

Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

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



General Certificate of Secondary Education  
Higher Tier  
June 2010

# Geography (Specification A)

40301H

H

Unit 1 Physical Geography

Monday 14 June 2010 9.00 am to 10.30 am

For this paper you must have:

- the colour insert.
- 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**, **one** question from **Section B**, and **one** further 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.



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### Section A

You must answer at least **ONE** question but **not more than TWO** questions in this section.

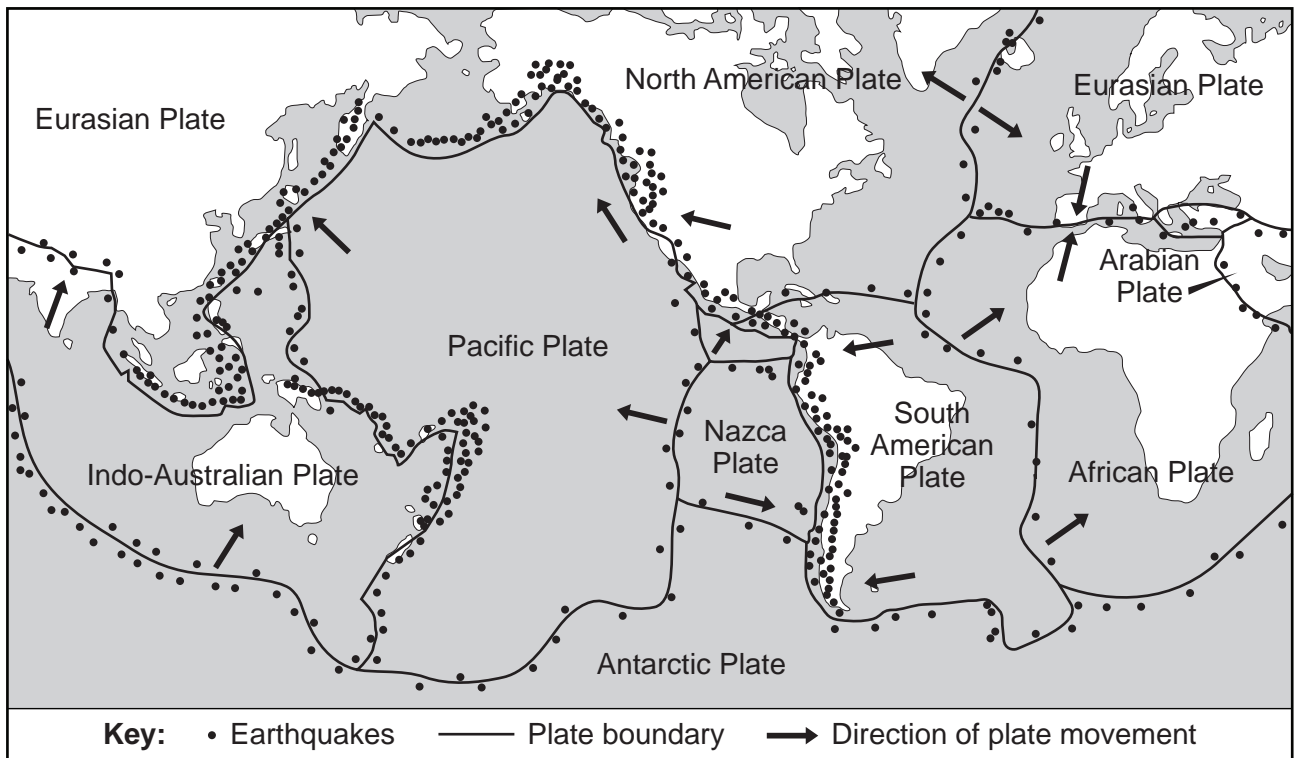
Use case studies to support your answers where appropriate.

#### 1 The Restless Earth

Total for this question: 25 marks

1 (a) Study **Figure 1** which shows the earth's tectonic plates and the places where earthquakes occur worldwide.

Figure 1



1 (a) (i) Describe the distribution of earthquakes.

