Cambridge International **AS Level**

Cambridge Assessment International Education
Cambridge International Advanced Subsidiary Level

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

ENVIRONMENTAL MANAGEMENT **8291/12**

Paper 1 Lithosphere and Atmosphere **May/June 2019**

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.

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

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

Cambridge Assessment International Education

Section A

Answer **all** questions in this section.

Write your answers in the spaces provided.

1 **(a)** Fig. 1.1 is a map of the Pacific Ocean, showing the location of some plate boundaries.

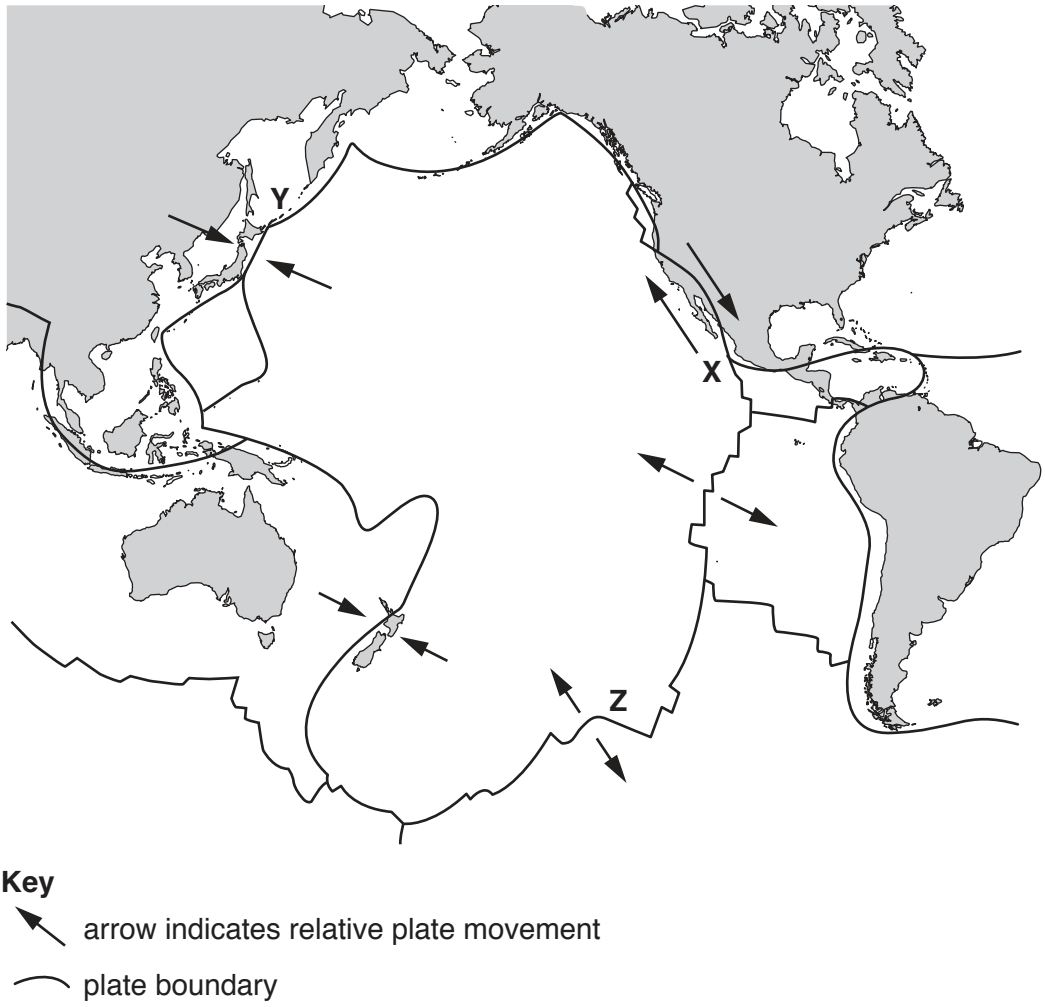

Fig. 1.1

(i) Complete the table to identify the type of plate boundary found at **X**, **Y** and **Z** in Fig. 1.1.

type of plate boundary	letter
constructive plate boundary	
destructive plate boundary	
conservative plate boundary	

[2]

(ii) With reference to Fig. 1.1, explain why earthquakes are likely to occur at **X**.

