

Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

For Examiner's Use	
Examiner's Initials	
Question	Mark
1	
2	
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7	
TOTAL	



General Certificate of Secondary Education  
Higher Tier  
June 2014

# Geography (Specification A)

90301H

H

## Unit 1 Physical Geography

Tuesday 13 May 2014 1.30 pm to 3.00 pm

**For this paper you must have:**

- the colour insert (enclosed)
  - a pencil
  - a rubber
  - a 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:**
  - **one** question from **Section A (Questions 1 – 4)**
  - **one** question from **Section B (Questions 5 – 7)**
  - **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 are reminded of the need for good English and clear presentation in your answers. Where applicable, questions should be answered in continuous prose. Quality of written communication will be assessed in all answers.

**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.



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### 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) Study **Figure 1**, a table showing the largest and deadliest earthquakes from 2008 to 2012.

**Figure 1**

Year	Largest Earthquakes			Deadliest Earthquakes		
	Location	Magnitude (Richter Scale)	Number of deaths	Location	Magnitude (Richter Scale)	Number of deaths
2012	Sumatra	8.6	No data	Philippines	6.7	113
2011	Japan	9.0	20 896	Japan	9.0	20 896
2010	Chile	8.8	507	Haiti	7.0	316 000
2009	Samoa Islands	8.1	192	Sumatra	7.5	1 117
2008	China	7.9	87 587	China	7.9	87 587



1 (a) (i) To what extent is there a relationship between the largest and deadliest earthquakes shown in **Figure 1**?

[3 marks]

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1 (a) (ii) Outline **one** reason why the largest earthquakes do not always cause the most deaths.

[2 marks]

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**1 (b)** Draw an annotated diagram to explain why earthquakes occur at destructive plate margins.

**[4 marks]**



**1 (c)** Study **Figures 2a, 2b** and **2c** on the insert, photographs showing responses to the earthquake in Christchurch, New Zealand in 2010.

Use **Figures 2a, 2b** and **2c** and your own knowledge to describe how the three Ps (predict, protect and prepare) can help to reduce the effects of earthquakes.

**[8 marks]**

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**1 (d) (i)** What are fold mountains?

**[2 marks]**

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1 (d) (ii) Use a case study to describe how people use fold mountains.

[6 marks]

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**Total for this question: 25 marks**

**2 Rocks, Resources and Scenery**

**2 (a)** Outline the characteristics of igneous rocks.

**[2 marks]**

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**2 (b)** Describe the links between different rock types in the rock cycle.

**[4 marks]**

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**2 (c)** Study **Figure 3** on the insert, a photograph of limestone pavement at Malham Cove in the Yorkshire Dales.

**Figure 4** is a black and white copy of **Figure 3**.

**2 (c) (i)** On **Figure 4**, mark with an arrow and label **three** characteristics of the limestone pavement.

**[3 marks]**

**Figure 4**





**2 (c) (ii)** Explain the formation of limestone pavement.

**[6 marks]**

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**2 (d)** Outline why underground features are found in areas of Carboniferous limestone.

**[2 marks]**

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**2 (e)** Study **Figures 5a–5d** on the insert, photographs showing uses of areas of different rock types.

With the help of **Figures 5a–5d**, describe how people use areas of **two or more** different rock types.

**[8 marks]**

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**Total for this question: 25 marks**

**3 Challenge of Weather and Climate**

**3 (a) (i)** Study **Figure 6** on the insert, a map showing average annual sunshine hours in the UK between 1981 and 2010.

Describe the pattern of average annual sunshine hours shown in **Figure 6**.

**[3 marks]**

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**3 (a) (ii)** Outline why average annual sunshine hours vary in the UK.

**[2 marks]**

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**3 (b) (i)** What is global climate change?

