Rewarding Learning

Centre Number

71	

Candidate Number

General Certificate of Secondary Education
2014

Geography

Unit 1:
Understanding Our Natural World

Higher Tier

[GGG12]

GGG12

TUESDAY 13 MAY, AFTERNOON

TIME

1 hour 30 minutes.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
Write your answers in the spaces provided in this question paper.
Answer **all three** questions.
You are provided with an O.S. map for use with Question 1.
Do not write your answers on this map.

INFORMATION FOR CANDIDATES

The total mark for this paper is 108.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.
Quality of written communication will be assessed in Question **3(d)**.
Spelling, punctuation and the accurate use of grammar will be assessed in questions **1(f)** and **3(c)**.

For Examiner's use only	
Question Number	Marks
1	
2	
3	
Total Marks	

Theme A: The Dynamic Landscape

Examiner Only	
Marks	Remark

1 **(a)** Study the Ordnance Survey extract of part of the Norfolk coast, eastern England. Answer the questions which follow.

(i) State the height of the land shown by the spot height at

Potter Heigham GR 418199. _____ m [1]

(ii) State the direction of Eccles on Sea GR 4029 from Winterton-on-Sea GR 4919.

_____ [1]

(iii) State the straight line distance from the parking at Winterton-on-Sea GR 498198 to the parking at Sea Palling GR 427274.

_____ km [2]

(iv) Blood Hills wind farm (GR 4719) is located 1.5 km west of the popular seaside resort of Winterton-on-Sea (GR 4919). Suggest how the wind farm owners might be in conflict with the local tourist board.

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_____

_____

_____

_____

_____

_____ [3]

(v) Winterton-on-Sea has a wide sandy beach. Explain how a beach like this was formed.

Examiner Only	
Marks	Remark

[4]

Examiner Only	
Marks	Remark

(b) It has been stated that 15 km of sea defences between Eccles on Sea (GR 4029) and Winterton-on-Sea (GR 4919) will not be sustainable in fifty years time. Study **Fig. 1** which shows one coastal strategy for this area. Answer the questions which follow.

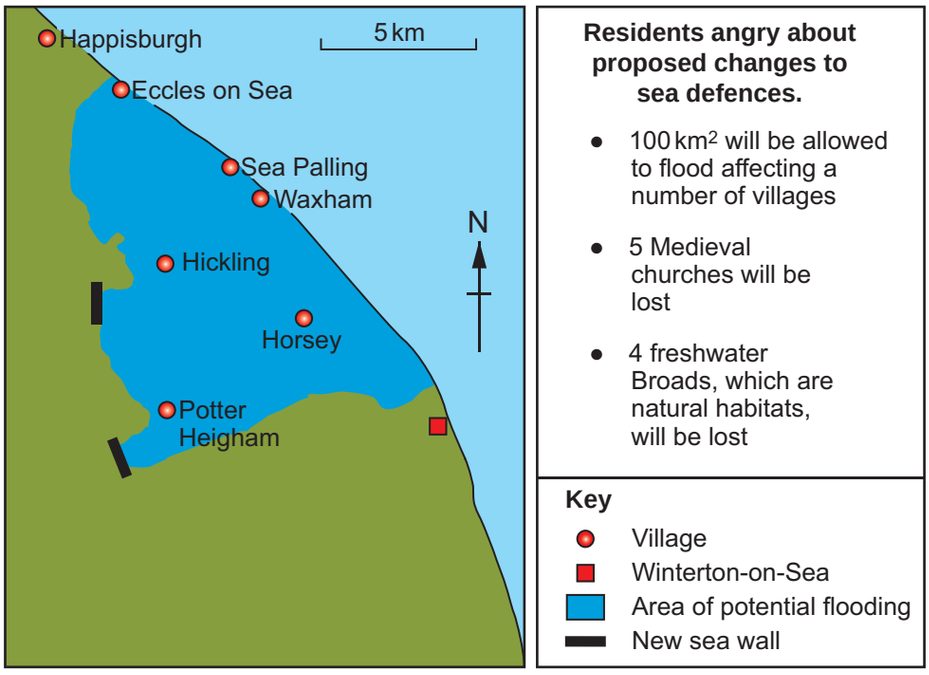

Fig. 1

(i) State the number of villages that will be lost if the area is flooded.

_____ [1]

(ii) Using the Ordnance Survey map, name **two** sea defences used along this stretch of coastline.

_____

_____ [2]

(iii) Suggest **one** reason why planners think that the area should be allowed to flood and suggest why the public could object.

