

CANDIDATE  
NAME

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**ENVIRONMENTAL MANAGEMENT**

**8291/11**

Paper 1 Lithosphere and Atmosphere

**October/November 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 is a diagram that classifies mass movement according to speed and water content.

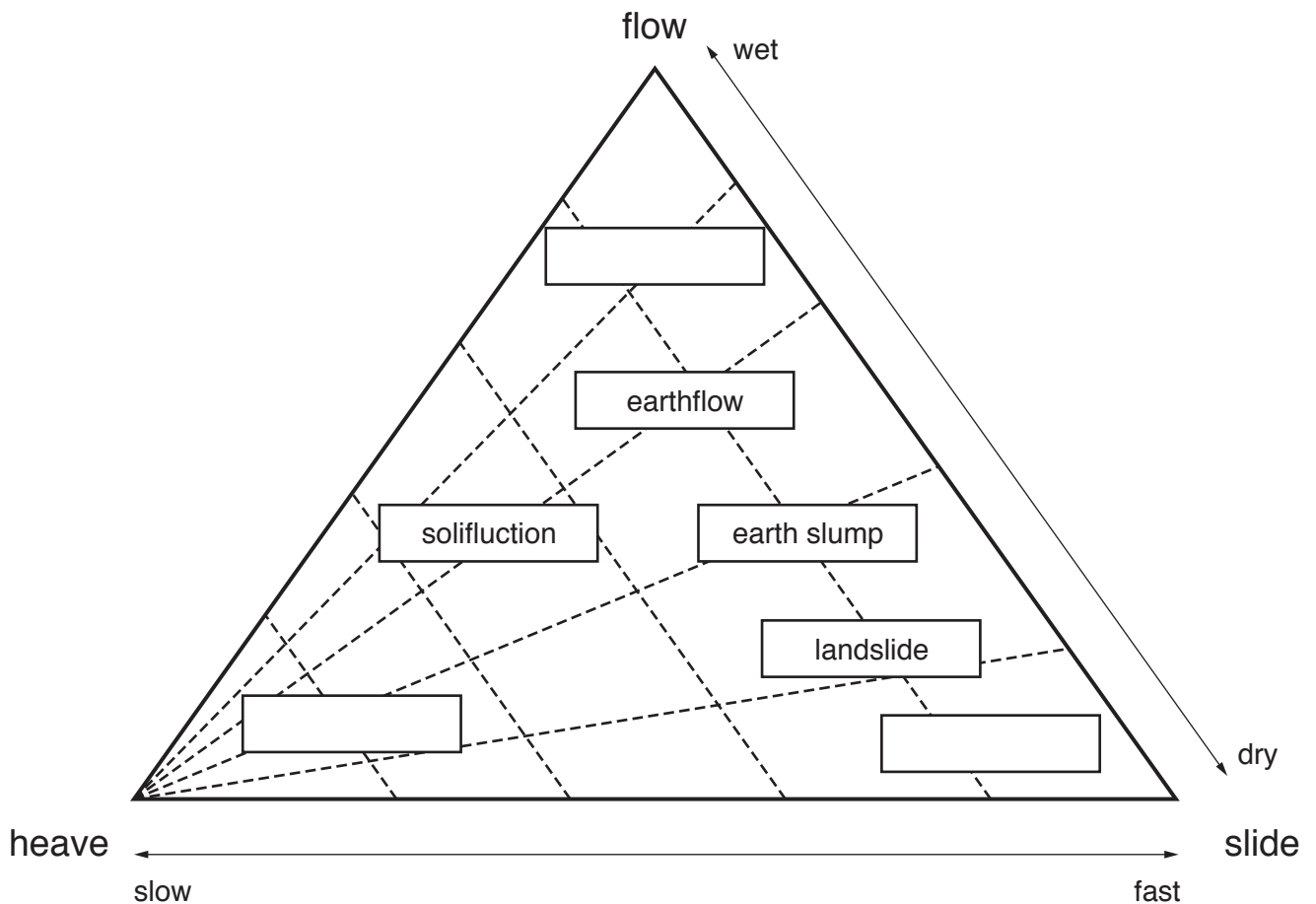
(i) Define the term *mass movement*.

.....

.....

.....

.....[2]



**Fig. 1.1**

(ii) Complete the diagram in Fig. 1.1 by adding the following types of mass movement in the appropriate blank boxes.

**mudflow**

**rock fall**

**soil creep**

[2]

(iii) Using Fig. 1.1, state **one** similarity and **one** difference between a flow and a slide.

similarity .....

.....

difference .....

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[2]

(iv) Describe **two** processes which contribute to the slow mass movements classified as heaves in Fig. 1.1.

