



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
 General Certificate of Education  
 Advanced Subsidiary Level and Advanced Level

CANDIDATE  
NAME

CENTRE  
NUMBER

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**ENVIRONMENTAL MANAGEMENT**

**8291/01**

Paper 1 Lithosphere and Atmosphere

**May/June 2009**

**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 a soft pencil for any diagrams, graphs, tables or rough working.  
 Do not use staples, paper clips, highlighters, glue or correction fluid.  
**DO NOT WRITE IN ANY BARCODES.**

**Section A**

Answer **all** questions.  
 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	
<b>Section A</b>	
<b>1</b>	
<b>2</b>	
<b>Section B</b>	
<b>Total</b>	

This document consists of **10** printed pages and **2** blank pages.



Section A

Answer **all** questions in this section

For  
Examiner's  
Use

1 (a) Fig. 1.1 shows the Earth's major tectonic plates and their directions of movement.

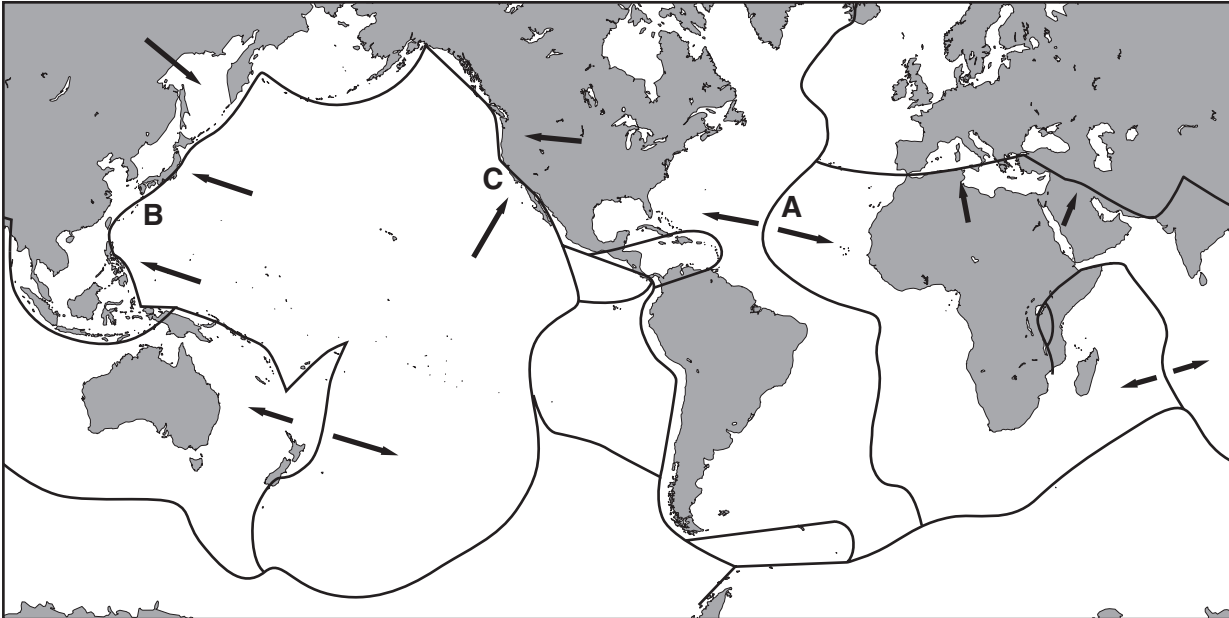


Fig. 1.1

(i) What is meant by the term *tectonic plate*?

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

(ii) Name the type of plate boundary that occurs at locations **A**, **B** and **C** in Fig. 1.1.

**A** = .....  
**B** = .....  
**C** = ..... [3]

(iii) Explain why volcanoes are common features at plate boundary **A**.

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

(b) Fig. 1.2 and Fig. 1.3 contain information relating to the Pakistan earthquake of 2005.

For  
Examiner's  
Use

On 8th October 2005, tragedy struck across the mountains and valleys of Kashmir. An earthquake of 7.6 magnitude on the Richter scale, centred near Balakot, Pakistan, levelled villages and killed more than 70 000 people in Pakistan and 1300 in India.