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(iii) Describe **two** hazards caused by earthquakes.

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(iv) Describe ways in which a building can be designed to withstand earthquakes.

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[Turn over

(v) Table 1.1 gives data relating to two earthquakes that occurred in different locations.

Table 1.1

	location **A**	location **B**
magnitude (moment magnitude scale)	6.3	6.6
number of deaths	161	26 271

With reference to Table 1.1, suggest possible reasons why these earthquakes of similar magnitude had very different impacts.

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(b) Fig. 1.2 is a diagram of a cross-section through the Earth, showing a simplified pattern of seismic wave paths from an earthquake epicentre.

P waves can travel through solids and liquids. They travel faster than S waves.

S waves can only travel through solids. They travel slower than P waves.

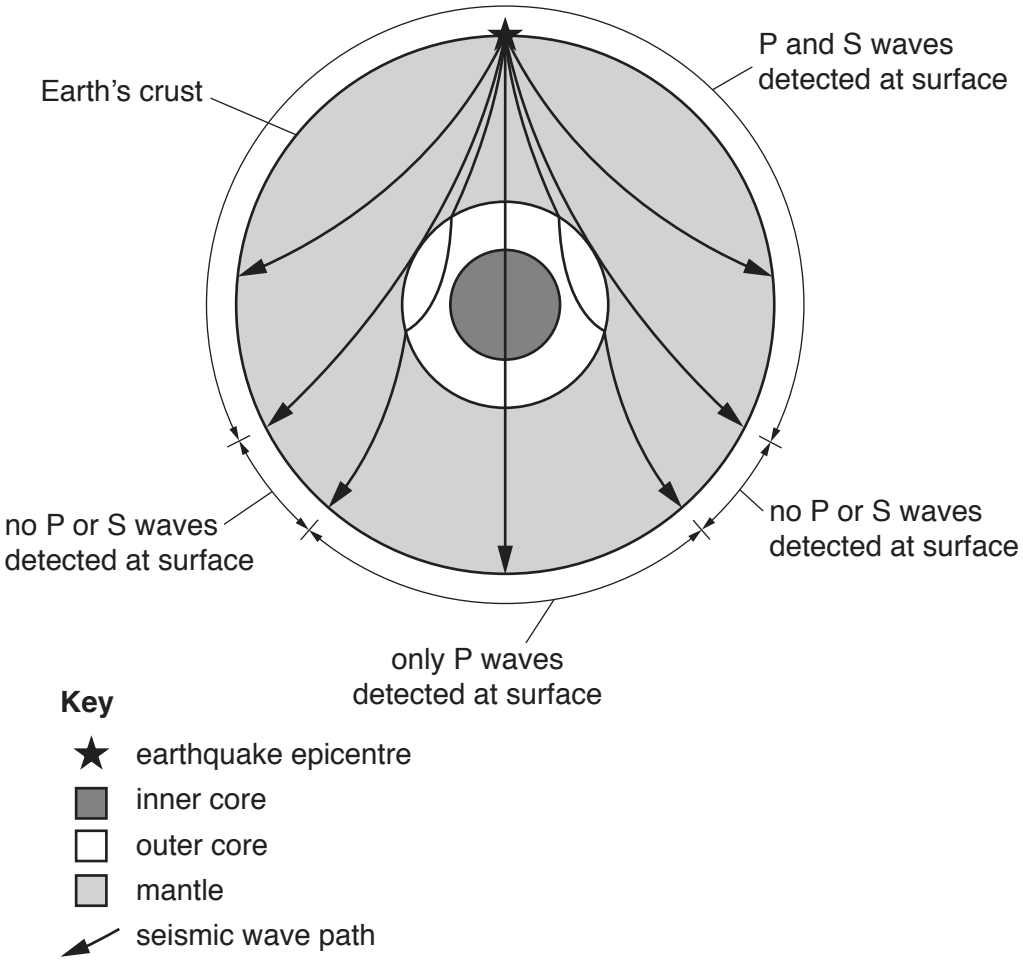

Fig. 1.2

With reference to Fig. 1.2 describe how the pattern of seismic waves provides scientists with evidence of the internal structure of the Earth.

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[Total: 20]

2 **(a)** Fig. 2.1 shows the pattern of air movement in the troposphere.

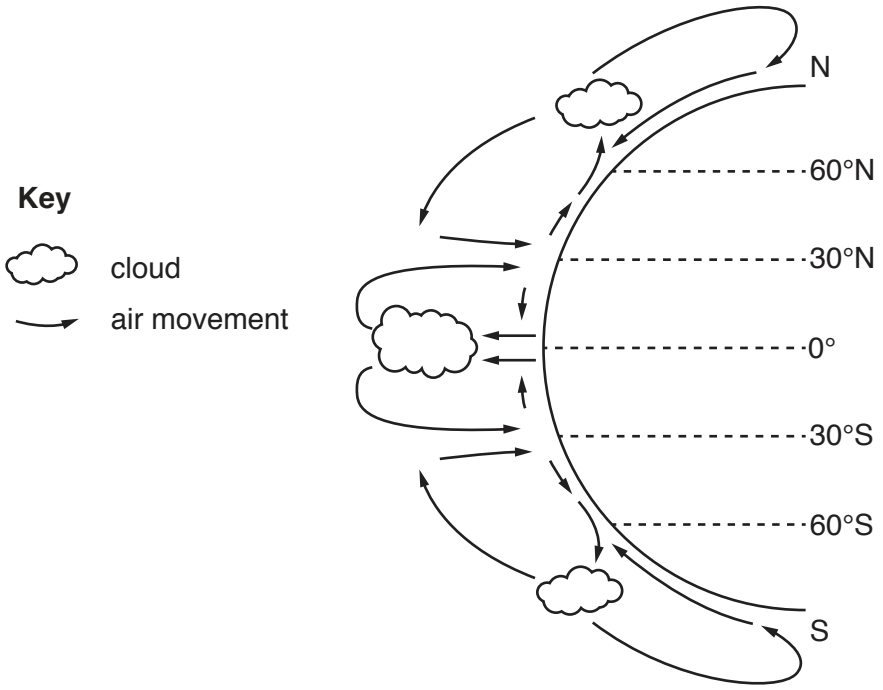

Fig. 2.1

(i) With reference to Fig. 2.1, complete the table to show whether there is high or low pressure found at each of the latitudes.

latitude	high or low pressure
60°N	
0°	
30°S	

[2]

(ii) Explain the air pressure at the equator.

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(b) Fig. 2.2 shows areas where tropical cyclones (hurricanes) form.

