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
Foundation Tier
June 2011

Geography (Specification A)

40301F

F

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) Are the following statements about continental crust and oceanic crust **true** or **false**? Tick the correct boxes.

	True	False
Oceanic crust can be destroyed.	☐	☐
Oceanic crust is generally lighter than continental crust.	☐	☐
Continental crust is generally older than oceanic crust.	☐	☐

(3 marks)

1 (b) (i) Study **Figure 1** on the insert, a photograph of Mount Vesuvius, a volcano in Italy. Three characteristics of the volcano are shown by **X**, **Y** and **Z** on **Figure 1**. Write labels for **X**, **Y** and **Z**.

X .....

Y .....

Z .....

(3 marks)

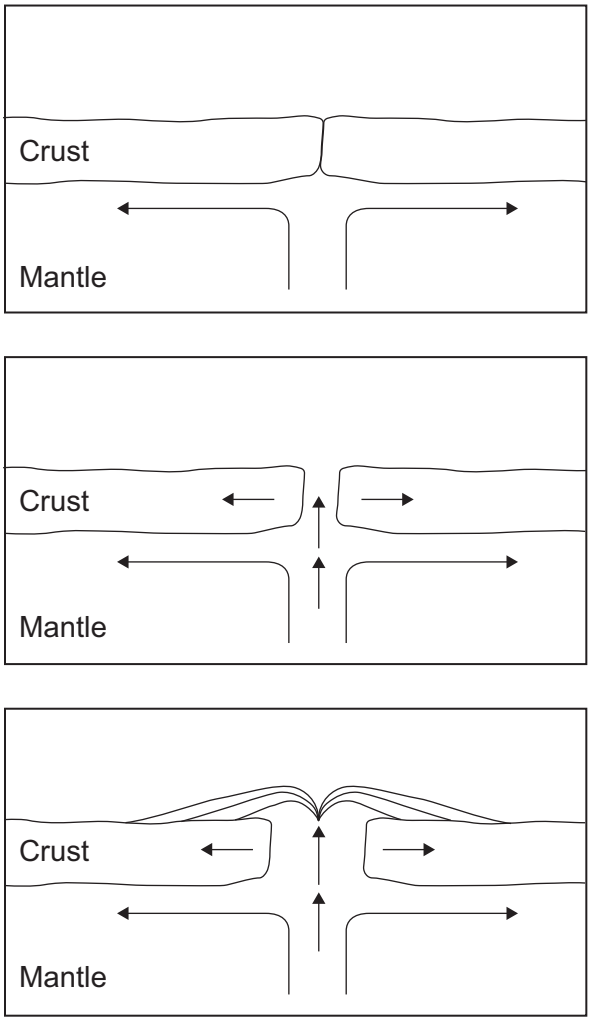
1 (b) (ii) Is the volcano shown in **Figure 1** a composite volcano or a shield volcano? Circle the correct answer.

Composite **Shield**

(1 mark)

1 (b) (iii) **Figure 2** shows that volcanoes are formed at constructive plate boundaries.
Write a sentence in each box to explain why volcanoes occur at constructive plate boundaries.

Figure 2



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(3 marks)

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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(6 marks)

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1 (d) (i) Study **Figure 3** on the insert, photographs of how people use fold mountains.
Choose **one** of the photographs – **A**, **B**, **C** or **D**.
Describe how people are using fold mountains in the photograph you have chosen.

Photograph chosen .....

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(3 marks)

1 (d) (ii) Fold mountain areas suffer from limited communications, steep slopes and poor soils.

Describe how people have coped with **one or more** of these problems.

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(4 marks)

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Turn over for the next question

Total for this question: 25 marks

2 Rocks, Resources and Scenery

2 (a) The following statements are about the different rock types – **igneous**, **sedimentary**, and **metamorphic**.
Write the correct rock type in the box next to each statement.