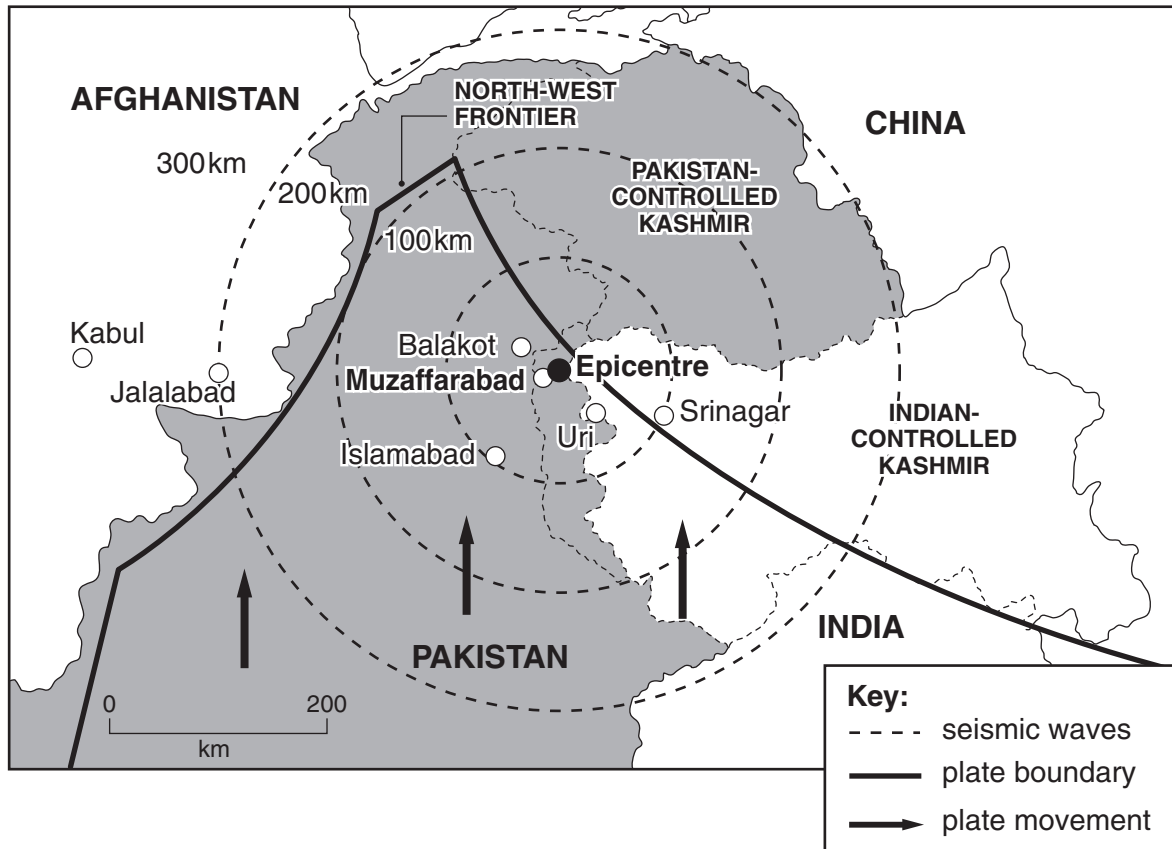


Fig. 1.2

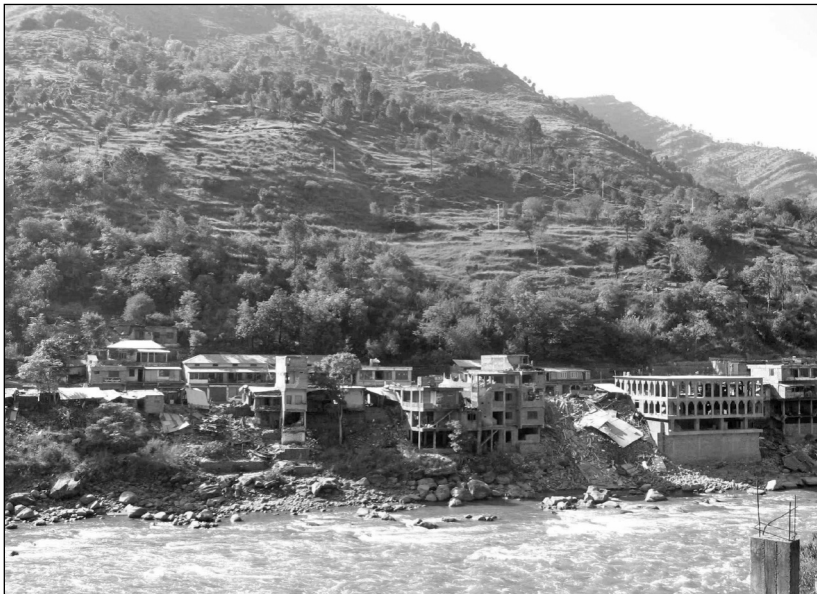


Fig. 1.3

(i) Describe the tectonic process that triggered the Pakistan earthquake.

