Instructions

• Use black ink or ball-point pen.
• Fill in the boxes at the top of this page with your name, centre number and candidate number.
• In Section A, answer all questions.
• In Section B, answer either question 5 or 6.
• In Section C, answer either question 7 or 8.
• Answer the questions in the spaces provided – there may be more space than you need.

Information

• The total mark for this paper is 78.
• The marks for each question are shown in brackets – use this as a guide as to how much time to spend on each question.
• Questions labelled with an asterisk (*) are ones where the quality of your written communication will be assessed – you should take particular care on these questions with your spelling, punctuation and grammar, as well as the clarity of expression.
• The marks available for spelling, punctuation and grammar are clearly indicated.

Advice

• Read each question carefully before you start to answer it.
• Keep an eye on the time.
• Check your answers if you have time at the end.
SECTION A – INTRODUCTION TO THE DYNAMIC PLANET

Answer ALL questions in this section

Topic 1: Restless Earth

1. Figure 1 is a map of the Mount St. Helens area showing possible future hazards.

![Map of Mount St. Helens area showing possible future hazards](image)

(Source: US Geological Survey, Department of the Interior/USGS)

**Figure 1**

(a) Study Figure 1.

State **two** possible impacts of a volcanic eruption on the settlement of Kelso.

1. 

2. 

(b) Describe how convection currents cause plate movements.

You may draw a diagram in the space below to help your answer.
(c) Explain how hazard-resistant design can reduce the impact of earthquakes in the developing world.
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Question 2 is on the next page
Figure 2 shows annual temperature variations in Europe between 900AD and 2000AD.

Figure 2

(a) Study Figure 2.

Describe how the average annual temperature varied between 1000AD and 1350AD.
(b) Explain why the **UK's** climate might change in the future.  

(c) Explain why the impact of future climate change is likely to be more severe in developing countries than in the UK.

(Total for Question 2 = 12 marks)
Topic 3: Battle for the Biosphere

Figure 3 shows the importance of different causes of deforestation in Brazil between 2000 and 2005.

**Key**

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>5%</td>
<td>Cattle Ranching</td>
</tr>
<tr>
<td></td>
<td>Small-scale Subsistence Agriculture</td>
</tr>
<tr>
<td></td>
<td>Large-scale Commercial Agriculture</td>
</tr>
<tr>
<td></td>
<td>Logging</td>
</tr>
<tr>
<td></td>
<td>Other</td>
</tr>
</tbody>
</table>

**Figure 3**

(a) Study Figure 3.

Describe **one** benefit of deforestation for Brazil.

(2)
(b) Explain **two** ways the biosphere can be conserved. (4)

1

2

(c) Explain how **altitude** and **soils** can affect biome distribution. (6)

(Total for Question 3 = 12 marks)
4 Figure 4 shows the percentages of people with access to clean water in four developing countries in 1988 and 2005.

![Bar chart showing access to clean water in 1988 and 2005 for four countries: Botswana, Burkina Faso, Dominican Republic, and Indonesia.]

(a) Study Figure 4.

Describe the changes in access to clean water between 1988 and 2005.

(2)
(b) Explain how intensive agriculture can affect water quality.

(Total for Question 4 = 12 marks)

(c) Explain the likely impact of climate change on the hydrological cycle.

(Total for Section A = 48 marks)
 SECTION B – SMALL-SCALE DYNAMIC PLANET

Answer ONE question in this section.

Topic 5: Coastal Change and Conflict

If you answer Question 5 put a cross in the box □.

Spelling, punctuation and grammar will be assessed in 5*(b).

5 Figure 5 shows the management measures used to protect a section of coastline.

(Source: © www.geographyphotos.com)

**Figure 5**

(a) Study Figure 5.

   (i) Outline one benefit of using sea walls to protect the coastline.

   (2)
(ii) Outline why some local residents may object to the sea wall.

*(b) Examine the importance of destructive waves in the formation of coastal landforms.

(Total for spelling, punctuation and grammar = 3 marks)
(Total for Question 5 = 15 marks)
Topic 6: River Processes and Pressures

If you answer Question 6 put a cross in the box ☐.

Spelling, punctuation and grammar will be assessed in 6*(b).

6 Figure 6 shows the management measures used to control river flooding.

![Figure 6]

(a) Study Figure 6.

(i) Outline one benefit of building levees to control river flooding.

(2)

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___________________________________________________________________________
(ii) Outline one disadvantage of using levees to control river flooding. 

*(b) Examine the importance of deposition in the formation of landforms in the lower course of a river.

(Total for spelling, punctuation and grammar = 3 marks)  
(Total for Question 6 = 15 marks) 

TOTAL FOR SECTION B = 15 MARKS
SECTION C – LARGE-SCALE DYNAMIC PLANET

Answer ONE question in this section.

Topic 7: Oceans on the Edge

If you answer Question 7 put a cross in the box ☐.

Spelling, punctuation and grammar will be assessed in 7*(b).

7 Figure 7 shows the estimated threat to coral reefs in part of the Indian Ocean.

![Map of the Indian Ocean showing the estimated threat to coral reefs.]

(Source: © Phillipe Rekacewicz, UNEP/GRID - Arendal)

Figure 7
(a) Study Figure 7.

(i) Describe the distribution of threatened coral reefs on the coast of Madagascar.

(ii) Outline one possible reason why some marine eco-systems are more threatened than others.
*(b) Examine how **local** actions can help protect marine eco-systems. (8)

(Total for spelling, punctuation and grammar = 3 marks)
(Total for Question 7 = 15 marks)
Figure 8 shows the population of counties in Alaska, USA.

(Source: © Phillipe Rekacewiz, UNEP/GRID - Arendal)

Figure 8
(a) Study Figure 8.

(i) Describe the distribution of Alaska’s Native American population. (2)

(ii) Outline one reason why some communities in extreme environments are under threat from out-migration. (2)
*(b) Examine how local actions can help communities survive in extreme environments.

(Total for spelling, punctuation and grammar = 3 marks)
(Total for Question 8 = 15 marks)

TOTAL FOR SECTION C = 15 MARKS
TOTAL FOR PAPER = 78 MARKS