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(3 marks)



**1 (a) (ii)** Draw a labelled diagram(s) to explain why earthquakes occur at conservative plate boundaries.



(4 marks)

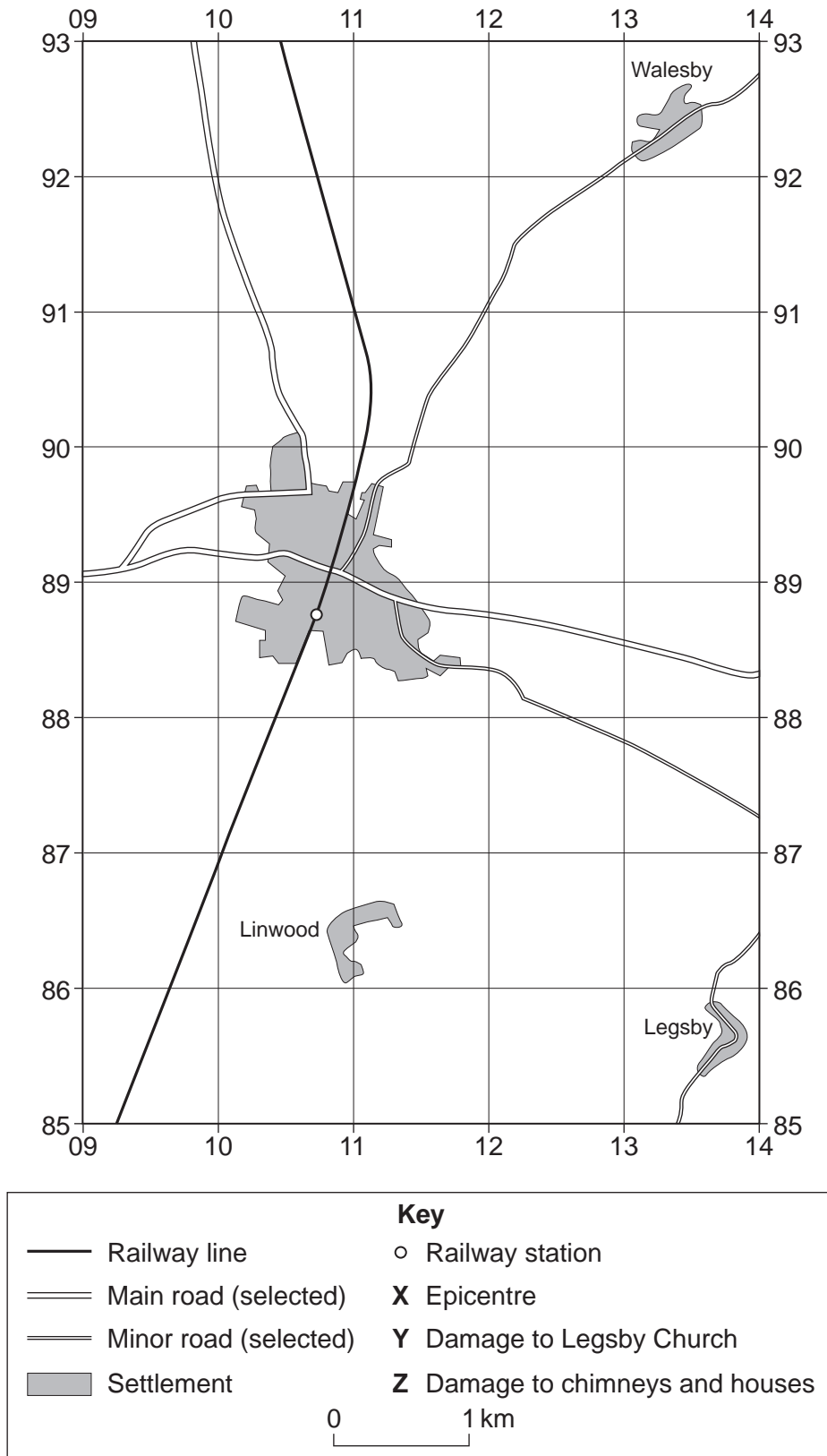
**Question 1 continues on the next page**

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- 1 (b) Study **Figure 2**, on the insert, a 1:50 000 Ordnance Survey map extract of Market Rasen, Lincolnshire. An earthquake struck Market Rasen on 27 February 2008. **Figure 3** is a sketch map drawn from **Figure 2**.