Limestone and clay are examples of this rock type. ☐

This rock type forms when magma cools. ☐

Heat and pressure have changed these rocks. ☐

This rock type forms in layers. ☐

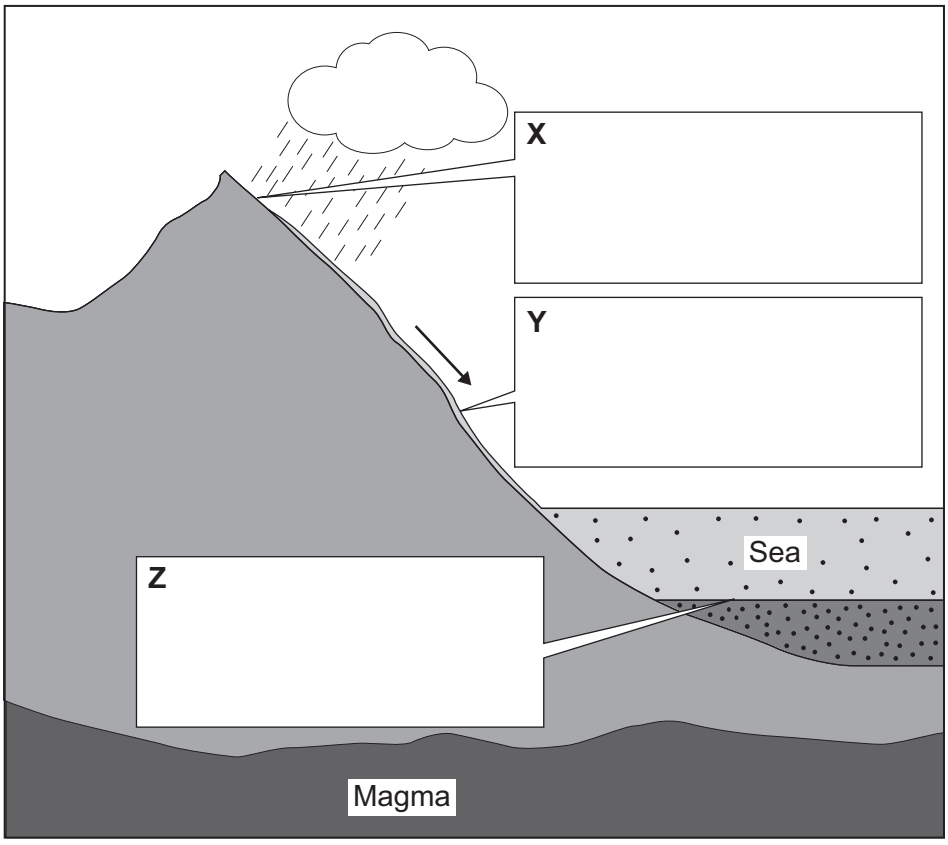
(4 marks)

2 (b) Study **Figure 4** which shows part of the rock cycle.

On **Figure 4**, write a label for **X**, **Y** and **Z** to show the processes taking place.

(3 marks)

Figure 4



2 (c) (i) What is 'weathering'?

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(2 marks)

2 (c) (ii) Complete the paragraph below to describe exfoliation.
Choose the correct words from this list.

expand	**peel**	**faster**
slower	**contract**	**harden**

During the day, the sun heats the rock. The outer layers heat up

……..……. than the inner layers. These ……..……..……. more than

the inner layers. At night, the outer layers cool faster than the inner layers.

Repeated heating and cooling causes the surface of the rock to

……..……. .

(3 marks)

Question 2 continues on the next page

2 (d) Study **Figure 5** on the insert, a photograph of Hay Tor on Dartmoor, Devon. Describe this granite tor and explain its formation.

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2 (e) (i) Describe how the extraction of building stone brings advantages to an area.

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(3 marks)

2 (e) (ii) Describe how **one** of the following rock types causes problem(s) for farmers.

granite **chalk and clay** **carboniferous limestone**

Circle the rock type chosen.

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(4 marks)

Extra space .....

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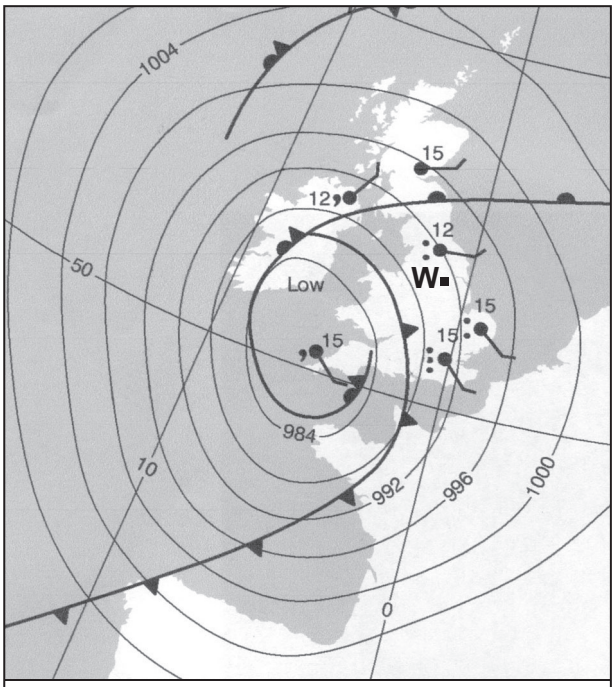
Total for this question: 25 marks

3 Challenge of Weather and Climate

3 (a) Study **Figures 6a and 6b** which show a synoptic chart and a satellite image for midday on 5 September 2008.

