

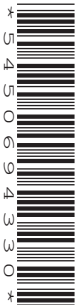
CANDIDATE  
NAME

CENTRE  
NUMBER

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**ENVIRONMENTAL MANAGEMENT**

**8291/13**

Paper 1 Lithosphere and Atmosphere

**May/June 2018**

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

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

## Section A

Answer **all** questions in this section.

Write your answers in the spaces provided.

- 1 (a) Fig. 1.1 shows five types of mass movement.

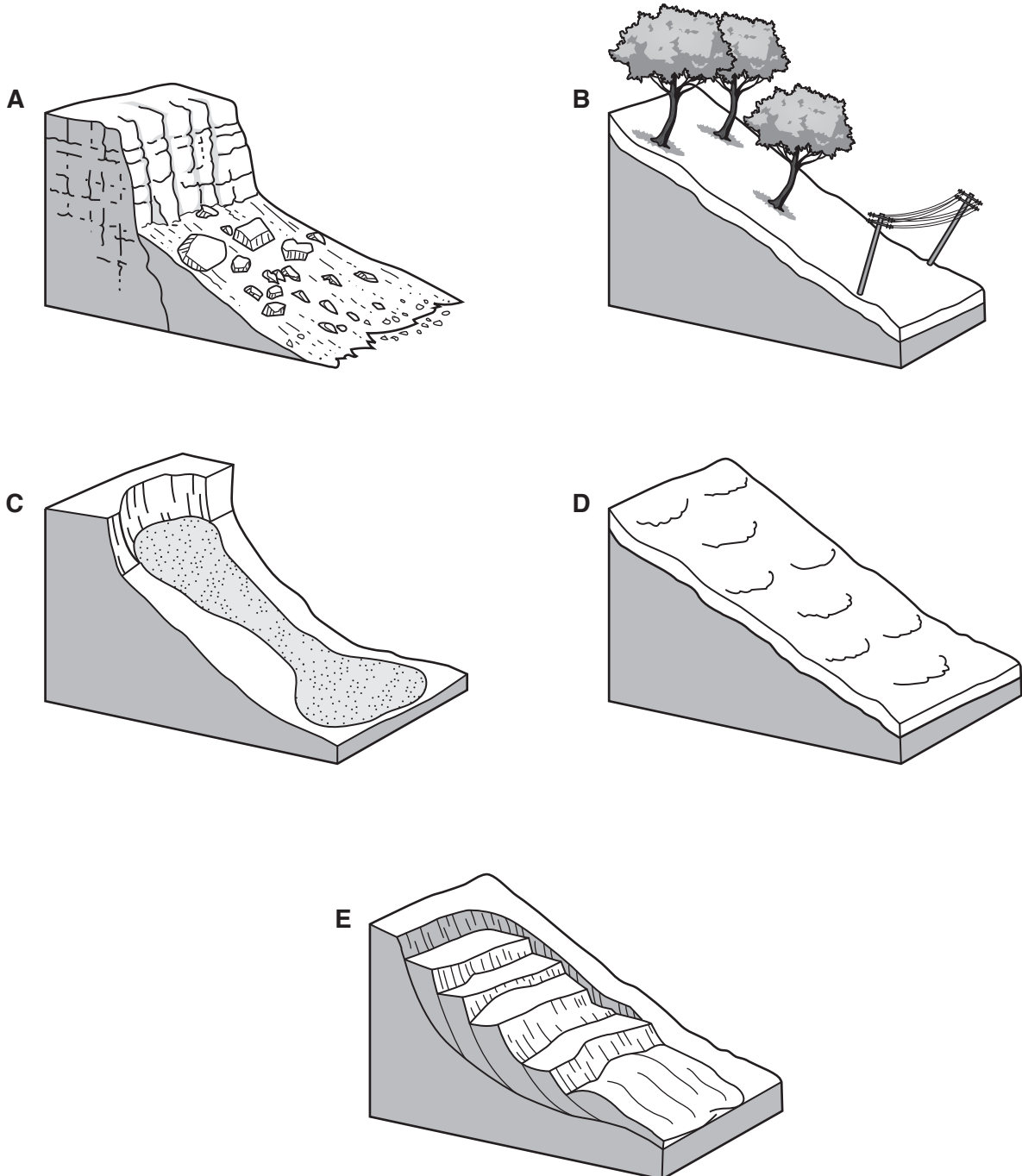


Fig. 1.1

- (i) Complete Table 1.1 by matching each of the diagrams, labelled **A** to **E**, to **one** type of mass movement.