**Figure 3**



1 (b) (i) The epicentre of the earthquake was 4 km north of the railway station in Market Rasen.  
On **Figure 3**, mark the position of the epicentre with the letter **X**.  
(2 marks)

1 (b) (ii) Damage was reported to Legsby parish church in grid square 1385 and to chimneys of  
houses at grid reference 108892.  
On **Figure 3**, draw two arrows to show where this damage occurred.  
Label these arrows with the correct letters **Y** and **Z** from the key.  
(3 marks)

1 (b) (iii) The earthquake measured 5.2 on the Richter Scale.  
With the help of **Figure 2** and your own knowledge, explain why the damage was  
limited.

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**1 (c)** Use a case study to describe the responses to a tsunami.

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**2 Rocks, Resources and Scenery**

**Total for this question: 25 marks**

**2 (a)** Study **Figure 4**, on the insert, which shows (part of) a geological timescale

**2 (a) (i)** Use **Figure 4** to describe how an 'era' is different from a 'period' on a geological timescale.

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*(2 marks)*

**2 (a) (ii)** Use the information in **Figure 4** to complete the table below.

<b>Period</b>	<b>Rock Type</b>	<b>Age (millions of years)</b>
Carboniferous		360 – 290
	Granite	290 – 245
Cretaceous	Chalk and Clay	

*(3 marks)*





**2 (b) (i)** Study **Figure 5**, on the insert, which is a photograph of Malham Cove, a limestone area in Yorkshire.  
Describe the features of the rock type and the landscape.

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(4 marks)

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**2 (b) (ii)** Describe how carbonation occurs.

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(3 marks)

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**2 (c)** Study **Figure 6**, on the insert, a 1:50 000 Ordnance Survey map extract of Westbury, Wiltshire. The quarry is marked **X** on the map.  
Use **Figure 6** to suggest environmental disadvantages of the quarry at **X**.

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(4 marks)

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**2 (d)** Using a case study of a quarry you have studied, describe how it has been managed during extraction and restored following the extraction of the resources.

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**3 Challenge of Weather and Climate**

**Total for this question: 25 marks**

**3 (a)** Study **Figure 7**, on the insert, which shows average July temperatures for the United Kingdom.

**3 (a) (i)** Describe how average July temperatures vary in the UK.

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*(3 marks)*

**3 (a) (ii)** Explain why average July temperatures vary in different parts of the UK.

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**3 (b)** Study **Figure 8**, on the insert, which describes floods in Hull in June 2007.  
Use **Figure 8** to give evidence that supports the following statement:  
**‘The UK weather is becoming more extreme.’**

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(4 marks)