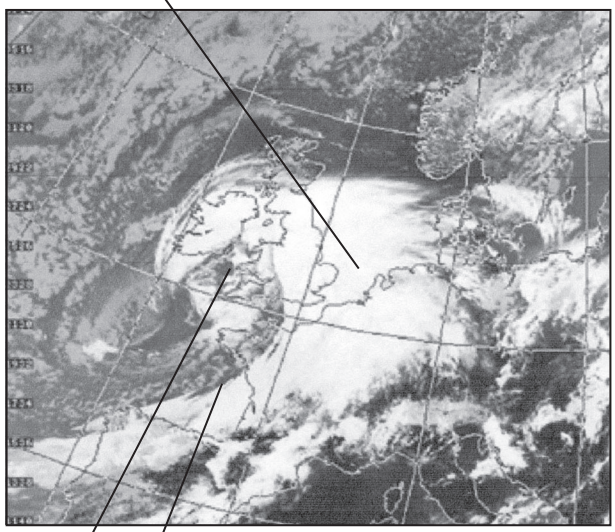
Figure 6a



Key

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

Figure 6b



Y .....

Z .....

X .....

3 (a) (i) Use **Figure 6a** to label arrows **X**, **Y** and **Z** on **Figure 6b**.
Choose the correct labels from the following list.

cold front **warm front** **centre of low pressure**

warm sector **high pressure** **occluded front**

(3 marks)

3 (a) (ii) Which type of weather system is shown in **Figure 6a**?
Circle the correct answer.

depression **anticyclone**

(1 mark)

3 (a) (iii) Describe the weather conditions in Leeds (marked **W** on **Figure 6a**) at midday on 5 September 2008.

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(3 marks)

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

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(6 marks)

Question 3 continues on the next page

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3 (c) (i) Study **Figure 7** on the insert, which shows predicted global, Northern hemisphere and Southern hemisphere temperature change from 2000 to 2100.
Use information from **Figure 7** to complete the Fact File below.

Overall trend of global temperatures	
Predicted change in temperature in the Southern Hemisphere between 2000 and 2100	ºCelsius
Year when predicted temperature in the Northern Hemisphere will have changed by 2ºC for the first time	

(3 marks)

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

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(2 marks)

3 (c) (iii) What evidence is there to suggest that people are not the only cause of global warming.

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(3 marks)

3 (c) (iv) Describe the possible environmental consequences of climate change for the UK.

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(4 marks)

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Total for this question: 25 marks

4 Living World

4 (a) Study **Figure 8** on the insert, which shows the distribution of three ecosystems.

4 (a) (i) The following statements are about the distribution of ecosystems shown in **Figure 8**. Tick the **three** correct statements.

There is a greater area of hot desert in the Northern Hemisphere than the Southern Hemisphere.	
There is temperate deciduous forest on the west coast of North America.	
The Equator goes through all hot desert areas.	
The largest single area of tropical rainforest is in South America.	
There is temperate deciduous forest in western Europe.	

(3 marks)

4 (a) (ii) What is the scale of the ecosystems shown in **Figure 8**?
Circle the correct answer.

Local **Global**

(1 mark)

4 (b) (i) Study **Figure 9** on the insert, photographs which show vegetation in a hot desert.

Give a different characteristic for each type of vegetation shown in photographs **A, B and C**.

A .....

B .....

C .....

(3 marks)

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

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(6 marks)

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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) There are many effects of tropical rainforest deforestation. For each of the following statements decide whether the effect is economic, social or political.

Write **economic**, **social**, or **political** in the box next to each statement.

Locals do not have immunity to new diseases.	
Governments try to manage the forest.	
The sale of timber reduces national debt.	

(3 marks)

4 (c) (iii) Describe **one** effect of tropical rainforest deforestation on the local environment.

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(3 marks)

4 (c) (iv) Describe how logging in tropical rainforest can be sustainably managed.

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(4 marks)

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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) River channels are affected by different erosion processes.
Draw a line to link each of the statements to the correct erosion process.