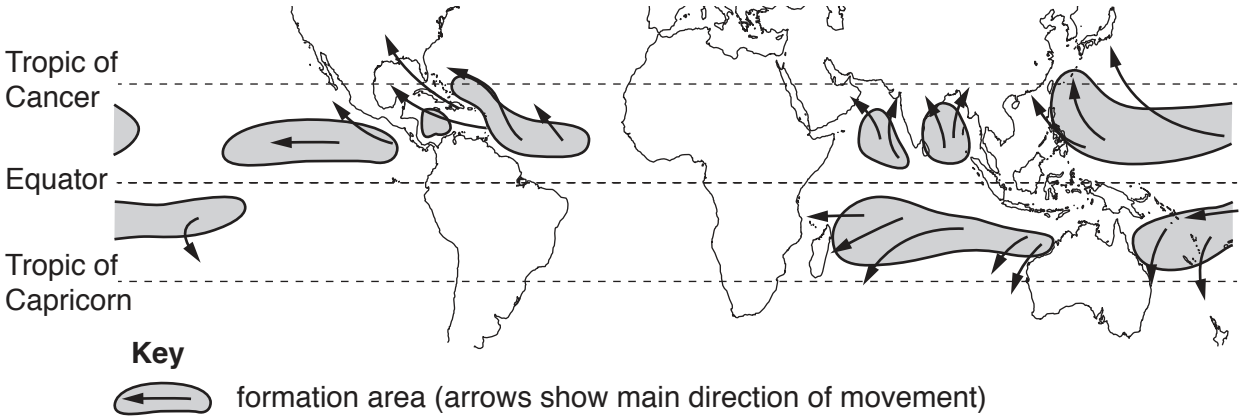

Fig. 2.2

(i) Define the term *tropical cyclone*.

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(ii) Use Fig. 2.2 to state **two** features of the global distribution of areas where tropical cyclones form.

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[2]

(iii) Explain why tropical cyclones form in these areas.

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(iv) Describe the characteristic weather associated with a tropical cyclone.

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(v) Describe the impacts that a tropical cyclone can have on a low-lying coastal settlement.

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[Total: 20]

Section B

Answer **one** question from this section.

3 Explosive volcanic eruptions can have a local and a global impact.

Fig. 3.1 is a diagram showing some effects of a large explosive volcano that has forced sulfur dioxide into the stratosphere.

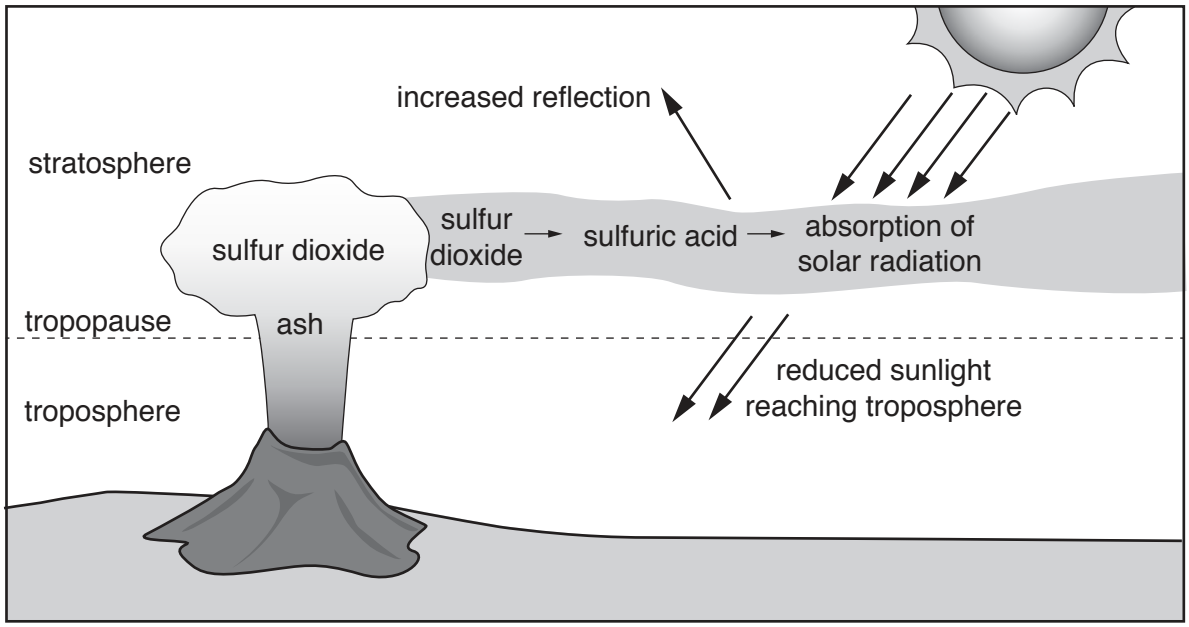


Fig. 3.1

(a) Using the information in Fig. 3.1, describe and explain the impact of explosive volcanic eruptions. [10]

