Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

For Examiner's Use	
Examiner's Initials	
Question	Mark
1	
2	
3	
4	
5	
6	
7	
TOTAL	

General Certificate of Secondary Education
Higher Tier
June 2011

Geography (Specification A)

40301H

H

Unit 1 Physical Geography

Monday 13 June 2011 9.00 am to 10.30 am

For this paper you must have:
- the colour insert
- pencil
- rubber
- ruler.

You may use a calculator.

Time allowed
- 1 hour 30 minutes

Instructions
- Use black ink or black ball-point pen.
- Fill in the boxes at the top of this page.
- Answer **three** questions.
- Answer **one** question from **Section A** and **one** question from **Section B**, and **one** other question from **either** Section A **or** Section B.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.
- Use case studies to support your answers where appropriate.

Information
- The marks for questions are shown in brackets.
- The maximum mark for this paper is 75.
- You will be marked on your ability to:
  – use good English
  – organise information clearly
  – use specialist vocabulary where appropriate.

Advice
- Where appropriate, credit will be given for the use of diagrams to illustrate answers and where reference is made to your personal investigative work. You are advised to allocate your time carefully.

Section A

Answer **one** question from Section A and **one** question from Section B and **one** other question from **either** Section A **or** Section B.

Use case studies to support your answers where appropriate.

Total for this question: 25 marks

1 The Restless Earth

1 (a) Give **two** differences between continental crust and oceanic crust.

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(2 marks)

1 (b) (i) Study **Figure 1** on the insert, a photograph of Mount Vesuvius, a volcano in Italy. Draw a labelled sketch of **Figure 1** to show the characteristics of this volcano.

(3 marks)

1 (b) (ii) Explain how volcanoes form at constructive plate margins.

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(4 marks)

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1 (c) (i) Describe the size and shape of a supervolcano

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(2 marks)

Question 1 continues on the next page

1 (c) (ii) Describe the likely worldwide effects of a supervolcano eruption.

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1 (d) Study **Figure 2** on the insert, photographs of how people use fold mountains. With the help of **Figure 2** and a case study of a fold mountain range, describe how people use fold mountains.

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(8 marks)

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Turn over for the next question

Total for this question: 25 marks

2 Rocks, Resources and Scenery

2 (a) Give **two** characteristics of igneous rock.

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(2 marks)

2 (b) (i) Study **Figure 3** on the insert, which shows part of the rock cycle.

Describe the processes which lead to the formation of sedimentary rock.

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(3 marks)

2 (b) (ii) What is 'weathering'?

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(2 marks)

2 (b) (iii) Draw a labelled diagram(s) to explain how exfoliation occurs.

(4 marks)

Question 2 continues on the next page

2 (c) Study **Figure 4** on the insert, a photograph of Hay Tor on Dartmoor, Devon.
Describe the granite tor shown and explain its formation.

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2 (d) Different rocks create contrasting landscapes.
Using **one or more** rock types you have studied, describe the benefits of using the landscape for economic activity.

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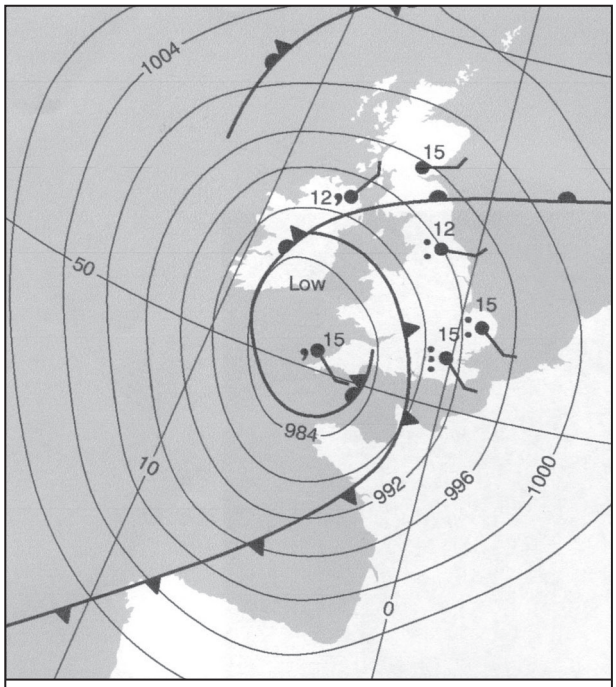
Turn over for the next question

Total for this question: 25 marks

3 The Challenge of Weather and Climate

3 (a) Study **Figures 5a** and **5b** which show a synoptic chart and a satellite image for midday on 5 September 2008.