Erosion process	Statement
Hydraulic action	occurs when some types of rock are dissolved in the river
Abrasion	occurs when material carried by the river knocks into other pieces of load
Attrition	occurs when the force of the water hits the bed and banks
Solution	occurs when the load carried by the river hits the bed and banks

(3 marks)

5 (b) (i) Study **Figure 10** on the insert, a photograph of the River Tees in its middle course. **Figure 11** is a black and white copy of **Figure 10**.
Label **Figure 11** to show **three** characteristics of the channel and the valley.

Figure 11

(3 marks)

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)

Question 5 continues on the next page

5 (b) (iii) Complete the paragraph below to explain the formation of an ox-bow lake. Circle the correct answer in each set of brackets.

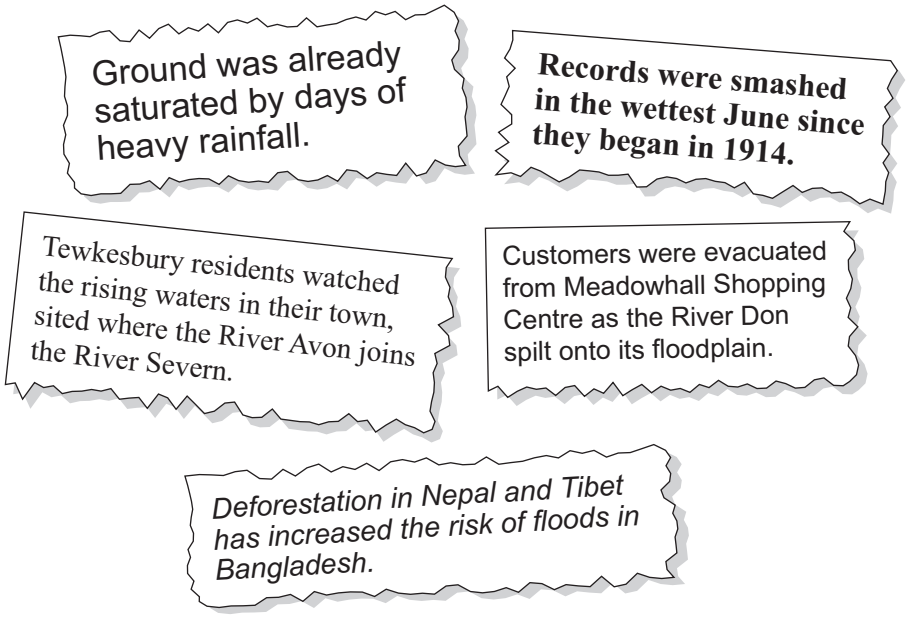
The fastest flow of water is on the [**inside** / **outside**] bend of the river.

This results in [**erosion** / **deposition**]. The outside bends move closer together as the meander neck becomes narrower. When there is a very [**high** / **low**] discharge, the river cuts across the neck and takes a straight course. The former meander is left as a [**long straight / horseshoe shaped**] ox-bow lake.

(4 marks)

5 (c) (i) Study **Figure 12**, newspaper cuttings about the causes of flooding.

Figure 12



Using **Figure 12**, give **one physical** cause and **one human** cause of flooding.

Physical .....

Human .....

(2 marks)

5 (c) (ii) Explain how snowmelt can cause rivers to flood.

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(3 marks)

5 (d) Explain how flooding can be managed using hard engineering strategies.

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(6 marks)

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Total for this question: 25 marks

6 Ice on the Land

6 (a) (i) Are the following statements about the glacial budget **true** or **false**?
Tick the correct boxes.

	True	False
Accumulation is the addition of snow to a glacier.	☐	☐
Ablation occurs when snow becomes ice.	☐	☐
The glacial budget is the balance between inputs and outputs.	☐	☐

(3 marks)

6 (a) (ii) Study **Figure 13** on the insert, a map of the Athabasca Glacier in Canada.
Use **Figure 13** to complete the Fact File below.

The year Athabasca Glacier reached its furthest extent.	
Direction of movement of Athabasca Glacier.	
The total distance the glacier has retreated between **A** and **B**.	

(3 marks)

6 (a) (iii) Suggest reasons for the retreat of the glacier shown in **Figure 13**.

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(4 marks)

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6 (a) (iv) Suggest **one** economic effect of the retreat of the glacier shown in **Figure 13**.

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(2 marks)

6 (b) Study **Figure 14** on the insert, a photograph of the Athabasca Glacier.
Describe the characteristics of the glacier shown in **Figure 14**.