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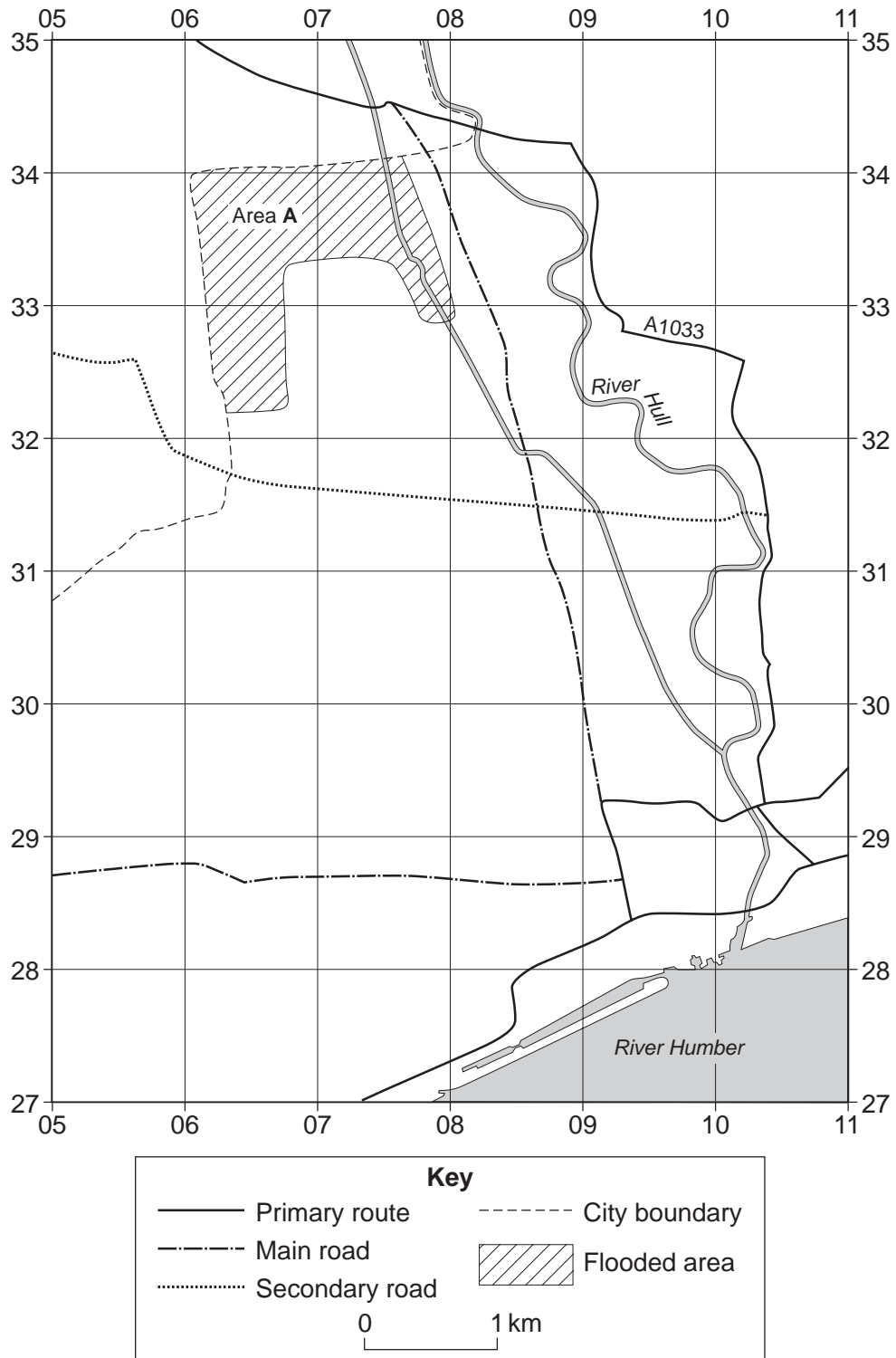


**3 (c)** Study **Figure 9**, on the insert, a 1:50 000 Ordnance Survey map extract of part of Kingston Upon Hull, East Yorkshire.

**3 (c) (i)** Bransholme is an area that was flooded in June 2007. Using **Figures 8** and **9**, shade in the flooded area of Bransholme on **Figure 10**, a sketch map of the area.

(2 marks)