**[2 marks]**

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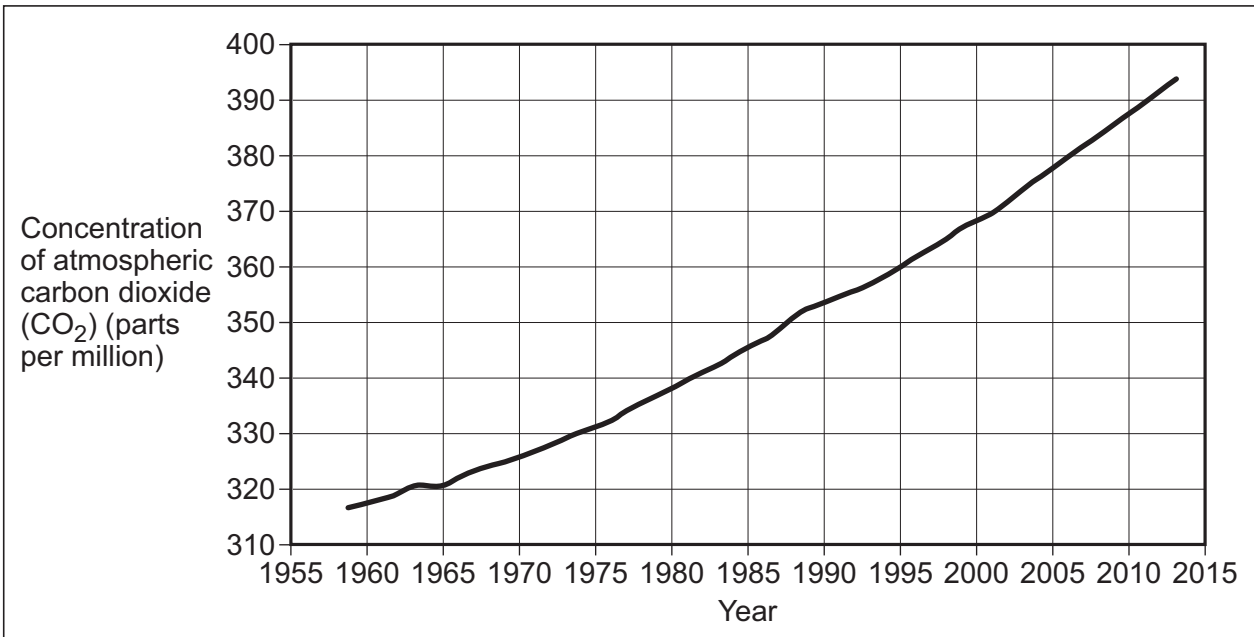
**Question 3 continues on the next page**

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3 (b) (ii) Study **Figure 7**, information about global warming.

**Figure 7**



Global warming is perhaps the most serious environmental issue of our time. This is because the world's population is growing rapidly. The graph above illustrates carbon dioxide (CO<sub>2</sub>) levels measured annually. Furthermore, methane levels have already doubled, so thickening the 'chemical blanket'.

With the help of **Figure 7**, explain possible causes of global warming.

**[4 marks]**

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**3 (b) (iii)** Describe local responses to the threat of global climate change.

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3 (c) Study **Figure 8**, a variety of newspaper headlines about weather in the UK.

**Figure 8**



© The Times 2013

'UK weather is becoming more extreme.'  
Use **Figure 8** and your own knowledge to discuss this statement.

**[8 marks]**

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**Total for this question: 25 marks**

**4 Living World**

**4 (a)** Study **Figure 9** on the insert, a photograph of vegetation in Death Valley, part of the Mojave Desert in the USA.

**4 (a) (i)** Describe the vegetation shown in **Figure 9**.

**[3 marks]**

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**4 (a) (ii)** Explain how vegetation in hot deserts adapts to the climate.

**[4 marks]**

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4 (a) (iii) Outline **one** way in which vegetation in a hot desert adapts to the soil.

[2 marks]

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4 (b) (i) What is tropical rainforest?

[2 marks]

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4 (b) (ii) Explain why deforestation occurs in tropical rainforests.

[6 marks]

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4 (c) Study **Figure 10**, extracts from geography textbooks about international co-operation in managing tropical rainforests.

**Figure 10**

**Carbon credits**  
Rich countries can 'offset' their carbon emissions by buying 'carbon credits'. Money is paid to poor countries to maintain their rainforest.

**Carbon sinks**  
In 2008 the Gola Forest on Sierra Leone's southern border with Liberia was protected from further deforestation by becoming a National Park. The 75 000 hectare park is supported by money from the European Commission, the French government and non-governmental organisations (NGOs) such as the Royal Society for the Protection of Birds (RSPB).

Use **Figure 10** and your own knowledge to explain how international co-operation can ensure that tropical rainforests are managed sustainably.

**[8 marks]**

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**End of Section A**

**Turn over for Section B**

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## 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