**Table 1.1**

type of mass movement	letter
mudflow	
rock fall	
rotational slump	
soil creep	
solifluction	

[3]

- (ii) State which type of mass movement listed in Table 1.1 would **not** occur in a warm climate.

.....[1]

- (iii) With reference to Fig. 1.1, explain the role of water in mass movements.

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 .....  
 .....  
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 .....[3]

(b) Fig. 1.2 shows a mass movement that has taken place after a heavy rain storm.



Fig. 1.2

(i) Describe and explain **two** factors, other than water, that might have contributed to the mass movement shown in Fig. 1.2.

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.....[4]

(ii) Suggest **three** reasons why people build in high-risk locations such as that shown in Fig. 1.2.

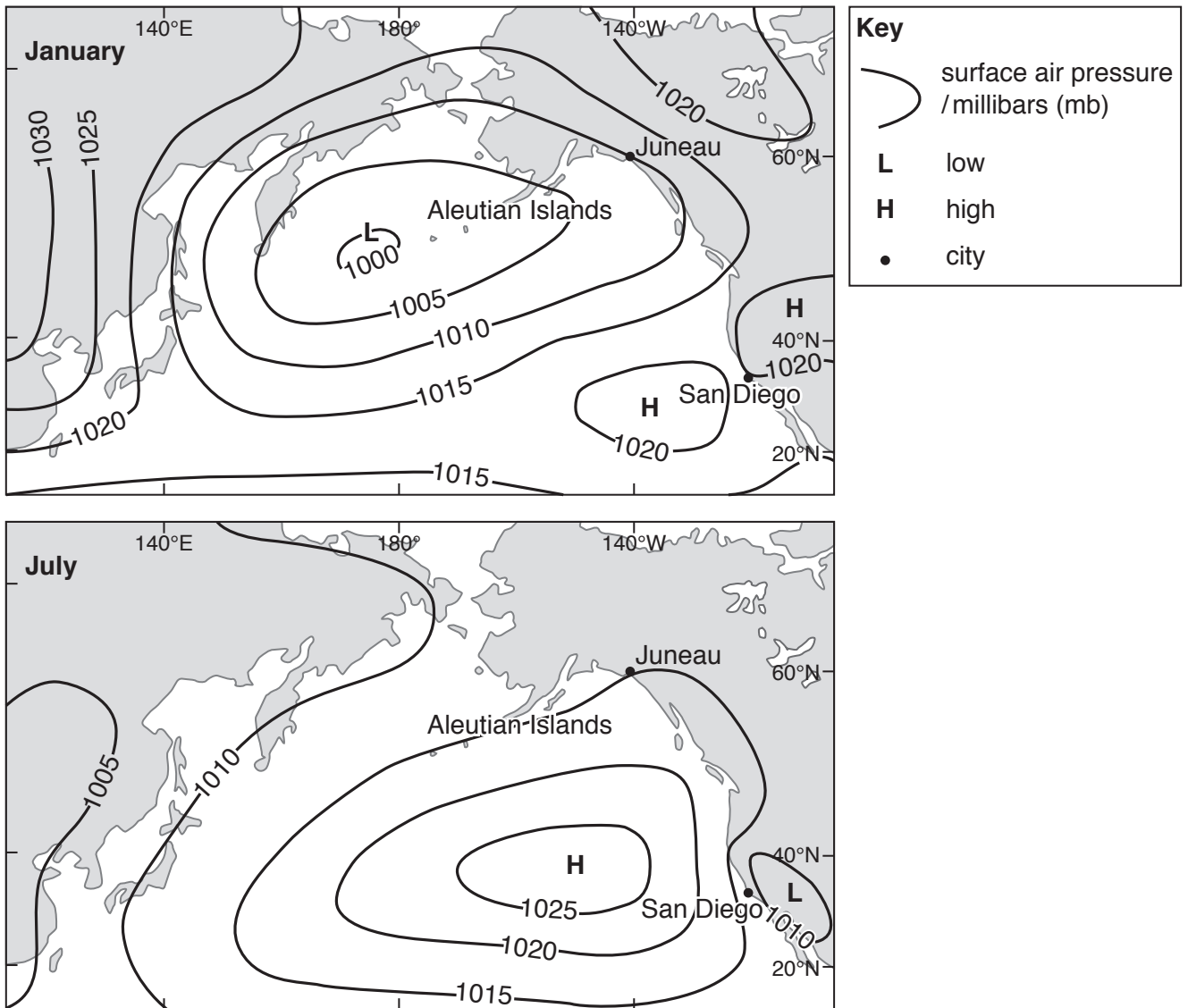
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(iii) Describe and explain ways to manage slopes to prevent future mass movements such as that shown in Fig. 1.2.