**Figure 10**



**3 (c) (ii)** Use **Figure 9** to describe area **A** shown in **Figure 10**.

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*(3 marks)*

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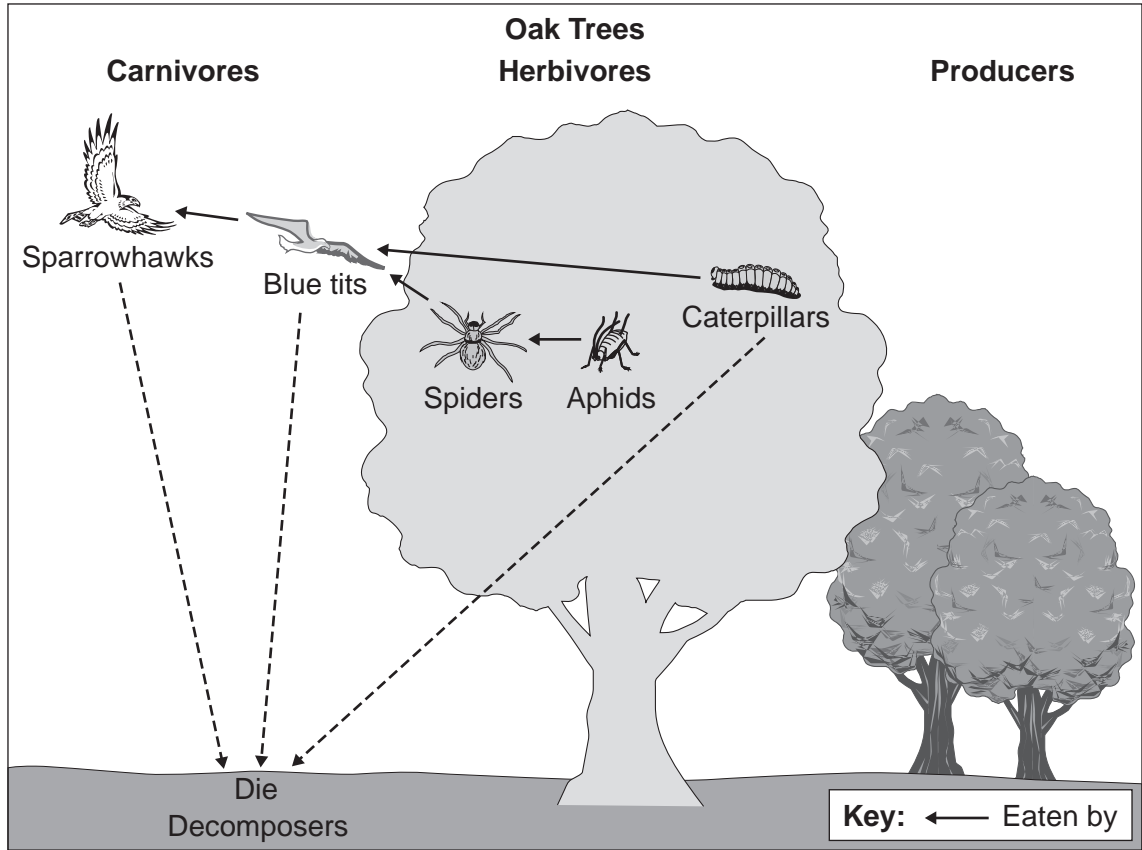


4 Living world

Total for this question: 25 marks

4 (a) Study Figure 11 which shows part of a deciduous forest ecosystem.

Figure 11



4 (a) (i) Explain the importance of the tree in the food web.

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(3 marks)



**4 (a) (ii)** Explain how nutrients in the tree are recycled in the deciduous forest ecosystem.

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**4 (b)** Study **Figure 12**, on the insert, a 1:50 000 Ordnance Survey map extract of part of Epping Forest, a deciduous forest near London.

**4 (b) (i)** Measure the distance along the A104 from the roundabout at 427994 to the road junction at 408953

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(2 marks)

**4 (b) (ii)** Use **Figure 12** to describe recreation activities in Epping Forest.

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(3 marks)



**4 (c)** Study **Figures 13a** and **13b**, on the insert, photographs of vegetation in a hot desert area.  
Describe, and suggest reason(s) for, the changes in vegetation.

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**Section B**

You must answer at least **ONE** question but **not more than TWO** questions in this section.

