Cambridge International **AS Level**

Cambridge International Examinations
Cambridge International Advanced Subsidiary Level

CANDIDATE NAME

CENTRE NUMBER | | | | | |

CANDIDATE NUMBER | | | | |

7557300682

ENVIRONMENTAL MANAGEMENT **8291/12**

Paper 1 Lithosphere and Atmosphere **October/November 2016**

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 in this section.
Write your answers in the spaces provided on the question paper.

Section B
Answer **one** question from this section.
Write your answers 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 **12** printed pages.

CAMBRIDGE International Examinations

Section A

Answer **all** questions in this section.

Write your answers in the spaces provided.

1 **(a)** Fig. 1.1 is a sketch of a weather map for south-west Europe on 10 May 2010.

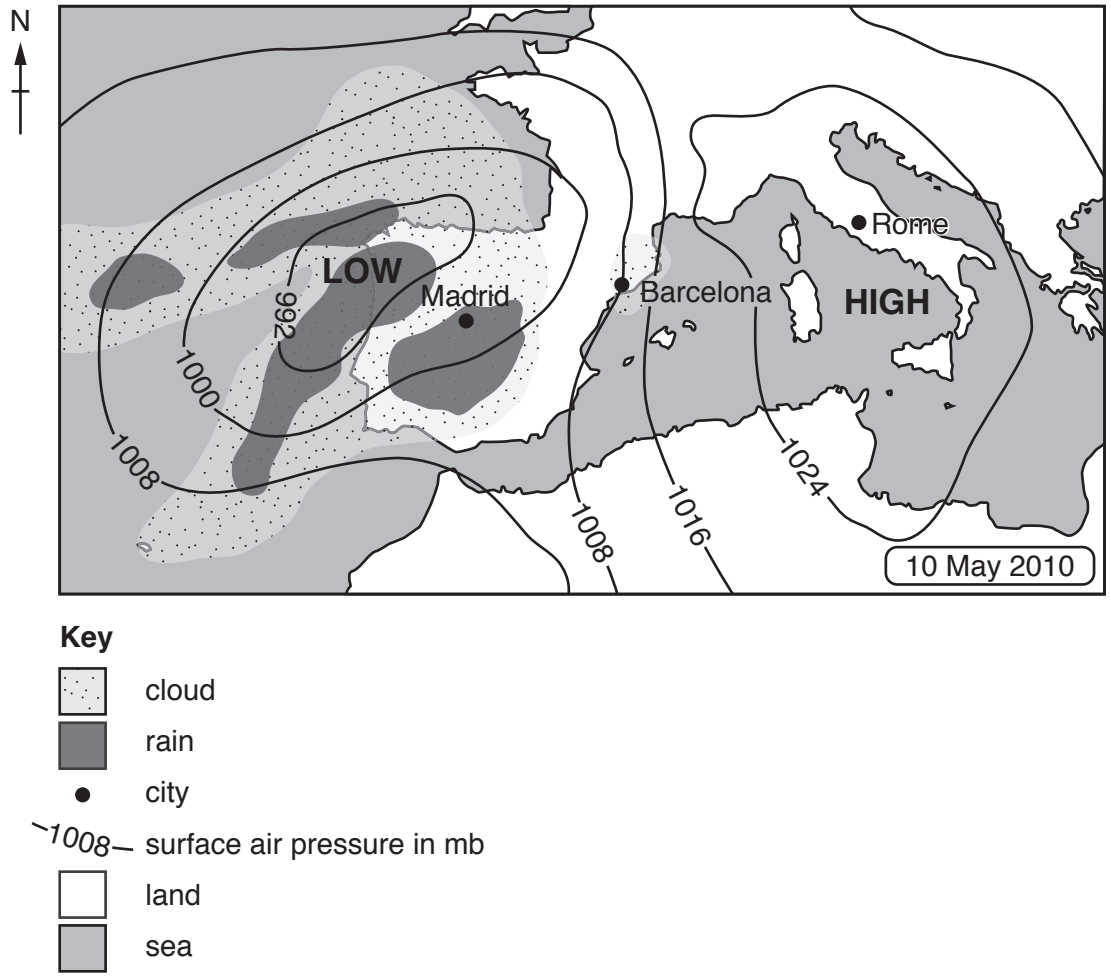


Fig. 1.1

(i) With reference to Fig. 1.1, state the surface air pressure at Barcelona.