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[4]





- 2 (a) Fig. 2.1 shows a simplified map of the major climatic regions in Africa and a table with climate data for three African cities, **A**, **B** and **C**.

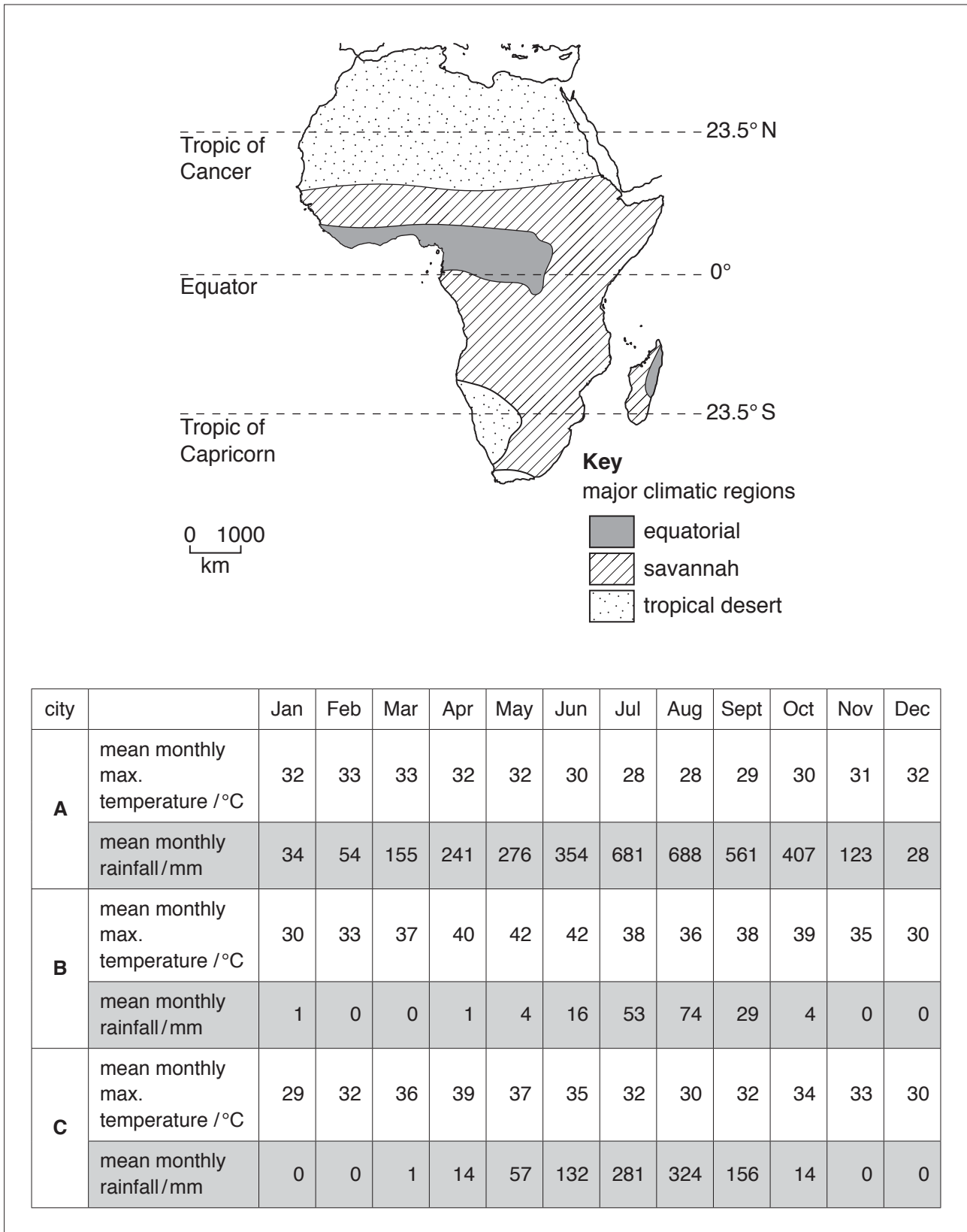


Fig. 2.1

(i) With reference to the map in Fig. 2.1, describe the distribution of the equatorial climate.

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.....[2]

(ii) Using the climate data for cities **A**, **B** and **C** in Fig. 2.1, state the major climatic region in which each of the cities is found.

city	major climatic region
<b>A</b>	.....
<b>B</b>	.....
<b>C</b>	.....

[2]

(iii) With reference to Fig. 2.1, state **two** differences between the climates of City **A** and City **C**.

.....  
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.....  
.....[2]

(b) Fig. 2.2 shows the pattern of air circulation either side of the Equator in Africa.