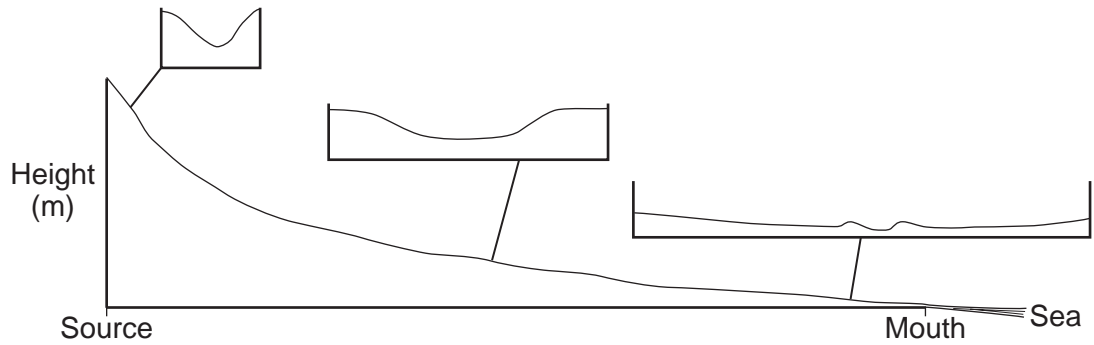
Use case studies to support your answers where appropriate.

**5 Water on the Land**

**Total for this question: 25 marks**

**5 (a)** Study **Figure 14** which shows a long profile and cross profiles of a typical river.

**Figure 14**



Describe how the cross profile changes downstream.

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*(3 marks)*





**5 (b) (i)** Study **Figure 15**, on the insert, a photograph of a waterfall in the Glens of Antrim, Northern Ireland.  
Describe the features of the waterfall shown in **Figure 15**.

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*(3 marks)*

**5 (b) (ii)** Draw a labelled diagram(s) to explain the formation of a waterfall

*(4 marks)*

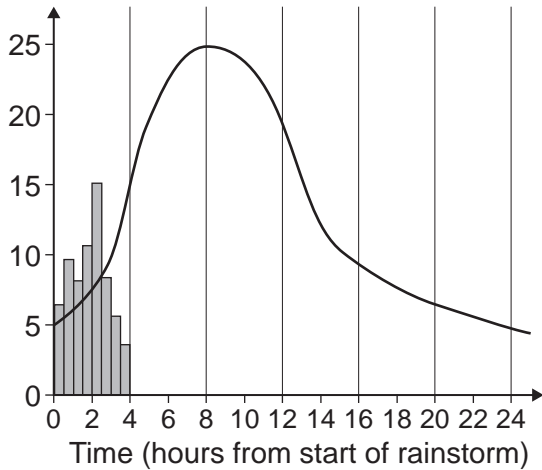
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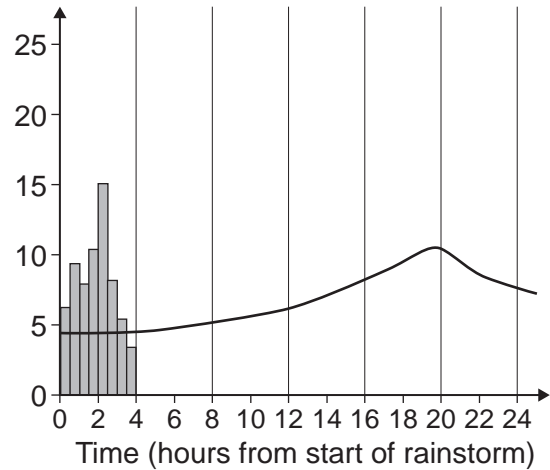


**5 (c)** Study **Figures 16a** and **16b** which are hydrographs for two different streams in North Yorkshire after the same storm.  
A hydrograph shows the link between rainfall and discharge in a river.

**Figure 16a**  
**Austwick Beck**



**Figure 16b**  
**Clapham Beck**



**5 (c) (i)** Contrast the hydrograph for Austwick Beck with that for Clapham Beck.

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5 (c) (ii) Suggest why the two hydrographs are different.

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5 (d) Explain how the demand for water is met within the UK.