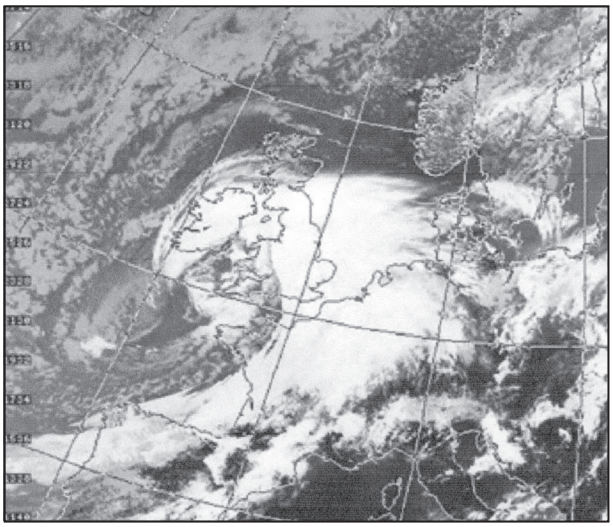
Figure 5a



Key

- Sky $\frac{8}{8}$ covered by cloud
- Wind direction (north west shown)
- Wind speed (8 – 12 knots, force 3)
- Drizzle
- Rain

Figure 5b



3 (a) (i) Using information from **Figure 5a**, label **three** features of the weather system on **Figure 5b**.

(3 marks)

3 (a) (ii) The weather system shown is a depression.
How does the pattern of isobars shown in **Figure 5a** suggest this?

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(2 marks)

3 (b) Explain why the weather changes with the passage of a depression.

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Question 3 continues on the next page

3 (c) (i) Study **Figure 6** on the insert, which shows predicted global, Northern hemisphere and Southern hemisphere temperature change from 2000 to 2100.
Describe the trends shown by the graph.

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(4 marks)

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3 (c) (ii) Outline **one** possible cause of global climate change.

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(2 marks)

3 (d) Describe and explain the global response(s) to the threat of climate change.

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Turn over for the next question

Total for this question: 25 marks

4 Living World

4 (a) (i) What is an 'ecosystem'?

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(2 marks)

4 (a) (ii) Study **Figure 7** on the insert, which shows the distribution of the hot desert ecosystem. Describe the distribution of the hot desert ecosystem.

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(3 marks)

4 (b) (i) Study **Figure 8** on the insert, photographs which show vegetation in a hot desert. Describe the characteristics of the vegetation shown in **Figure 8**.

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4 (b) (ii) Explain how vegetation adapts to the climate and soils of a hot desert area.

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Question 4 continues on the next page

4 (c) (i) Outline **one** cause of tropical rainforest deforestation.

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(2 marks)

4 (c) (ii) Using a case study of a tropical rainforest, describe the effects of deforestation.

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End of Section A

Turn over for Section B

Section B

Answer **one** question from Section A and **one** question from Section B, and **one** other question from **either** Section A **or** Section B.

Use case studies to support your answers where appropriate.

Total for this question: 25 marks

5 Water on the Land

5 (a) Describe how a river erodes.

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(3 marks)

5 (b) (i) Study **Figure 9** on the insert, a photograph of the River Tees in its middle course.
Figure 10 is a black and white copy of **Figure 9**.
Label **Figure 10** to show **three** characteristics of the channel and the valley.

Figure 10

(3 marks)

Question 5 continues on the next page

5 (b) (ii) Draw a labelled cross-section to show how the inside bend of a meander is different from the outside bend of a meander.

(4 marks)

5 (b) (iii) Explain the formation of an ox-bow lake.

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5 (c) (i) Study **Figure 11**, newspaper cuttings about the causes of flooding.

Figure 11

Use **Figure 11** to explain why rivers flood.

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(3 marks)

Question 5 continues on the next page

5 (c) (ii) Hard and soft engineering strategies are used to manage flooding.
Choose **either** hard engineering **or** soft engineering and explain why it is the better strategy.

Chosen strategy .....

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Total for this question: 25 marks

6 Ice on the Land

6 (a) (i) Describe the features of the glacial budget.

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(3 marks)

6 (a) (ii) Study **Figure 12** on the insert, a map of the Athabasca Glacier in Canada. Describe the changes in the Athabasca Glacier shown in **Figure 12**.

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(3 marks)

Question 6 continues on the next page

6 (a) (iii) Suggest reasons for the retreat of the glacier shown in **Figure 12**.

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6 (b) Study **Figure 13** on the insert, a photograph of the Athabasca Glacier in Canada. Describe the characteristics of the glacier shown in **Figure 13**.

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(3 marks)

6 (c) Explain the formation of a glacial trough.

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Question 6 continues on the next page

6 (d) Avalanches are a hazard affecting Alpine areas.
Explain why avalanches occur.

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Total for this question: 25 marks

7 The Coastal Zone

7 (a) (i) Draw a labelled diagram to show the process of longshore drift.

(3 marks)

7 (a) (ii) Explain why deposition occurs at certain places along the coast.

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(3 marks)

Question 7 continues on the next page

7 (b) (i) Study **Figure 14** on the insert, a photograph of part of the UK coastline. Describe the landforms shown in **Figure 14**.

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(3 marks)

7 (b) (ii) Explain the formation of headlands and bays.

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7 (c) Using a case study, discuss the effects of cliff collapse on people's lives and the environment.

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Question 7 continues on the next page

7 (d) Study **Figure 15** on the insert, which shows coastal management along the Holderness coastline.
Explain the predicted changes to the coastline.

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END OF QUESTIONS

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Figure 5a: © Crown Copyright 2008, the Met Office
Figure 5b: © NEODAAS/University of Dundee