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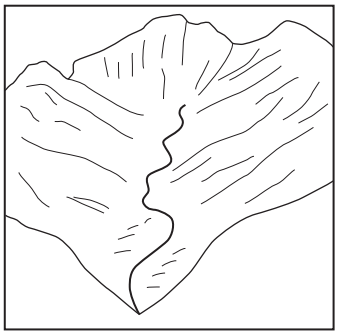
(3 marks)

Question 6 continues on the next page

6 (c) **Figure 15** shows the formation of a glacial trough.
Write a sentence in each box to explain the formation of a glacial trough.

Figure 15

Before glaciation



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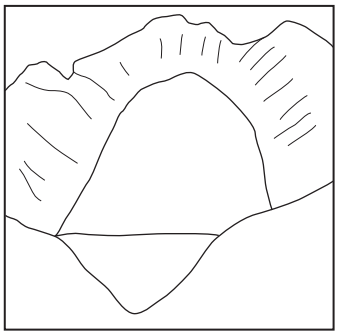
During early glaciation



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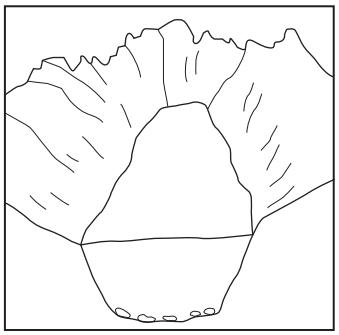
During later glaciation



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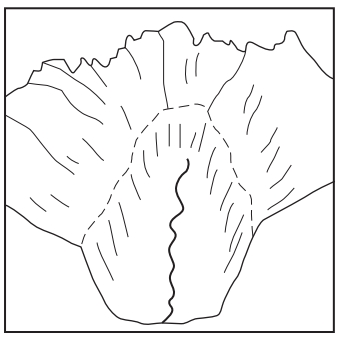
After glaciation



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(4 marks)

6 (d) Avalanches are a hazard affecting Alpine areas.
Describe the effects of avalanches.

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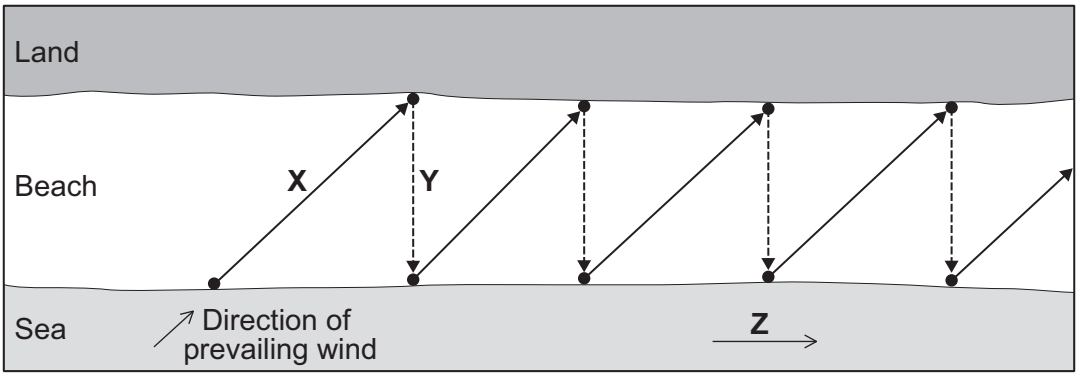
Turn over for the next question

Total for this question: 25 marks

7 The Coastal Zone

7 (a) (i) **Figure 16** shows the process of longshore drift.

Figure 16



Write labels for **X**, **Y** and **Z**.

X .....

Y .....

Z .....

(3 marks)

7 (a) (ii) Give **two** landforms that result from longshore drift.

1 .....

2 .....

(2 marks)

7 (b) (i) Study **Figure 17** on the insert, a photograph of part of the UK coastline.
Describe the landforms shown in **Figure 17**.

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(3 marks)

7 (b) (ii) Key phrases in the formation of headlands and bays are given below.
Using the key phrases, write a short paragraph to explain the formation of headlands and bays.

- land juts out into sea
- erosion occurs at different rates
- inlets, often with beaches, form in sheltered areas
- hard rock and soft rock

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Question 7 continues on the next page

7 (c) (i) The following statements are about destructive and constructive waves.
Write the correct wave type (either **destructive** or **constructive**) in the box next to each statement.

These waves have crests a long way apart. ☐

These waves are steep. ☐

These waves are more frequent. ☐

(3 marks)

7 (c) (ii) Using a case study, explain why some areas of the coast are likely to collapse into the sea.

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7 (d) Study **Figure 18** 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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