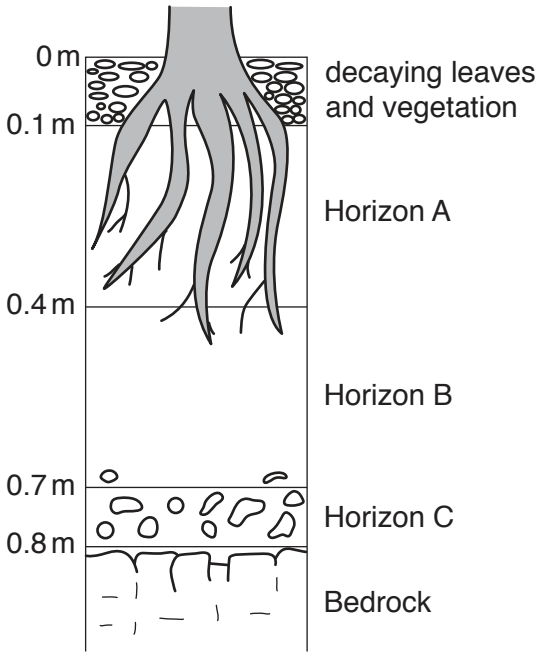
(b) Human activities also impact on the Earth's atmosphere.

Discuss whether urban pollution can be successfully managed to reduce its local and global impact. [30]

[Total: 40]

4 Fig. 4.1 shows two soil profiles from different locations.

Profile **X**: brown earth soil from temperate, deciduous woodland in England



Profile **Y**: rainforest soil from tropical rainforest in Indonesia

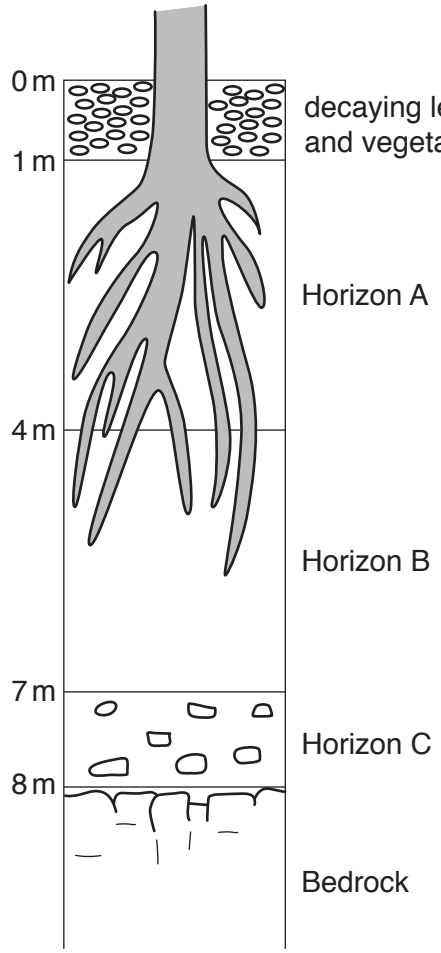


Fig. 4.1

(a) Describe and explain the differences between the two soil profiles shown in Fig. 4.1. [10]

(b) With reference to examples, explain why soil erosion occurs. Evaluate strategies that involve the sustainable use of soils for agriculture. [30]

[Total: 40]