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[Total: 20]

2 (a) Fig. 2.1 shows surface air pressure in the northern Pacific Ocean in January and July.



**Fig. 2.1**

(i) State the surface air pressure at Juneau in January.

..... mb [1]

(ii) Describe the pattern of surface winds you would expect to find around the high shown in Fig. 2.1 in July.

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 ..... [2]



(b) Fig. 2.2 shows a climate graph for each of the two cities, Juneau and San Diego, located in Fig. 2.1.

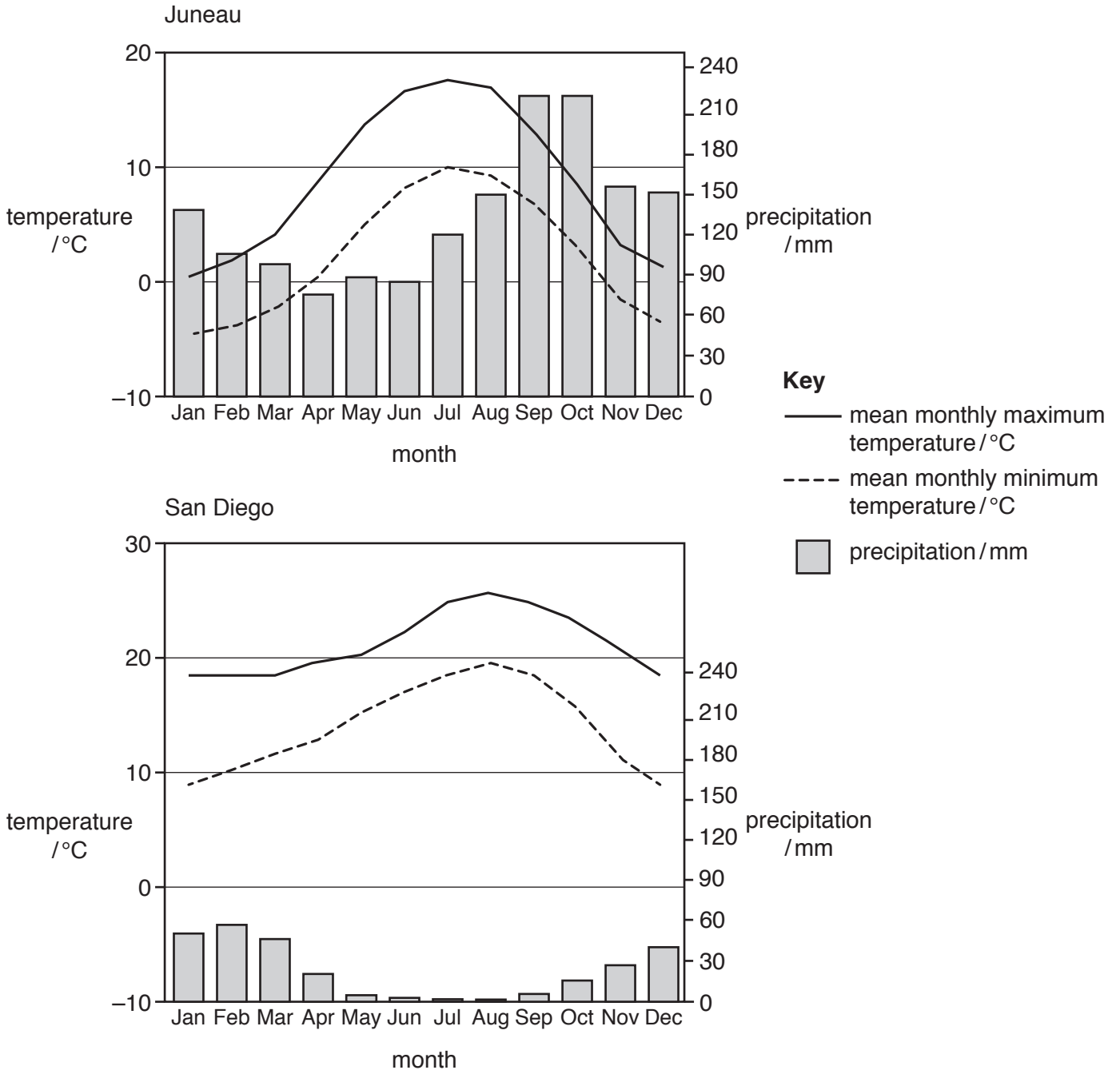


Fig. 2.2



(i) With reference to Fig. 2.2, compare the climates of the two cities, Juneau and San Diego.

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[4]

(ii) Suggest reasons for the differences in climate shown in Fig. 2.2.

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[4]

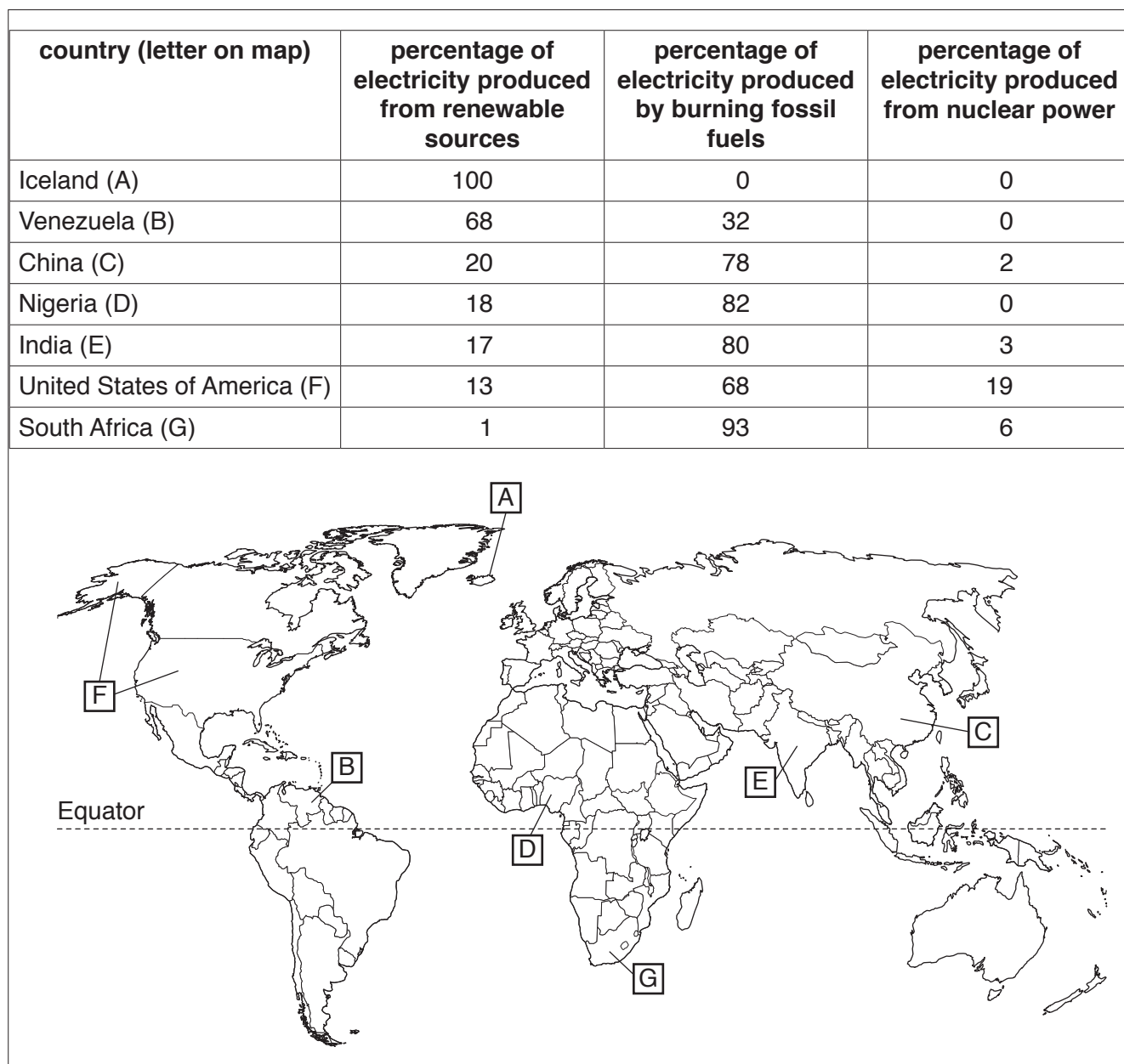
[Total: 20]

