Cambridge International **AS Level**

Cambridge International Examinations
Cambridge International Advanced Subsidiary Level

CANDIDATE NAME

CENTRE NUMBER | | | | | |

CANDIDATE NUMBER | | | | |

4062199827

ENVIRONMENTAL MANAGEMENT **8291/11**

Paper 1 Lithosphere and Atmosphere **May/June 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.
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 is a map showing evidence to support the idea that some land masses were once connected as part of the supercontinent of Pangaea.

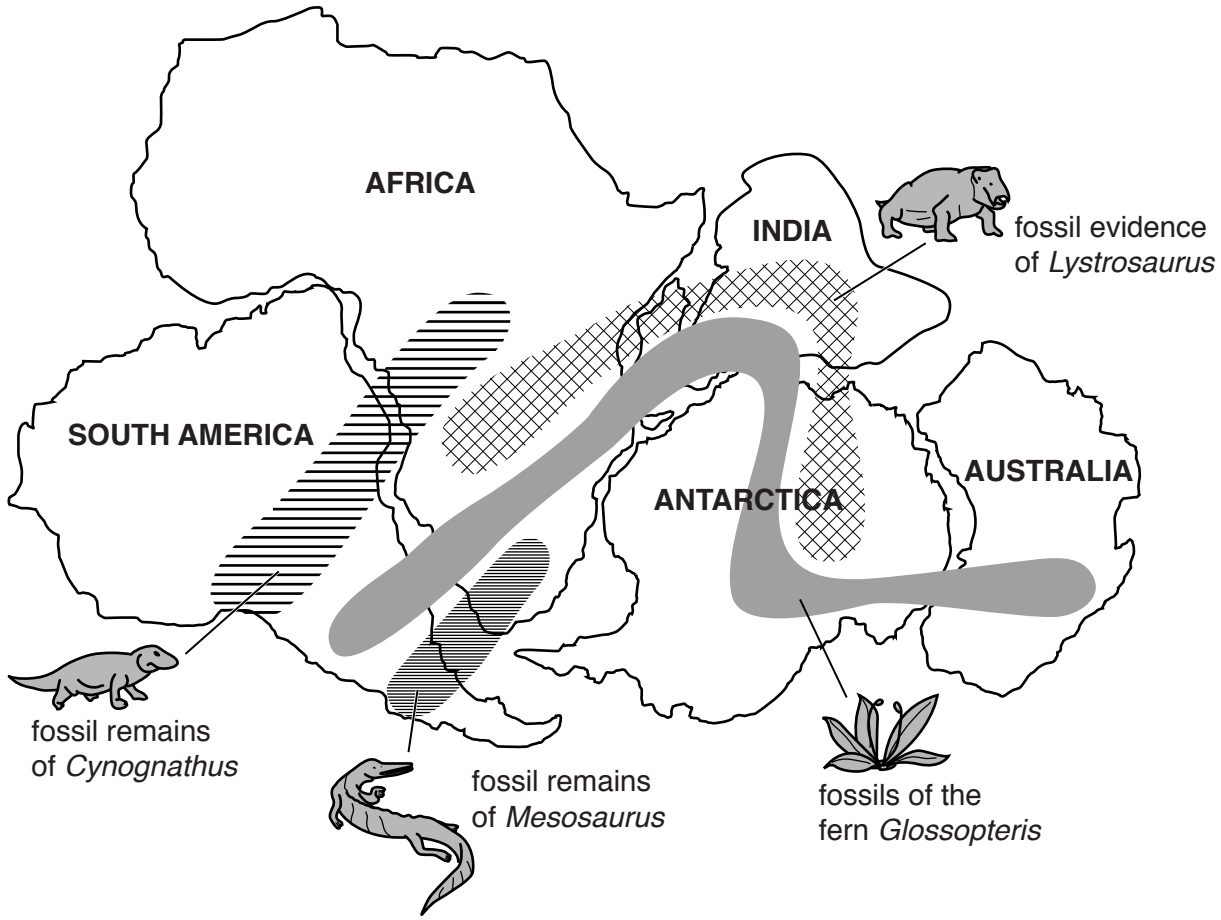

Fig. 1.1

(i) State the name of the fossil which can be found on every land mass shown in Fig. 1.1.