5 Fig. 5.1 shows the ten year periods when countries recorded their most extreme temperatures and precipitation.

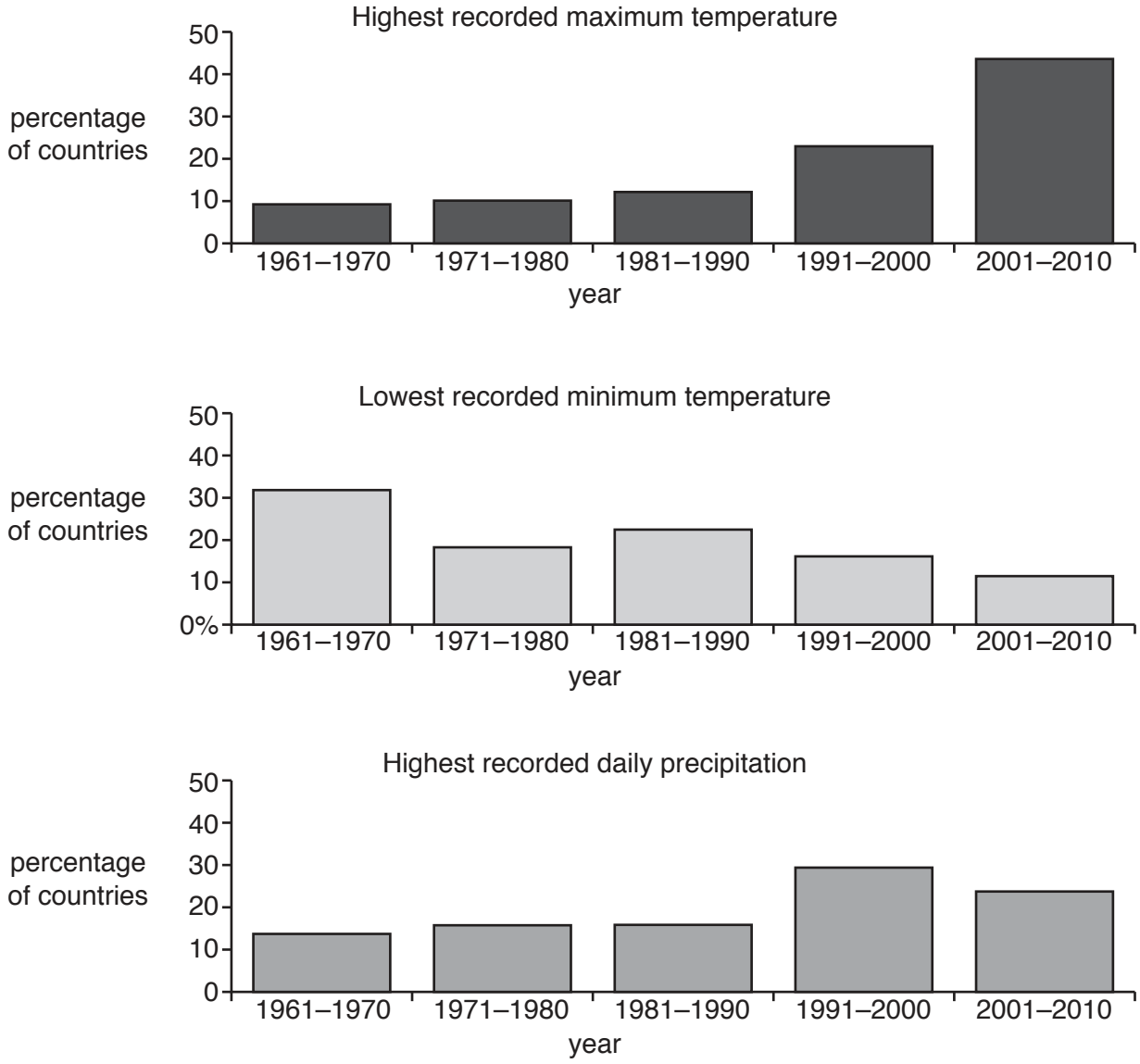


Fig. 5.1

(a) Compare and contrast the trends in changing climatic conditions shown in Fig. 5.1. [10]

(b) With reference to examples, assess the effectiveness of the ways governments can control atmospheric pollution to reduce their country's contribution to climatic change. [30]

[Total: 40]

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