..... mb [1]

(ii) Describe the pattern of air movement around the low pressure system (depression) in Fig. 1.1.

.....

.....

.....

.....[2]

(iii) Suggest **two** reasons for the large areas of cloud and rain over Madrid in Fig. 1.1.

.....

.....

.....

.....

.....

.....

.....

.....[4]

(iv) With reference to Fig. 1.1, complete Table 1.1 by placing a tick in the correct column to show where you would expect to find each weather condition on 10 May 2010.

Table 1.1

weather condition on 10 May 2010	Madrid	Barcelona	Rome
the highest maximum daytime temperature			
the greatest temperature range			
the highest precipitation total			
the highest wind speeds			

[4]

(v) If the area of low pressure shown in Fig. 1.1 moves eastward in the next 24 hours, state **three** changes in the weather that will be experienced at Barcelona.

.....

.....

.....

.....

.....

.....[3]

[Turn over

(b) Fig. 1.2 shows various methods forecasters use to collect information about the weather.

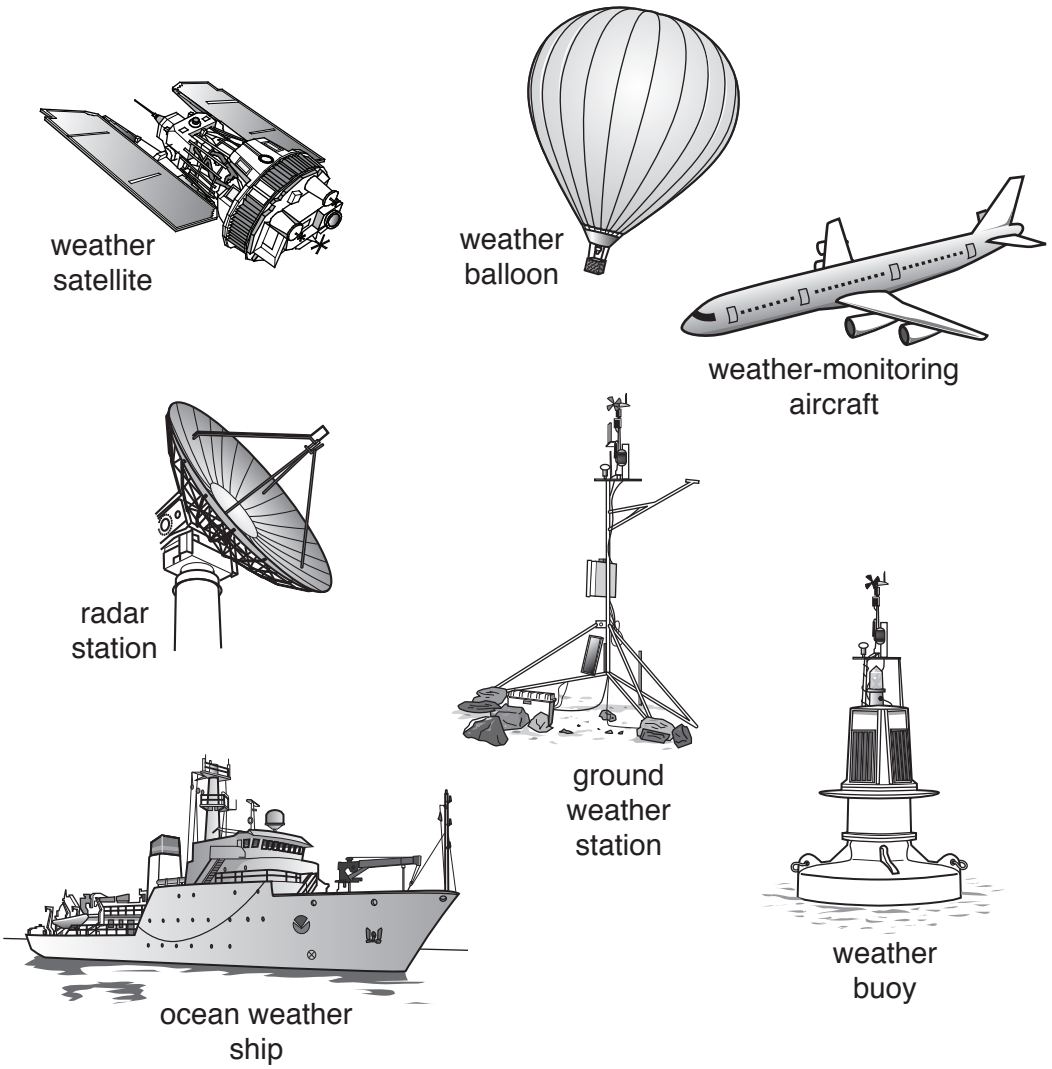


Fig. 1.2

Outline **two** methods forecasters use to collect information about the weather and explain how each contributes to the process of weather forecasting.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....[6]

[Total: 20]

2 **(a)** Fig. 2.1 is a diagram to show the internal structure of the Earth.