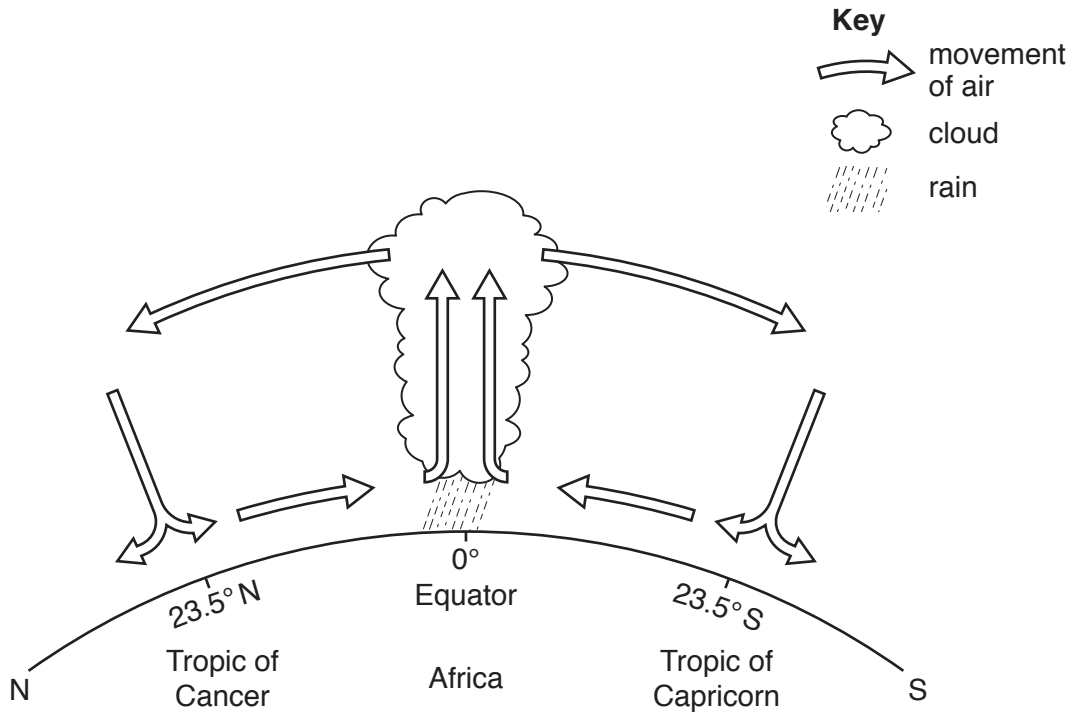


Fig. 2.2

(i) Describe the pattern of air circulation shown in Fig. 2.2.

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.....[2]

(ii) With reference to Fig. 2.2, suggest why there is low atmospheric pressure at the Equator.

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.....[2]

(iii) Explain the formation of the cloud shown in Fig. 2.2.

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.....[2]



(iv) With reference to Fig. 2.2, explain why there is low rainfall at approximately 23.5° N and 23.5° S of the Equator.

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.....[2]

(v) A drought is an extended period of lower than expected rainfall.

Explain the effects of drought on people and the natural environment.

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.....[6]

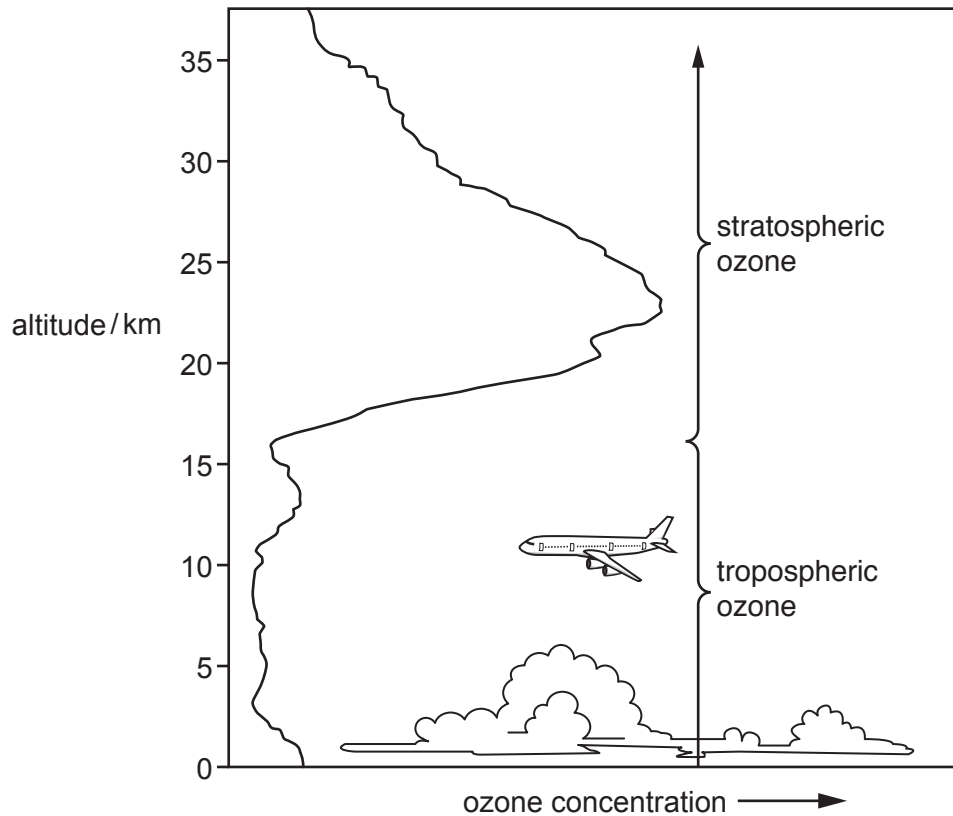
[Total: 20]