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**6 Ice on the Land**

**Total for this question: 25 marks**

**6 (a)** Study **Figure 17**, on the insert, a map showing how the ice cover in the northern hemisphere has changed.

**6 (a) (i)** Describe the changes in ice cover shown in **Figure 17**.

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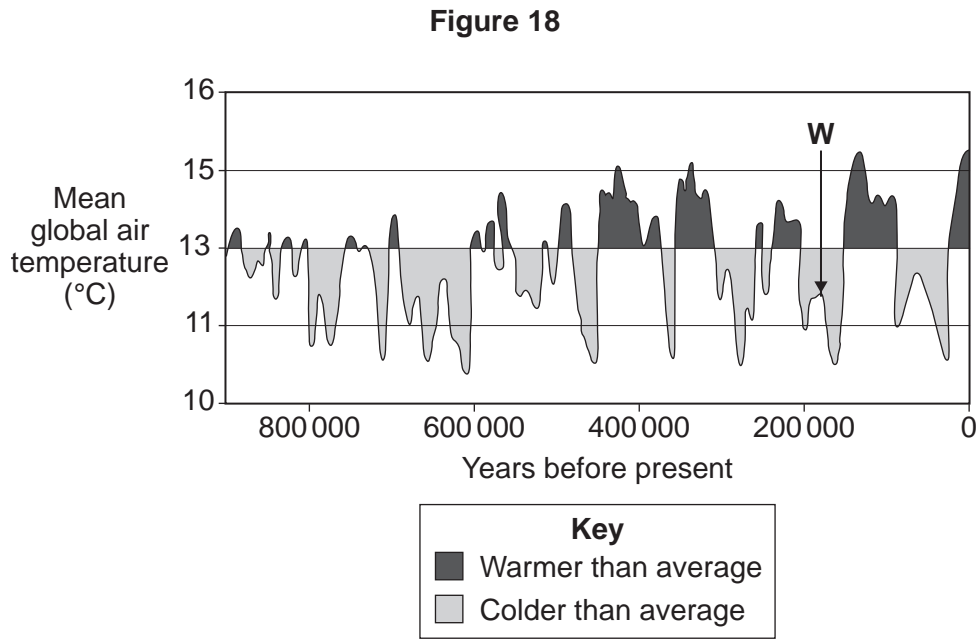
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6 (a) (ii) Study **Figure 18**, a timeline of the mean world temperatures over the past million years.



The table below states some facts about the timeline.

On **Figure 18**, mark with an arrow and add the correct letter (**X**, **Y** or **Z**) to show each of the following facts on the timeline.

The letter **W** has been done for you.

<b>W</b>	<b>Previous Ice Age</b>
<b>X</b>	Recent rapid rise in global temperatures
<b>Y</b>	The period when the mean global air temperature was lowest
<b>Z</b>	A period when the mean global air temperature was between 13°C and 15°C

(3 marks)

6 (b) Study **Figure 19**, on the insert, which shows changes in average global temperatures from 1850 to 2007.

Describe the changes in average global temperatures shown in **Figure 19**.

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**6 (c) (i)** Describe how ice transports material.

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**6 (c) (ii)** Moraine is a glacial landform.  
Explain its formation.

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**7 The Coastal Zone**

**Total for this question: 25 marks**

**7 (a)** Mass movement is a process affecting the coastal zone. Describe this process.

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*(3 marks)*

**Question 7 continues on the next page**

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- 7 (b) (i) Study **Figure 20**, on the insert, which shows the coastal zone of Antrim, Northern Ireland.  
**Figure 21** is a black and white copy of **Figure 20**.  
On **Figure 21**, mark with an arrow and label **three** landforms shown on this coast.

**Figure 21**



(3 marks)



**7 (b) (ii)** Explain the formation of landforms shown in the rectangle marked **X** on **Figure 20**.

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**7 (c) (i)** Explain why sea level is expected to rise.

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**7 (c) (ii)** Use a case study to describe economic effects of coastal flooding.

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**7 (d)** Study **Figure 22** which shows hard and soft engineering strategies used to protect the coast at Lyme Regis, a town in Dorset.

**Figure 22**

**Figure 22** is not reproduced here due to third-party copyright constraints.

Explain why coastal areas such as Lyme Regis use both hard and soft engineering strategies.

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**END OF QUESTIONS**



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Figure 22: J WIDDOWSON, J SMITH and R KNILL, *Understanding GCSE Geography in Focus* (2001), John Murray (Publishers) Ltd.

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