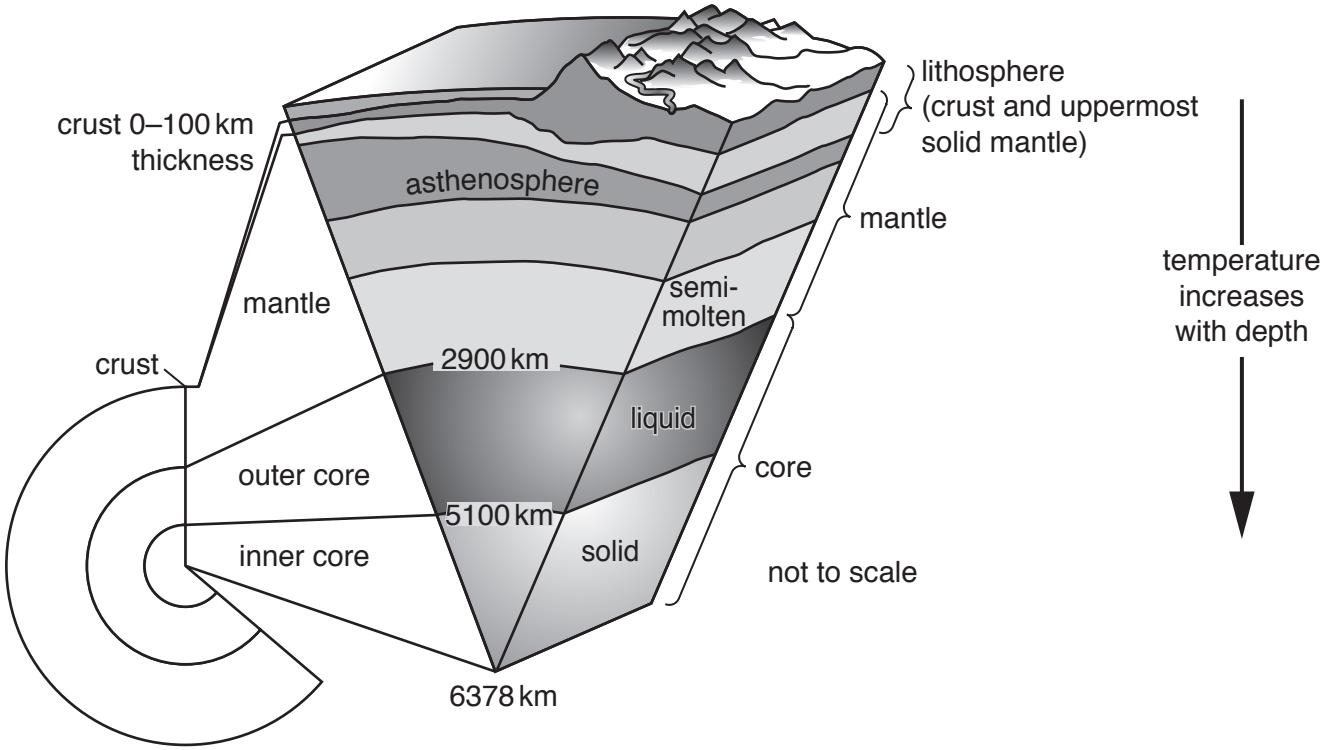


Fig. 2.1

(i) Using the information provided in Fig. 2.1, state **two** differences between the crust and the mantle.

.....

.....

.....

.....[2]

(ii) Describe the characteristics of the outer core.

.....

.....

.....

.....

.....

.....[3]

(iii) With reference to Fig. 2.1, explain how processes within the mantle are responsible for movements in the Earth's crust.

.....