..... [1]

(ii) With reference to Fig. 1.1, describe **one** piece of evidence, other than from fossils, which suggests that these land masses were once joined.

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.....[2]

(iii) Describe the process by which the land masses shown in Fig. 1.1 would have moved apart over time.

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.....[4]

(iv) Suggest how an understanding of past plate movements might help geologists locate mineral resources today.

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.....[3]

(b) Fig. 1.2 shows land forms associated with ocean floor spreading, together with information about the magnetic properties of rocks.

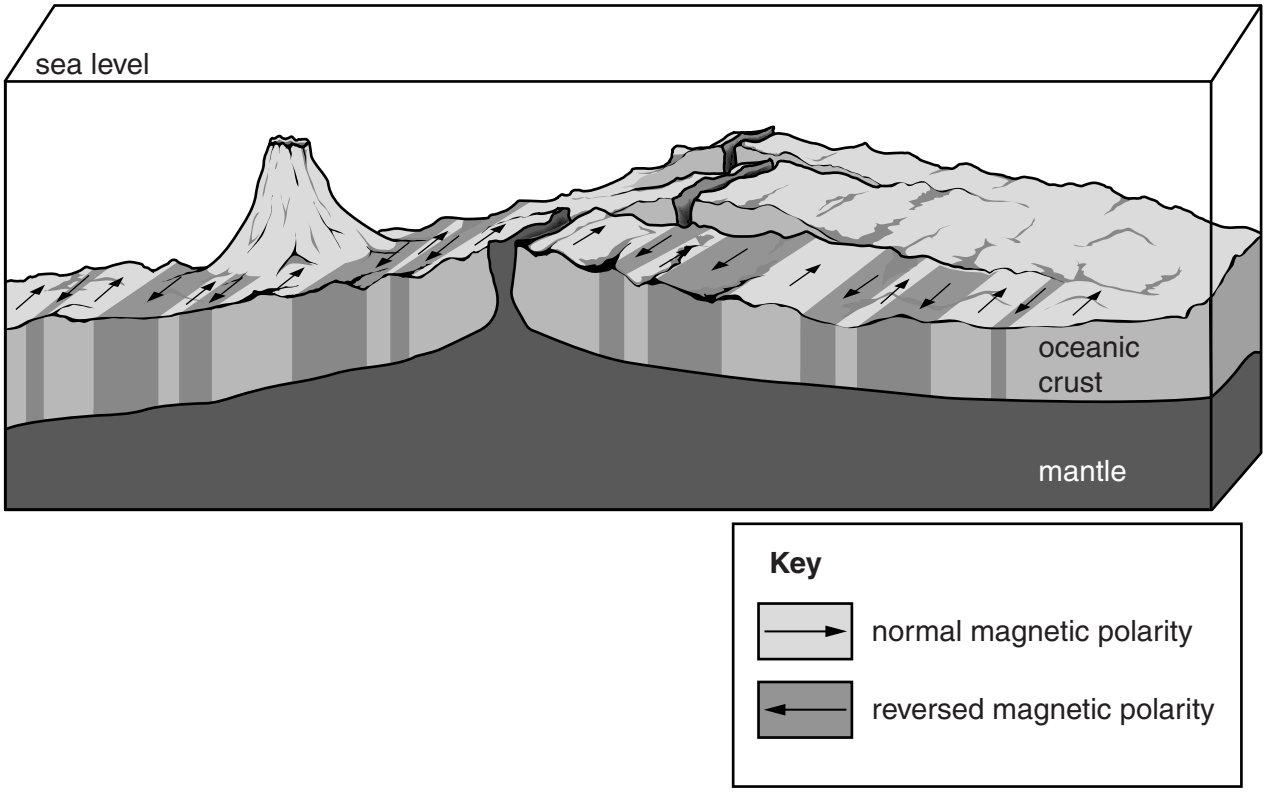

Fig. 1.2

(i) Add the letters **X**, **Y** and **Z** as labels to Fig. 1.2 to show the following:

X mid-ocean ridge

Y the oldest oceanic crust

Z submarine volcano. [3]

(ii) Describe the pattern of magnetic reversals shown in Fig. 1.2.