## Section B

Answer **one** question from this section.

Write your answers on the separate answer paper provided.

- 3 Fig. 3.1 provides information about the energy resources used to produce electricity in selected countries, reflecting their different energy policies. The location of each country is shown on the map.

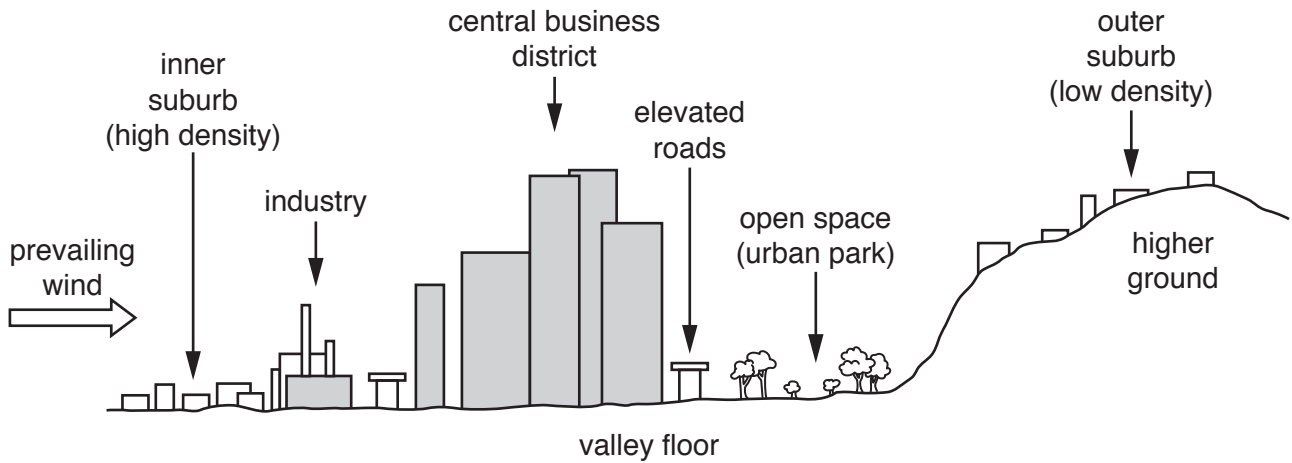


**Fig. 3.1**

- (a) Suggest reasons for the differences in the resources used to produce electricity for the countries shown in Fig. 3.1. [10]
- (b) Discuss the view that dependence on fossil fuels is unsustainable in the long term. [30]

[Total: 40]