.....

.....

.....

.....

.....[3]

(iv) Explain how seismic wave data can contribute to the understanding of the structure of the Earth.

.....

.....

.....

.....

.....

.....

.....

.....[4]

(b) Fig. 2.2 shows a section of the lithosphere and asthenosphere showing oceanic and continental crust.

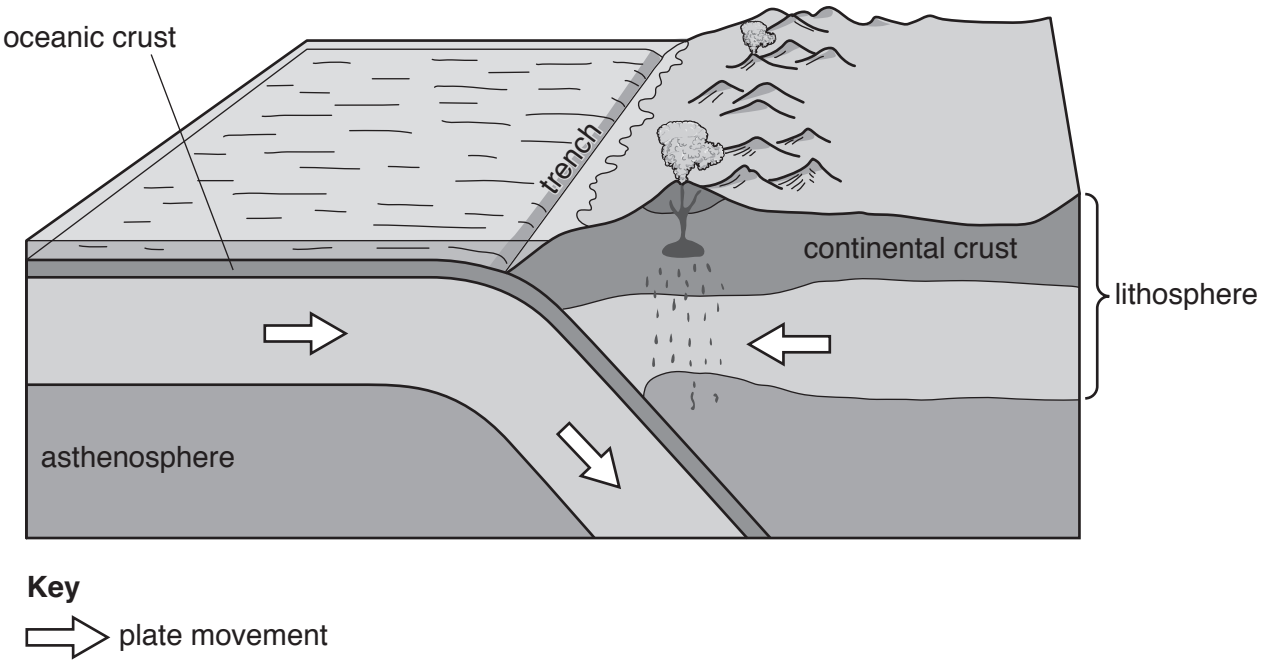


Fig. 2.2

(i) Describe the differences between oceanic and continental crust.

