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.
• Check your answers if you have time at the end.
1 Figure 1 shows the global variations in tsunami risk.

![Map showing global tsunami risk zones](http://www.mapsofworld.com/world-maps/tsunami-zones.html)

**Figure 1**

(a) Study Figure 1.

Describe the distribution of coastlines at high risk of tsunamis.

(2)
(b) Explain why earthquakes occur on conservative plate boundaries.

You may use a diagram to help your answer.

(4)
*(c) Explain the differences between the primary and secondary impacts of a named tectonic event. (6)

Named tectonic event

(Total for Question 1 = 12 marks)
Topic 2: Changing Climate

Figure 2 shows the advance and retreat of Sólheimajökull, an Icelandic glacier, between 1930 and 2010.

![Graph showing the advance and retreat of Sólheimajökull between 1930 and 2010.](Source: www.geocaching.com)

Figure 2

(a) Study Figure 2.

Describe the changes in Sólheimajökull.

(2)
(b) Other than glacial advance and retreat, describe **two** pieces of evidence that show that climate change has happened in the past.

1. 

2. 
(c) Explain the possible impacts of future climate change on a named developing country.

Named developing country

(Total for Question 2 = 12 marks)
Figure 3 shows the numbers of endangered species, which are likely to become extinct, for the seven continents.

![Bar chart showing the number of endangered species by continent]

**Figure 3**

(a) Study Figure 3.

Describe the global distribution of endangered species.

(2)
(b) Explain why altitude affects biome location.

(4)
(c) Examine the threats to conserving the biosphere.

(Total for Question 3 = 12 marks)
Figure 4 shows the changing supply and demand of water per person in China since 2000.

![Graph showing water demand and supply per person from 2000 to 2011]


**Figure 4**

(a) Study Figure 4.

Compare the trends for water demand per person and water supply per person.

(2)
(b) Outline **two** threats to water quality.

1

2
(c) Examine the effectiveness of small-scale intermediate technology solutions for managing water supplies in the developing world.

(Total for Question 4 = 12 marks)

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 a cliff collapse in the west of England.

(a) Study Figure 5.

(i) Identify the process of mass movement causing this cliff to retreat.

(ii) Outline the reasons why some cliffs retreat faster than others.

Figure 5
*(b) For a named coastline, examine the threat rapid coastal erosion poses for both people and the environment. (8)

Named coastline

(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 river erosion in North Carolina, USA.

(Source: http://www.bae.ncsu.edu/programs/extension/wqg/sri/southfork.htm)

**Figure 6**

(a) Study Figure 6.

(i) Identify the process of erosion most likely to have caused this collapse. (1)

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(ii) Outline the reasons why some rivers erode more than others. (3)

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*(b)* Compare the role of physical and human processes in causing rivers to flood.
Figure 7 shows the top five items of waste found on Californian beaches on 'Clean-up day' 2015.

(Source: switchboard.nrdc.org)

Figure 7

(a) Study Figure 7.

(i) Describe the importance of plastic in this waste. (2)
(ii) Outline **one** of the threats caused by human waste and rubbish.

(2)

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*(b) Examine the impact of international laws and agreements in protecting the oceans.*

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

(Total for Question 7 = 15 marks)
Figure 8 shows how Fennec foxes have adapted to their environment.

- Fennec foxes live in holes underground where they hide during the day and raise their young.
- They hunt at night.
- Excellent hearing helps them find their prey and big ears help keep them cool.

A Fennec fox

(Source: used under Creative Commons)

Figure 8

(a) Study Figure 8.

(i) Describe how Fennec foxes have adapted to their environment.

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(ii) Outline one threat to species such as the Fennec fox.

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(b) Examine how successful sustainable management is in protecting 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
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