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

(ii) Explain the pattern of seismic waves shown in Fig. 1.2.

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

(iii) Suggest **two** effects an earthquake could have had on the physical landscape shown in Fig. 1.3.

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

(iv) An estimated 3.3 million people were injured or made homeless, and 1000 hospitals were destroyed by the Pakistan Earthquake. With reference to Fig. 1.2 and Fig. 1.3 assess the difficulties faced by the relief organisations in the period following the earthquake.

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
..... [5]

[Total: 20]

2 (a) Fig. 2.1 describes the vertical structure of the atmosphere.

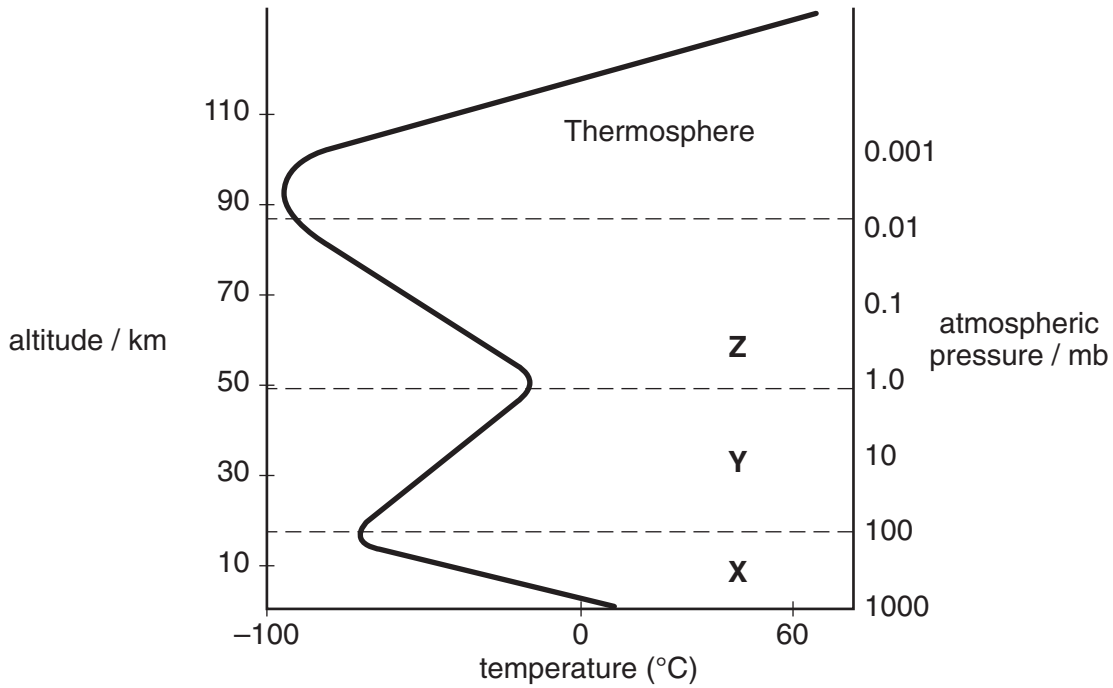


Fig. 2.1

(i) Identify the layers X, Y and Z shown in Fig. 2.1.

- X .....
- Y .....
- Z ..... [3]

(ii) Briefly describe the characteristics of:

- layer Y

.....  
 .....  
 .....