.....

.....

.....

.....

.....

.....[3]

(ii) Explain why the land between the coast and the mountains shown in Fig. 2.2 can be a hazardous environment for human habitation.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....[5]

[Total: 20]

Section B

Answer **one** question from this section.

Write your answers on the separate answer paper provided.

3 Fig. 3.1 is a map of London, an urban area in the United Kingdom, showing the distribution of atmospheric pollution.

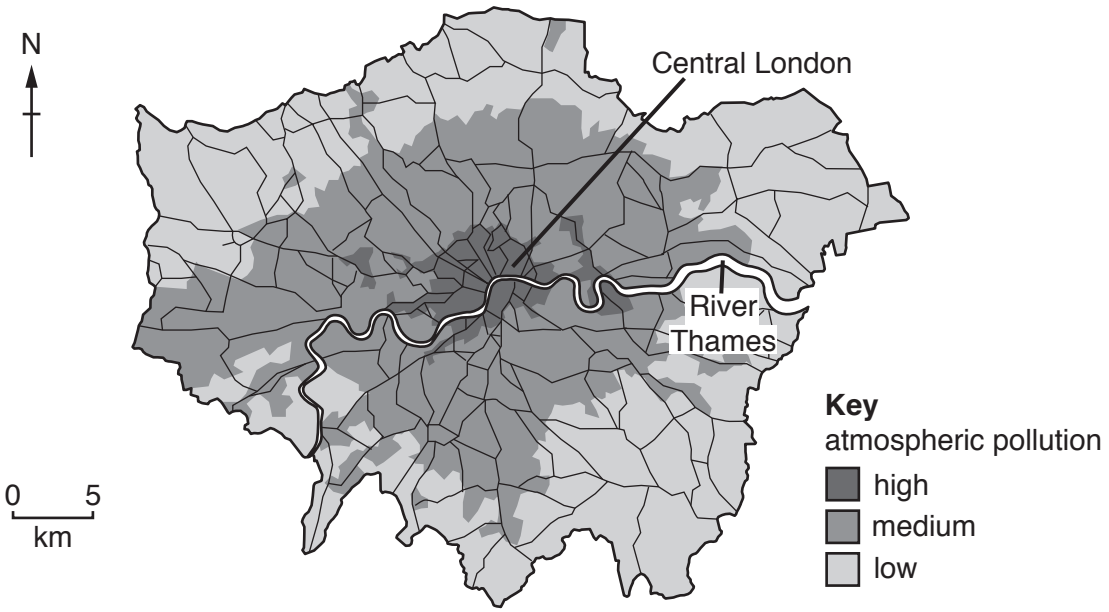


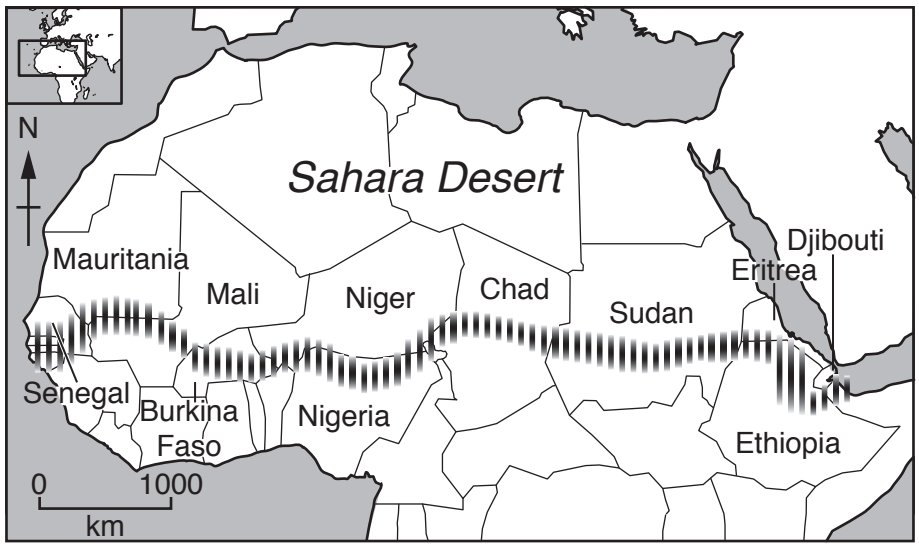
Fig. 3.1

(a) Describe the pattern of atmospheric pollution shown in Fig. 3.1. Suggest what factors might be responsible for producing this pattern. [10]