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.....[3]

(iii) With reference to Fig. 1.2, explain how the study of the magnetic properties of the rocks helps to provide additional evidence for the theory of plate tectonics.

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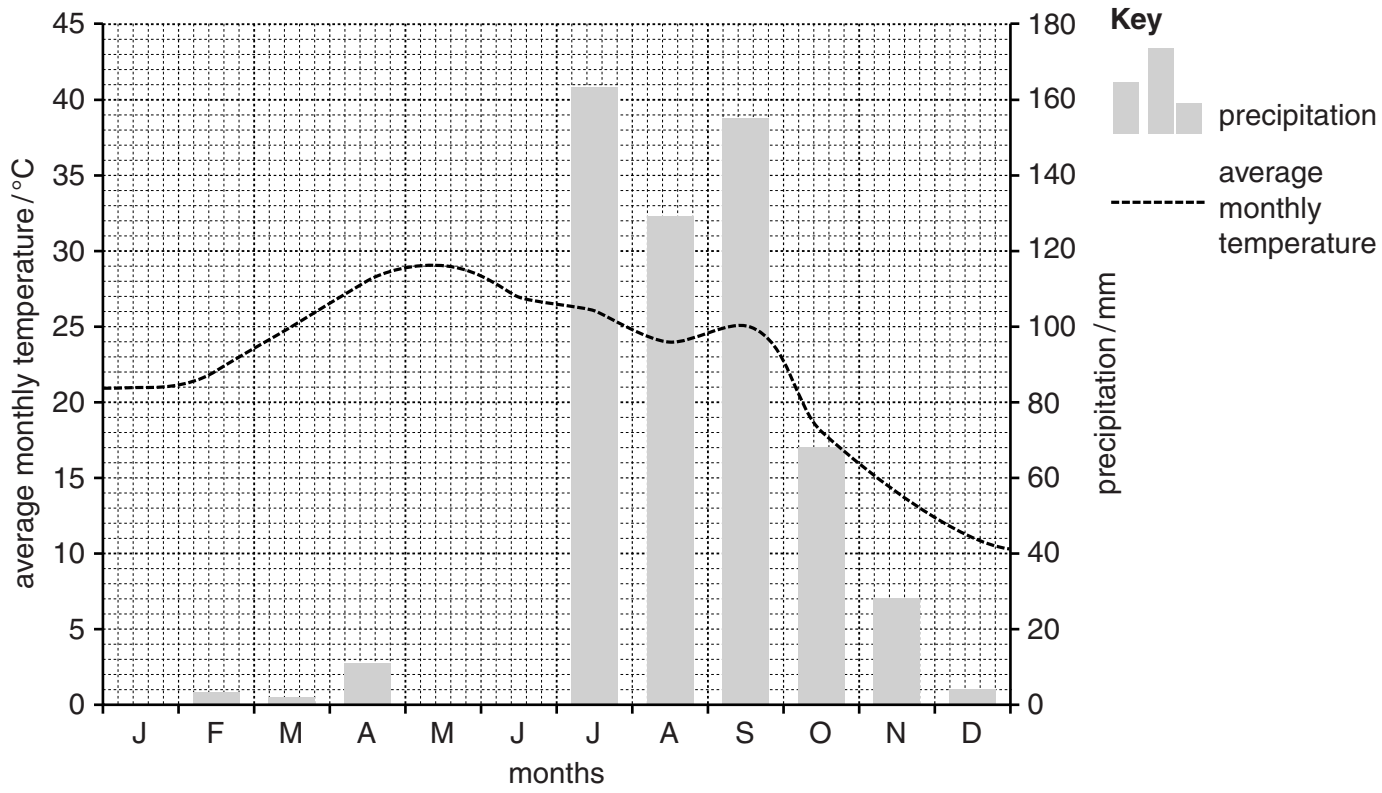
.....[4]

[Total: 20]

2 **(a)** Fig. 2.1 shows climate data for the city of Pune in Western India.