## Section B

Answer **one** question from this section.

Write your answers on the separate answer paper provided.

- 3 Fig. 3.1 shows the ozone concentration at different altitudes in the Earth's lower atmosphere.

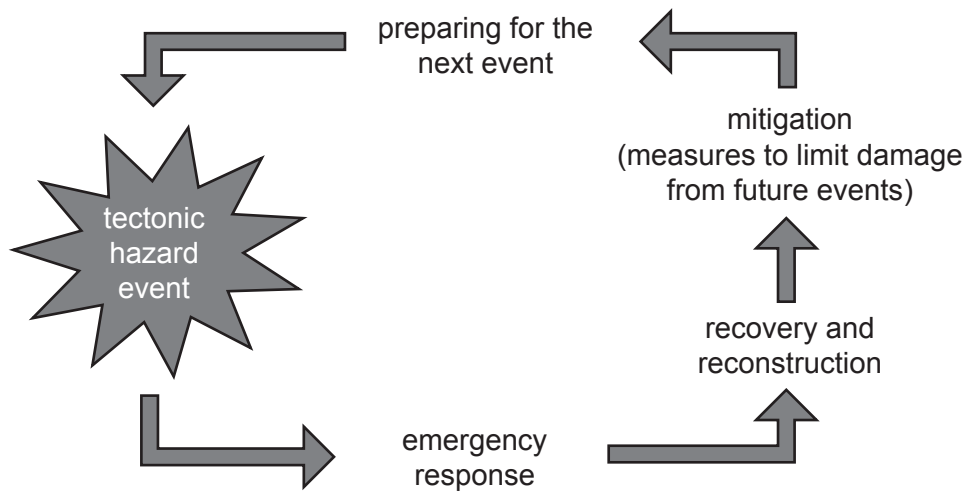


**Fig. 3.1**

- (a) Describe the distribution of ozone shown in Fig. 3.1 and explain the different processes by which ozone is produced in the atmosphere. [10]
- (b) Evaluate the success of strategies to manage stratospheric ozone concentration and tropospheric ozone concentration. [30]

[Total: 40]

- 4 Fig. 4.1 is a model that shows the management of a tectonic hazard event (an earthquake or a volcanic event).

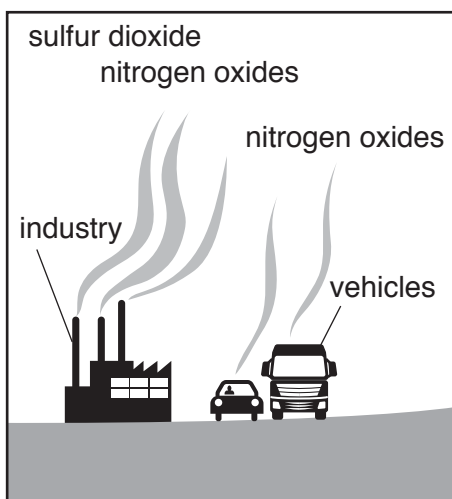


**Fig. 4.1**

- (a) With reference to Fig. 4.1, explain how tectonic hazards are managed to limit damage and loss of life. [10]
- (b) To what extent is the impact of a tectonic hazard determined by the level of economic development of the area affected? [30]

[Total: 40]

5 Fig. 5.1 is a simplified diagram to show some sources of acid rain.



**Fig. 5.1**

- (a) With reference to Fig. 5.1, describe and explain how human activity can cause acid rain pollution. [10]
- (b) To what extent can the development of renewable energy resources solve the problems of local and global atmospheric pollution? [30]

[Total: 40]

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