(b) At a global scale, atmospheric pollution is not restricted by national boundaries. Referring to examples, evaluate the view that problems of atmospheric pollution can only be solved by international agreement and cooperation. [30]

[Total: 40]

4 Fig. 4.1 shows the proposed location of a future 'Great Green Wall' of trees in Africa. One of the aims of this tree planting scheme, if adopted, is to reduce soil degradation in the countries bordering the Sahara Desert.



The 'Great Green Wall' of trees is intended to be 15 km wide, 7775 km long and to run through 11 countries.
It is hoped that the scheme will lead to an improvement in the quality of the soil.
The inhabitants of this semi-arid area depend on the land for grazing and crops.

Key

'Great Green Wall' of trees

land

sea

Fig. 4.1

(a) With reference to Fig. 4.1, explain how afforestation schemes can lead to an improvement in soil quality. [10]

(b) Using examples, discuss the view that the growing demand for food presents the greatest future threat to the world's soils. [30]

[Total: 40]

[Turn over

5 Fig. 5.1 is a chart showing the area of productive land required to support an individual person's needs in selected countries.

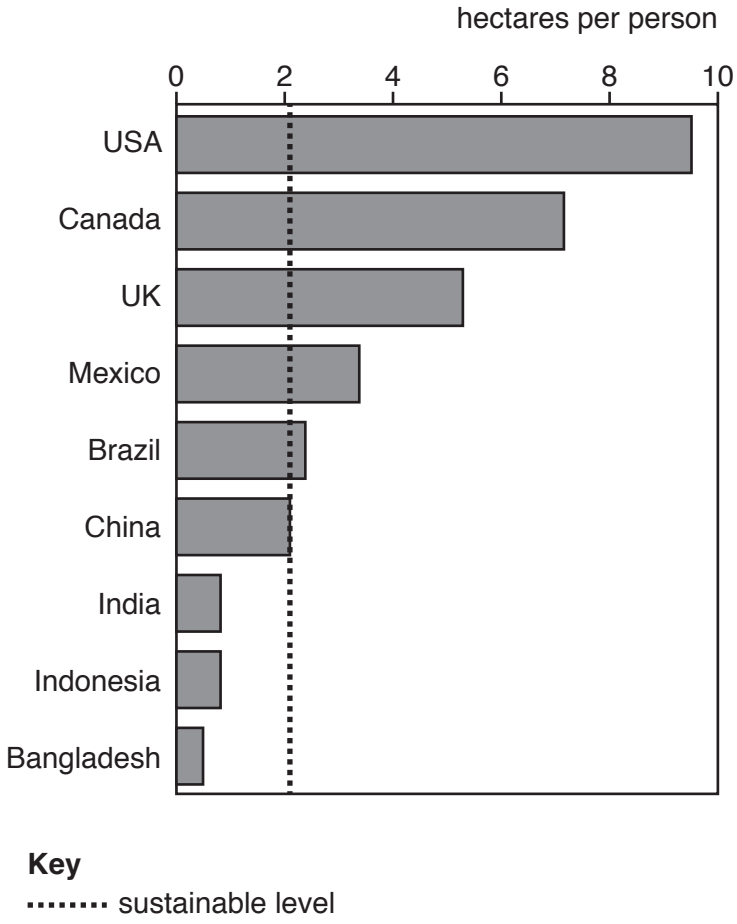


Fig. 5.1

(a) Describe the information shown in Fig. 5.1 and explain its implications. [10]

(b) With reference to examples, assess the extent to which a more sustainable management of the Earth's resources might be achieved. [30]

[Total: 40]