	J	F	M	A	M	J	J	A	S	O	N	D
precipitation / mm	0	3	2	11	40	140	163	129	155	68	28	4
average monthly temperature / °C	21	22	25	28	29	27	26	24	25	18	14	11

Fig. 2.1

(i) Complete the graph in Fig. 2.1 by plotting the precipitation data for the months of May and June. [2]

(ii) With reference to Fig. 2.1, state the name of the major climatic region in which Pune is located.

.....[1]

(iii) Using the data in Fig. 2.1, describe the annual pattern of precipitation in Pune.

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.....[3]

(iv) With reference to Fig. 2.1, suggest **one** reason for the fall in average temperatures in June and July.

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.....[2]

(b) Fig. 2.2 shows information about the seasonal characteristics of the climate of the Indian subcontinent.

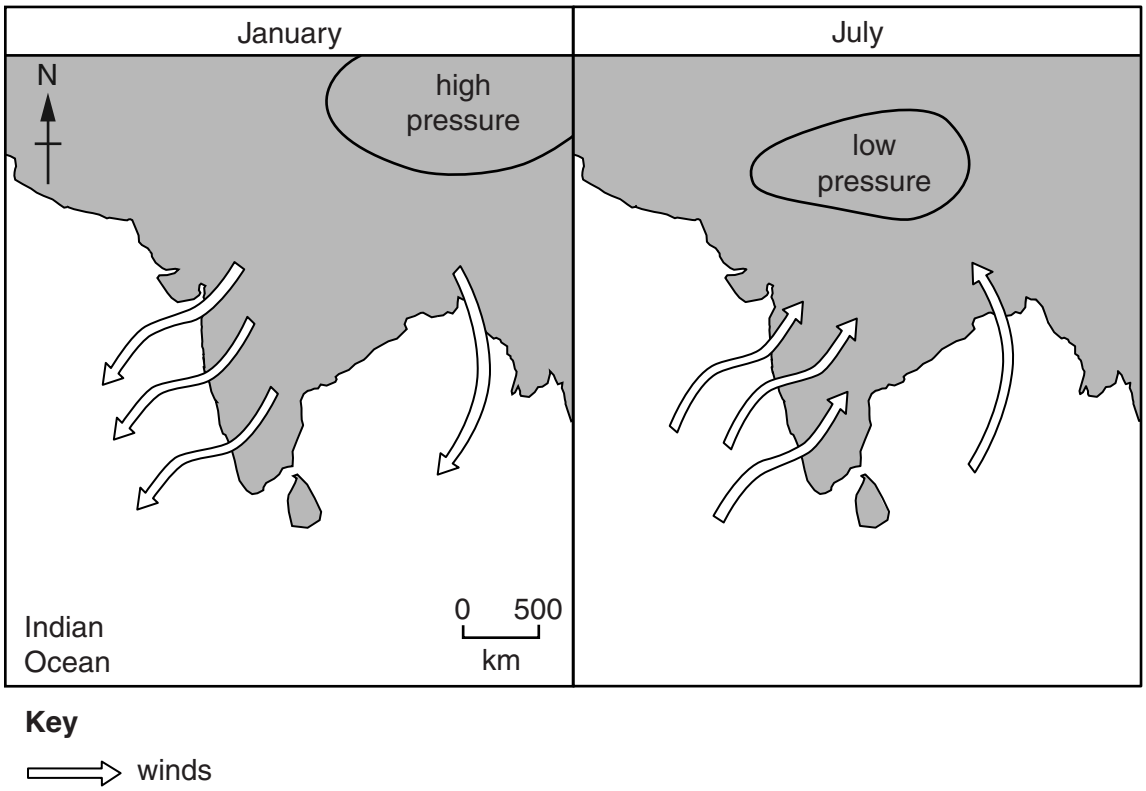

Fig. 2.2

(i) Suggest a reason why there is a reversal of winds over the Indian subcontinent in July. Refer to Fig. 2.2 in your answer.

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.....[3]

(ii) Explain why the southwesterly wind pattern in July shown in Fig. 2.2 is responsible for bringing rain to the Indian subcontinent.

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(iii) Suggest how human activity might be responsible for altering the climate of this region in the future.

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.....[6]

[Total: 20]

Section B

Answer **one** question from this section.