Examiner Only	
Marks	Remark

_____

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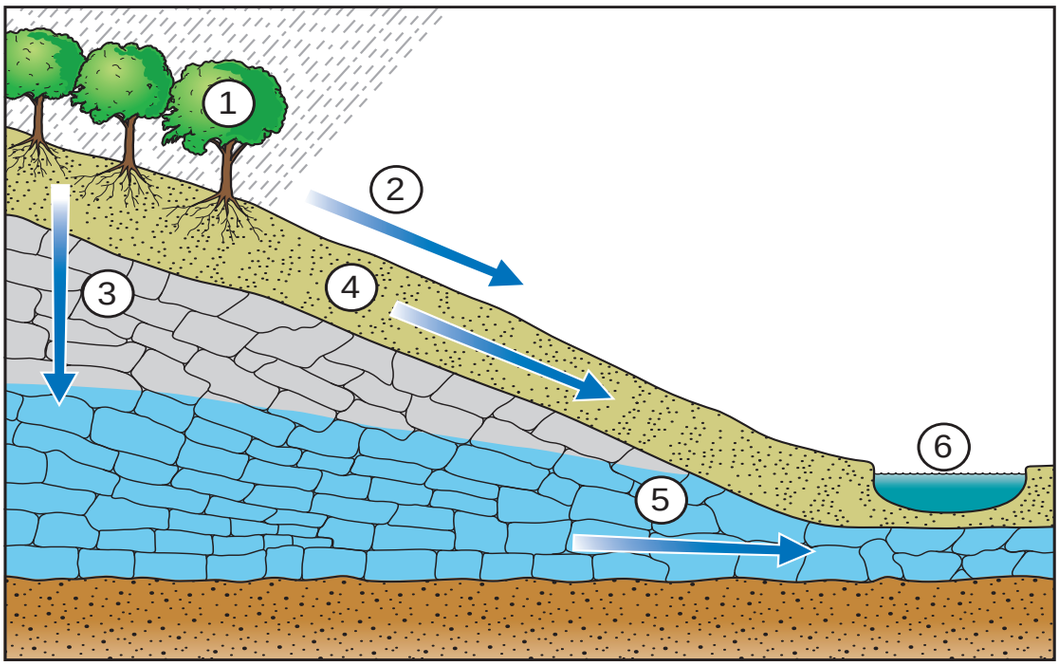
_____ [3]

(c) Study **Fig. 2** which shows how water moves in a drainage basin. Answer the questions which follow.

Examiner Only	
Marks	Remark



Source: CCEA

Fig. 2

Table 1

Key	
1	
2	
3	Percolation
4	
5	
6	River

[4]

(i) Complete **Table 1** to provide a key for **Fig. 2**. Choose your answers from the list below.

groundwater flow **discharge** **interception** **watershed**

throughflow **surface runoff**

(ii) State the meaning of the term **percolation.**

_____

_____

_____

_____ [2]

(iii) Explain how heavy rainfall on wet ground might affect the discharge of a river.

_____

_____

_____

_____

_____

_____ [3]

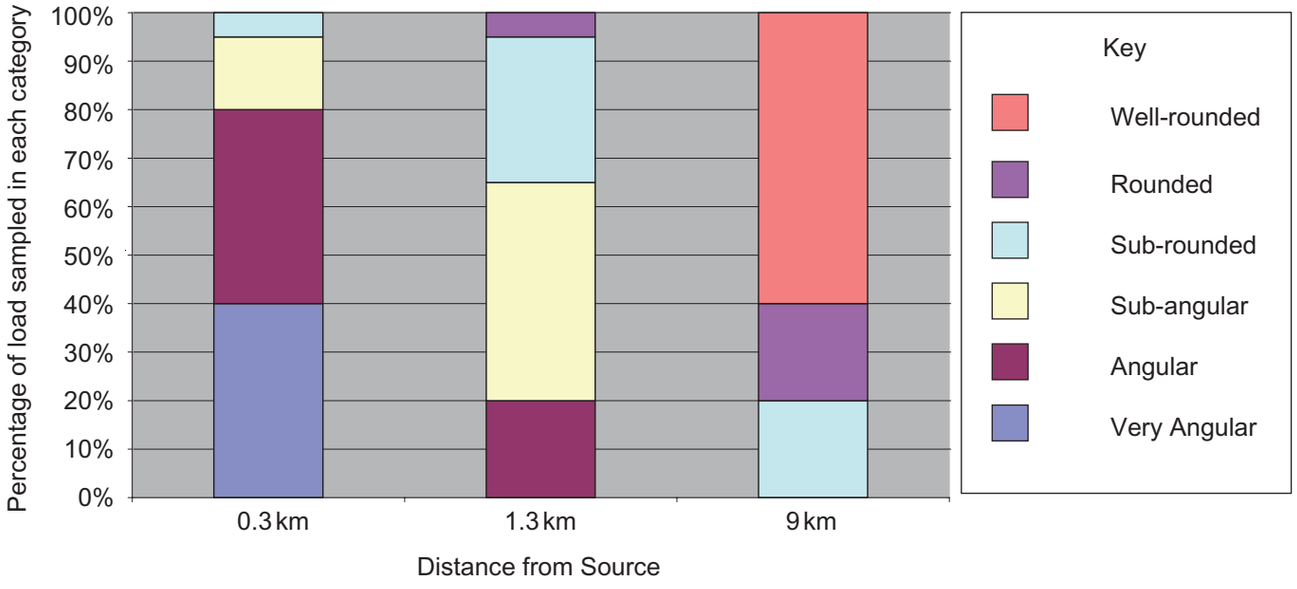
Examiner Only	
Marks	Remark

(d) Study **Table 2** and **Fig. 3** which show results from a river field trip. Answer the questions which follow.