4 Fig. 4.1 shows a simplified cross-section through an urban area.

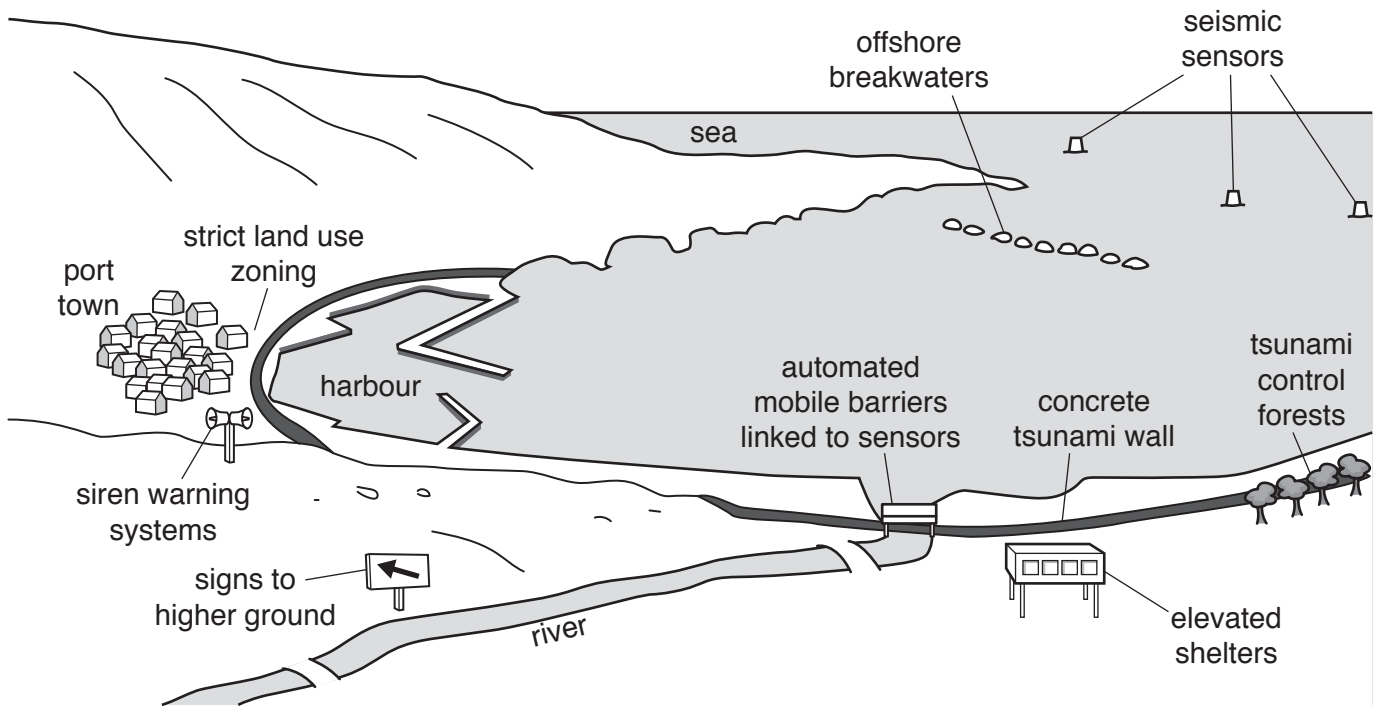


**Fig. 4.1**

- (a) With reference to Fig. 4.1, suggest how and why atmospheric pollution varies within this urban area. [10]
- (b) Discuss the view that reducing atmospheric pollution is much easier to achieve at a local scale than at a global scale. Include examples in your answer. [30]

[Total: 40]

5 Fig. 5.1 is a sketch of an area at risk from tsunami waves triggered by offshore earthquakes.



**Fig. 5.1**

- (a) With reference to Fig. 5.1, explain the difficulties associated with protecting people and their settlements from tsunami waves triggered by offshore earthquakes. [10]
- (b) Discuss the view that population growth and urbanisation will inevitably result in increasing loss of life from natural hazards. Include examples in your answer. [30]

[Total: 40]

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