3 Fig. 3.1 shows information on the frequency of natural disasters and their impacts, occurring in countries with different levels of income between 1980 and 2009.

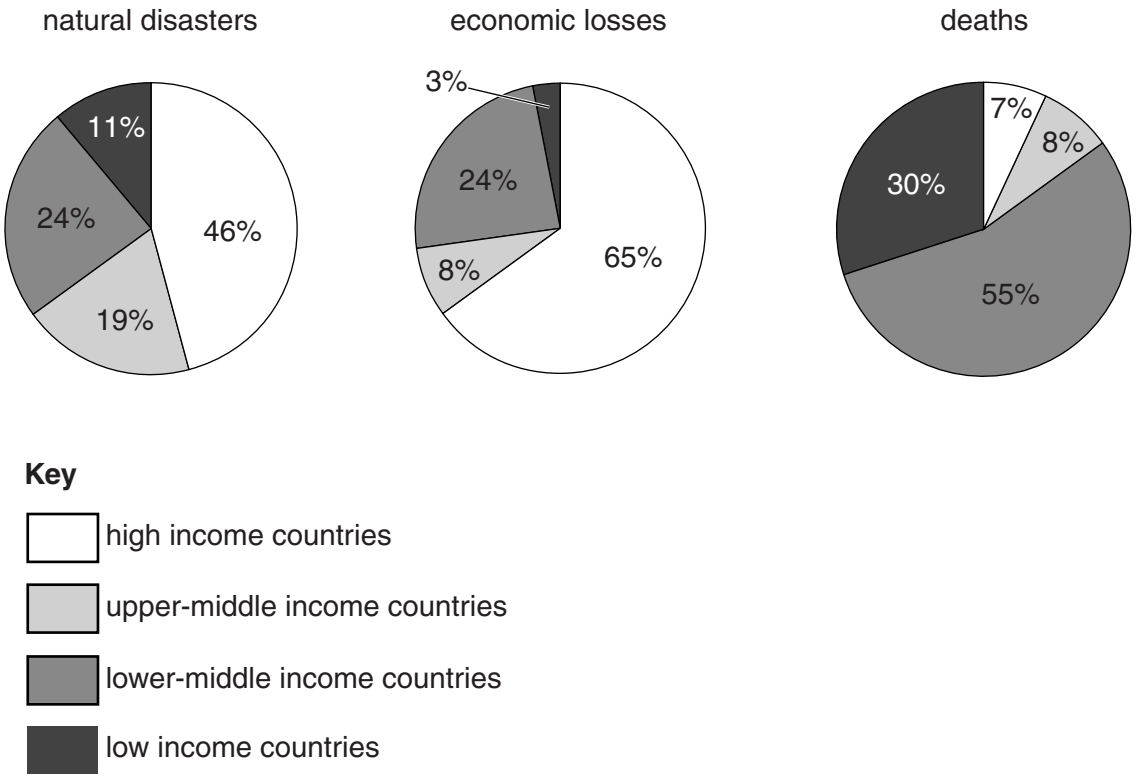

Fig. 3.1

(a) With reference to Fig. 3.1, describe the impacts of natural disasters on countries with different levels of income. [10]

(b) To what extent are volcanic hazards more easily monitored and managed than earthquake hazards? Include examples in your answer. [30]

[Total: 40]

4 Fig. 4.1 is an extract from a publication by an environmental pressure group against nuclear energy.

> **Nuclear power:**
> **dirty, dangerous and expensive**
>
> Nuclear reactors are unsafe. As happened after Chernobyl in 1986, the Fukushima nuclear disaster in March 2011 again exposed the flaws of reactors and highlighted serious failures in nuclear safety. As a result, millions of people who live near reactors are at risk.