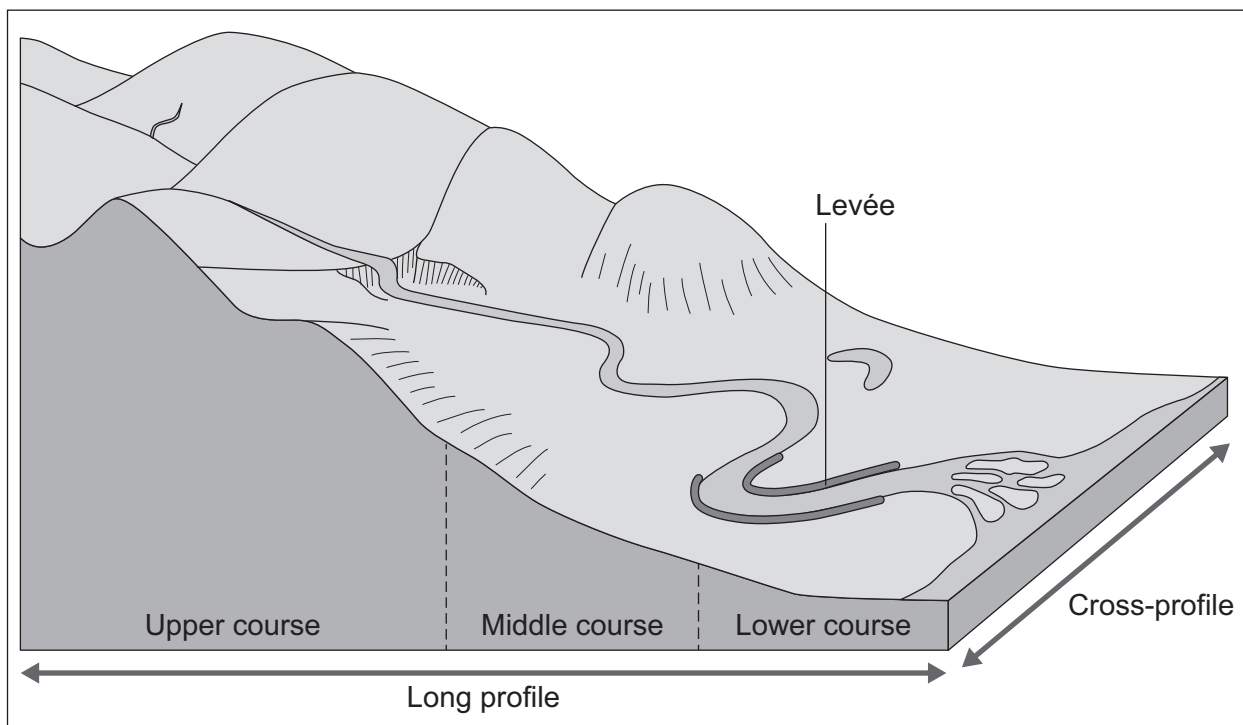
**5 (a) (i)** Study **Figure 11**, a block diagram showing how river landforms change downstream.

A levée is labelled on **Figure 11**.

Mark with an arrow and label **three other different** landforms – one found in each of the upper, middle and lower course of the river.

**[3 marks]**

**Figure 11**



**5 (a) (ii)** With the help of **Figure 11**, describe how the shape of a river valley changes downstream.

**[4 marks]**

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**5 (a) (iii)** A levée is shown in **Figure 11**. What are levées?

**[2 marks]**

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5 (a) (iv) Explain the formation of levées.

[4 marks]

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5 (b) (i) What is river flooding?

[2 marks]

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5 (b) (ii) Outline **one physical** cause of flooding.

[2 marks]

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5 (c) Study **Figure 12** on the insert, a photograph of an information board describing flood management in Boscastle, Cornwall.

With the help of **Figure 12**, explain how hard and soft engineering strategies help to manage the risk of flooding in areas such as Boscastle.

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**Total for this question: 25 marks**

**6 Ice on the Land**

**6 (a) (i)** **Figure 13** on the insert is a map showing the extent of sea ice in the Arctic Ocean on 26 August 2012.

Describe changes in the extent of Arctic sea ice shown in **Figure 13**.

**[2 marks]**

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**6 (a) (ii)** Suggest reasons for the changes in the extent of Arctic sea ice shown in **Figure 13**.

**[4 marks]**

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**6 (b) (i)** Figure 14 on the insert is a photograph of Tal-y-Llyn in mid-Wales.

Draw a labelled sketch of the lake shown in **Figure 14**.

**[3 marks]**



**Question 6 continues on the next page**

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**6 (b) (ii)** A truncated spur is identified in **Figure 14** on the insert.  
Describe a truncated spur.

**[2 marks]**

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**6 (b) (iii)** Explain the formation of a truncated spur.

**[4 marks]**

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**6 (c) (i)** What is an avalanche?

**[2 marks]**

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6 (c) (ii) **Figure 15** is a newspaper extract describing some issues in areas that are covered in snow and ice.

**Figure 15**

**The scaling of Everest, spectacle of tourist industry excess**

This year has been the busiest in the 59 years since Sir Edmund Hillary and Tenzing Norgay first conquered the world’s tallest peak. At least ten climbers, exhausted and dazed by the high altitude and lack of oxygen, have died on its slopes.

The high death toll, pictures of hundreds of climbers ascending in “traffic jams” on fixed lines and tales of rubbish, human waste and bodies strewn across the mountainside, have provoked criticism that – far from its glorious image as the peak of human achievement – scaling Everest is becoming something else: a commercialised tourist attraction, in which crowds of often inexperienced climbers pay up to \$110,000 (£72,000) to be taken to the top by sherpas, often with little regard for their own safety, or that of others.