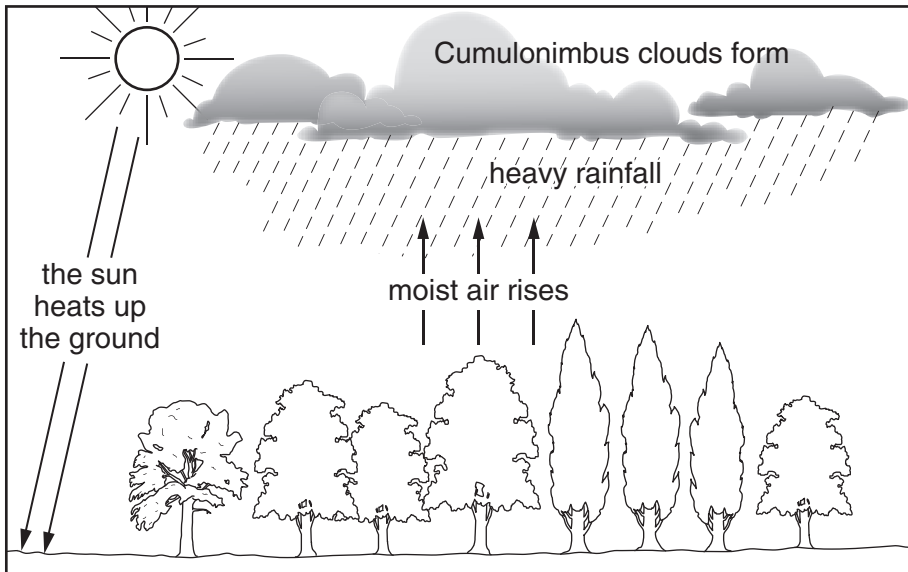
- layer Z

.....  
 .....  
 .....  
 ..... [4]

(iii) Give **two** reasons for the decrease in temperature that occurs between 0 and 10km.

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

(b) Fig. 2.2 illustrates a process that produces rain.



**Fig. 2.2**

(i) State the type of rainfall that is produced by the process illustrated in Fig. 2.2.

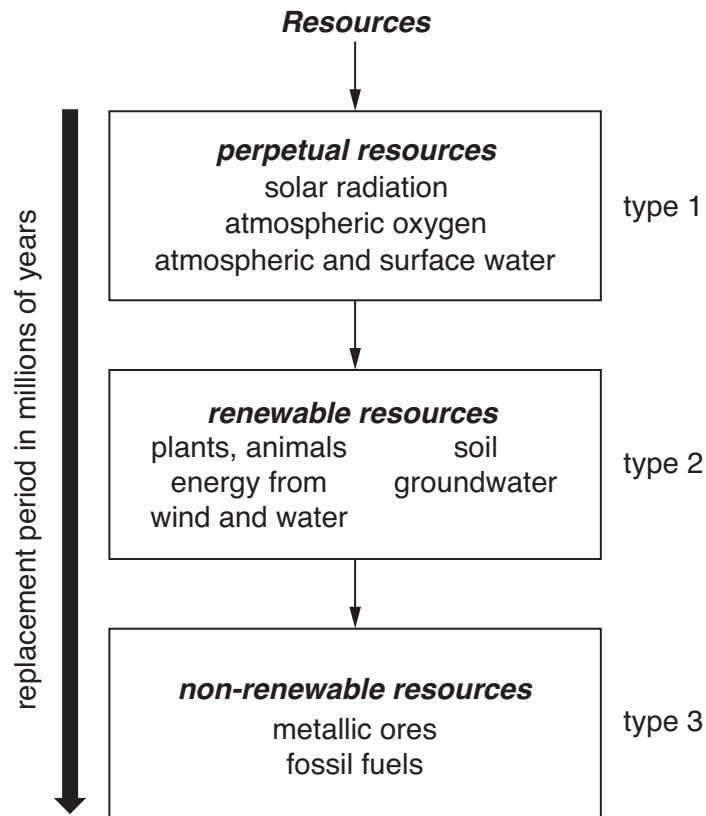
..... [1]



## Section B

Choose **one** question from this section

- 3 (a) Fig. 3.1 shows how resources may be classified into three types according to how long it takes to replace them.



**Fig. 3.1**

Describe the **three** types of resources shown in Fig. 3.1.

Explain why the replacement period provides a useful method of classification.

[10]

- (b) With reference to examples you have studied, assess the extent to which **either** developing nations (LEDCs) **or** developed nations (MEDCs) can seek to maintain or increase their consumption of fossil fuels.

[30]

[Total: 40]



4 (a) Burning fossil fuels can lead to the emission of acid gases. The quantities emitted can be reduced by taking action at any, or all, of the three stages in the combustion process.

- before combustion
- during combustion
- after combustion

Using examples, briefly describe why such actions might be more effective than managing the effects of acid deposition. [10]

(b) For the purpose of this question you are to assume the role of an environmental planning officer responsible for **either** a named agricultural **or** a named urban region with which you are familiar.

For **either** the agricultural area **or** the urban region area you have chosen, write a report that highlights the pollution issues and addresses their management.

Your report should:

- assess current pollution issues
- consider public concerns
- propose a strategy or strategies that target reducing levels of pollution. [30]

[Total: 40]

- 5 (a) Outline **three** factors that may have contributed to the landslips shown in Fig. 5.1. [10]



**Fig. 5.1**

- (b) With reference to examples of where human activity has contributed to slope instability:

- describe the causes and effects of the slope instability
- assess the measures that could be adopted to achieve a sustainable use of sloping land in the areas you have selected. [30]

[Total: 40]



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