Fig. 4.1

(a) Discuss the view expressed in the headline in Fig. 4.1 that nuclear power is 'dirty, dangerous and expensive'. [10]

(b) With reference to examples, evaluate the alternatives to nuclear power in a world which is urgently in need of additional supplies of energy. [30]

[Total: 40]

5 Fig. 5.1 shows the city of Banjul in West Africa, which is vulnerable to a projected rise in global sea levels.

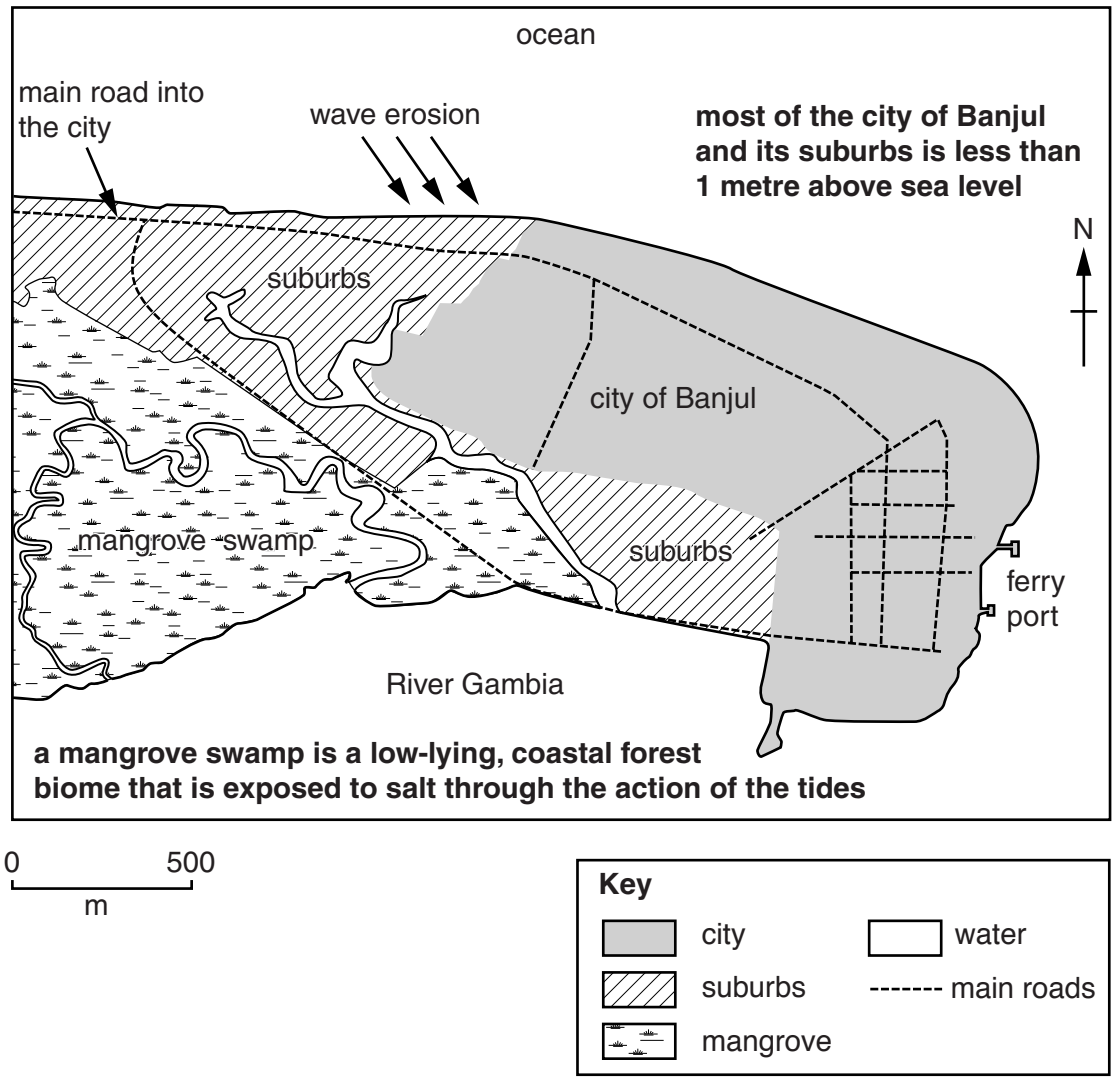

Fig. 5.1

(a) With reference to Fig. 5.1, suggest the possible effects of rising sea levels on the area shown. [10]

(b) Using examples, discuss the view that we must successfully adapt to global warming because we cannot prevent or reverse it. [30]

[Total: 40]

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