A blogger who monitored the Everest climbing season said that 548 people climbed over a four day period this year, which is an average of 137 people per day. That is 58 per cent more crowded than 2007. The Nepalese Government now charges \$10,000 per person. Many people have called for stricter rules on issuing permits in order to limit numbers.

© The Times, 2/6/2012

With the help of **Figure 15**, discuss environmental and economic issues caused by tourism in areas covered by snow and ice.

**[8 marks]**

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**Total for this question: 25 marks**

**7 The Coastal Zone**

**7 (a)** Briefly describe how weathering can affect the coast.

**[2 marks]**

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**7 (b)** **Figure 16** on the insert is a photograph of the coast in Cornwall.

**7 (b) (i)** Describe the landforms found in Zone A in **Figure 16**.

**[3 marks]**

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**7 (b) (ii)** A beach is shown in **Figure 16**.

Describe this beach.

**[2 marks]**

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7 (b) (iii) Explain the formation of a beach.

[4 marks]

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7 (c) (i) What is cliff collapse?

[2 marks]

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7 (c) (ii) Explain why cliffs collapse.

[4 marks]

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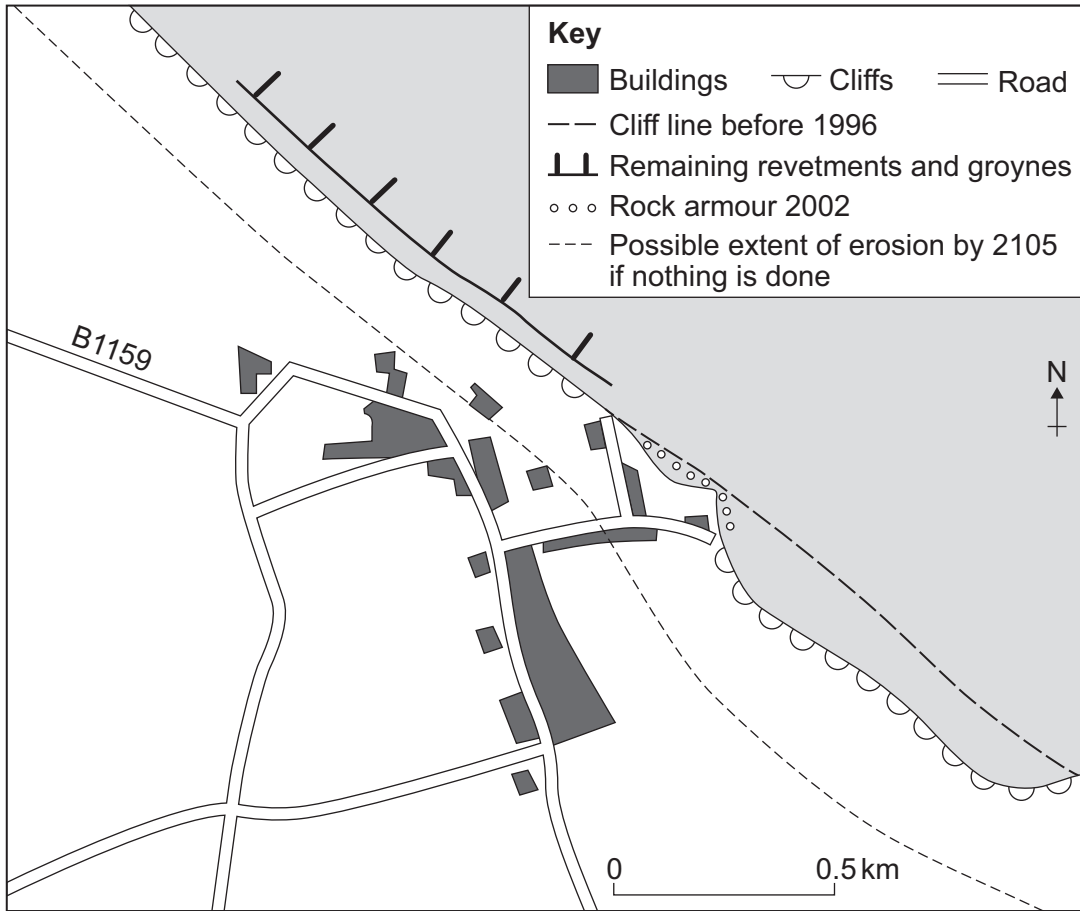
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7 (d) Figure 17 shows hard engineering strategies at Happisburgh in Norfolk.

Figure 17



With the help of **Figure 17**, discuss the costs and benefits of using hard engineering to reduce the risk of cliff collapse.

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**END OF QUESTIONS**



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Figure 7 (graph): NOAA  
Figure 8: © The Times 2013  
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Figure 17: Coastal diagram taken from Lucy Prentice's 'Geofile Online 537 Happisburgh: North Norfolk Coast Shoreline Management Plan DME', published by Nelson Thornes in January 2007.

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