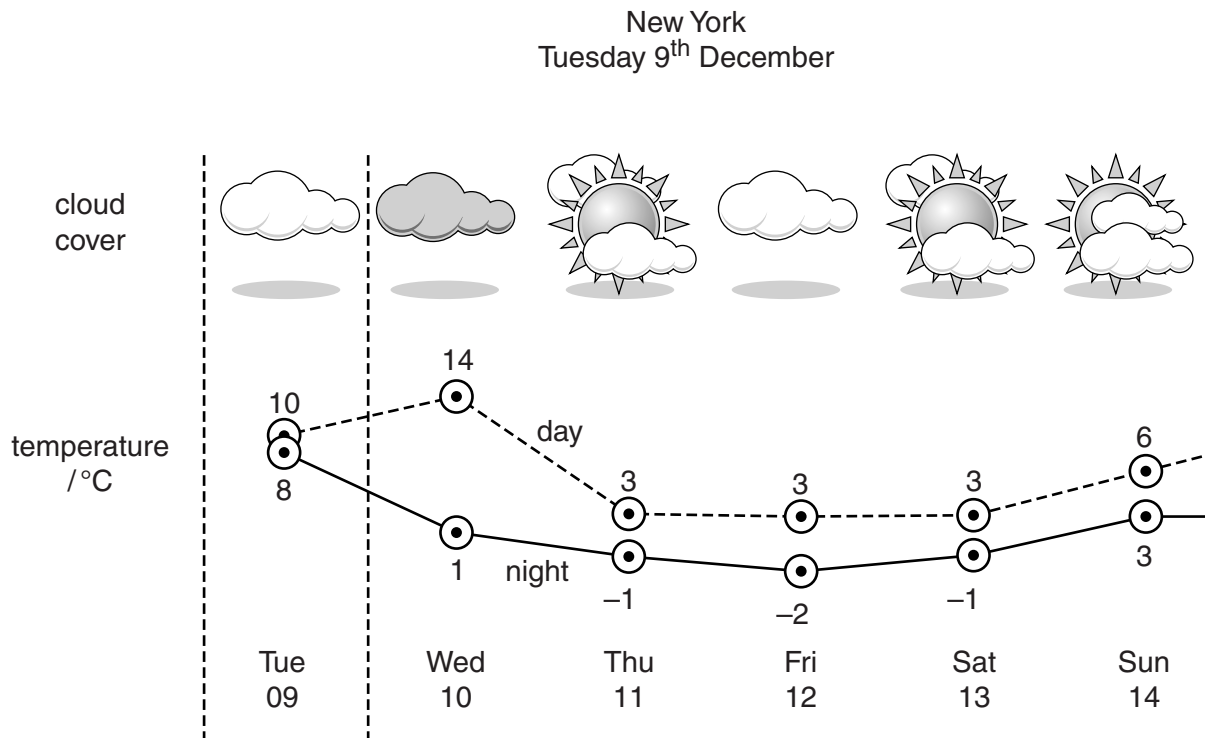
environmental problem	major problem	minor problem	not a problem
air pollution	80%	17%	3%
hazardous waste	74%	13%	13%
solid waste	70%	22%	8%
contamination of drinking water	69%	17%	14%
industrial pollution	68%	28%	4%
sewage disposal	65%	25%	10%
traffic jams	64%	34%	2%
inefficient use of energy	48%	42%	10%
noise pollution	38%	52%	10%

Briefly explain why the data given in Table 4.1 is more likely to be characteristic of people in a LEDC than of people in a MEDC. [10]

- (b) With reference to examples with which you are familiar, assess how effectively atmospheric pollution in urban areas can be kept to an acceptable healthy minimum. [30]

[Total: 40]

- 5 (a) Fig. 5.1 shows a 6 day weather forecast for the city of New York.



**Fig. 5.1**

Briefly describe the techniques that are used to make such weather forecasts. [10]

- (b) Describe and explain **two** ways in which human activity adversely affects weather on **either** a local **or** a regional scale. Assess the success of the measures that have been used to counter each of the adverse effects you have selected. [30]

[Total: 40]

Copyright Acknowledgements:

Question 1a Figure 1.1 © [www.platetectonics.com/book/page\\_5.asp](http://www.platetectonics.com/book/page_5.asp).

Question 1b Figure 1.2 Photograph © Associated Press / Brynjar Gauti.

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