Table 2

Distance from Source (km)	Width of River Channel (m)	Depth of River Channel (m)	Channel Gradient (degrees)	Average size of Load (cm on longest axis)
0.30	0.66	0.07	3	21.2
1.30	2.50	0.16	7.5	27.2
9.00	8.50	0.29	2.5	2.52

Compound Graph Showing Load Shape



Source: Chief Examiner

Fig. 3

(i) Describe how the river channel changes downstream using **Table 2**.

[4]

(ii) Describe and explain how the load changes with distance downstream using **Table 2** and **Fig. 3**.

[6]

Examiner Only	
Marks	Remark

(e) Study **Fig. 4** which gives information about flood damage to the town of Morpeth, North East England, in September 2012. Answer the questions which follow.

After devastating floods in 2008 the town of Morpeth was flooded again in September 2012 when the River Wansbeck burst its banks.

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© Minister's pledge on Morpeth flood defences work by Ian Robson. Chronicle Live, 27th September 2012

The Met. Office described the weather as the most intense September storm in 30 years. It was caused by an area of low pressure of 973 millibars over NE England. Heavy rain in the Cheviot Hills to the north of Morpeth resulted in the high discharge in the River Wansbeck. Over a month's rain (80 mm) fell in 48 hours and the town's outdated flood defences could not cope.

After the 2008 floods a £21 million flood barrier was proposed. However this is still at the planning stage.

At the height of the flood:

- 100 families fled their homes.
- 40 residents rescued by the emergency services.
- Local businesses were under flood water and sewage.
- A local B&B was flooded and the owner is worried about the future of the business.

Fig. 4

(i) Describe fully **one** possible impact this flood had on local people.

[3]

(ii) Explain how human activity can increase the risk of flooding in urban areas such as Morpeth.

[3]

Examiner Only	
Marks	Remark

(f) Evaluate the extent to which river management strategies used on a river that you have studied outside the British Isles can be considered sustainable.

Examiner Only	
Marks	Remark

[8]

Spelling, punctuation and accurate use of grammar [4]

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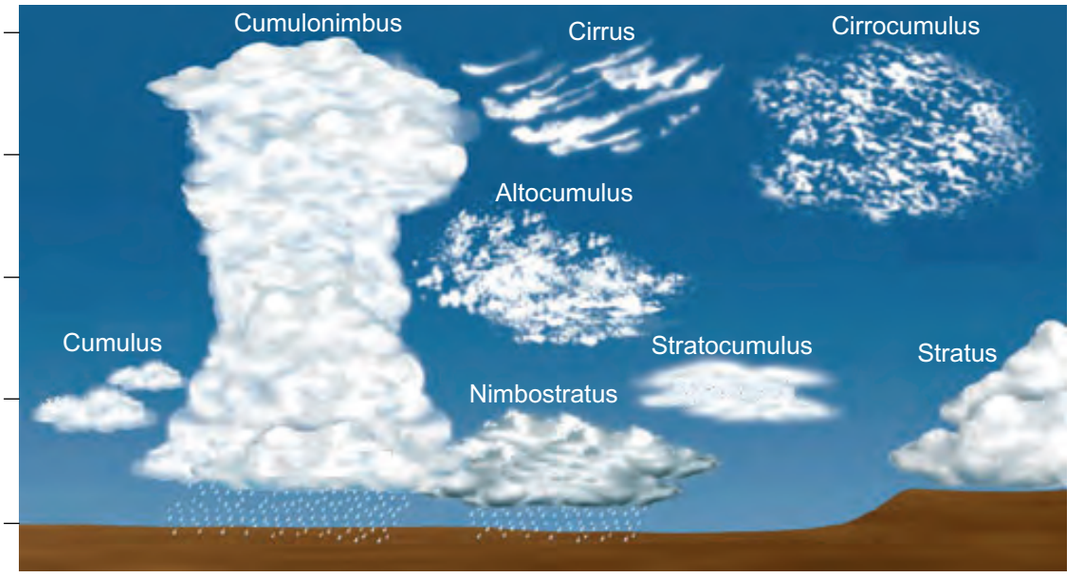
Examiner Only	
Marks	Remark

2 **(a)** Study **Fig. 5** which shows different cloud types. Answer the questions which follow.



Source: http://www.crh.noaa.gov/images/lmk/CloudChart.jpg

Fig. 5

(i) State **three** characteristics of cirrus clouds.

_____

_____

_____ [3]

(ii) Explain why cumulonimbus clouds bring rain.

Examiner Only	
Marks	Remark

_____

_____

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_____

_____ [4]

(iii) State the unit of measurement used to measure cloud cover.

_____ [1]

(b) Study **Fig. 6** which shows a weather instrument. Answer the questions which follow.

Examiner Only	
Marks	Remark

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Fig. 6

(i) State the weather element that is measured by this instrument.

_____ [1]

(ii) Explain how this weather instrument works.

_____

_____

_____

_____ [3]

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(Questions continue overleaf)

(c) Study **Fig. 7** which shows a weather system over the British Isles. Answer the questions which follow.

Examiner Only	
Marks	Remark

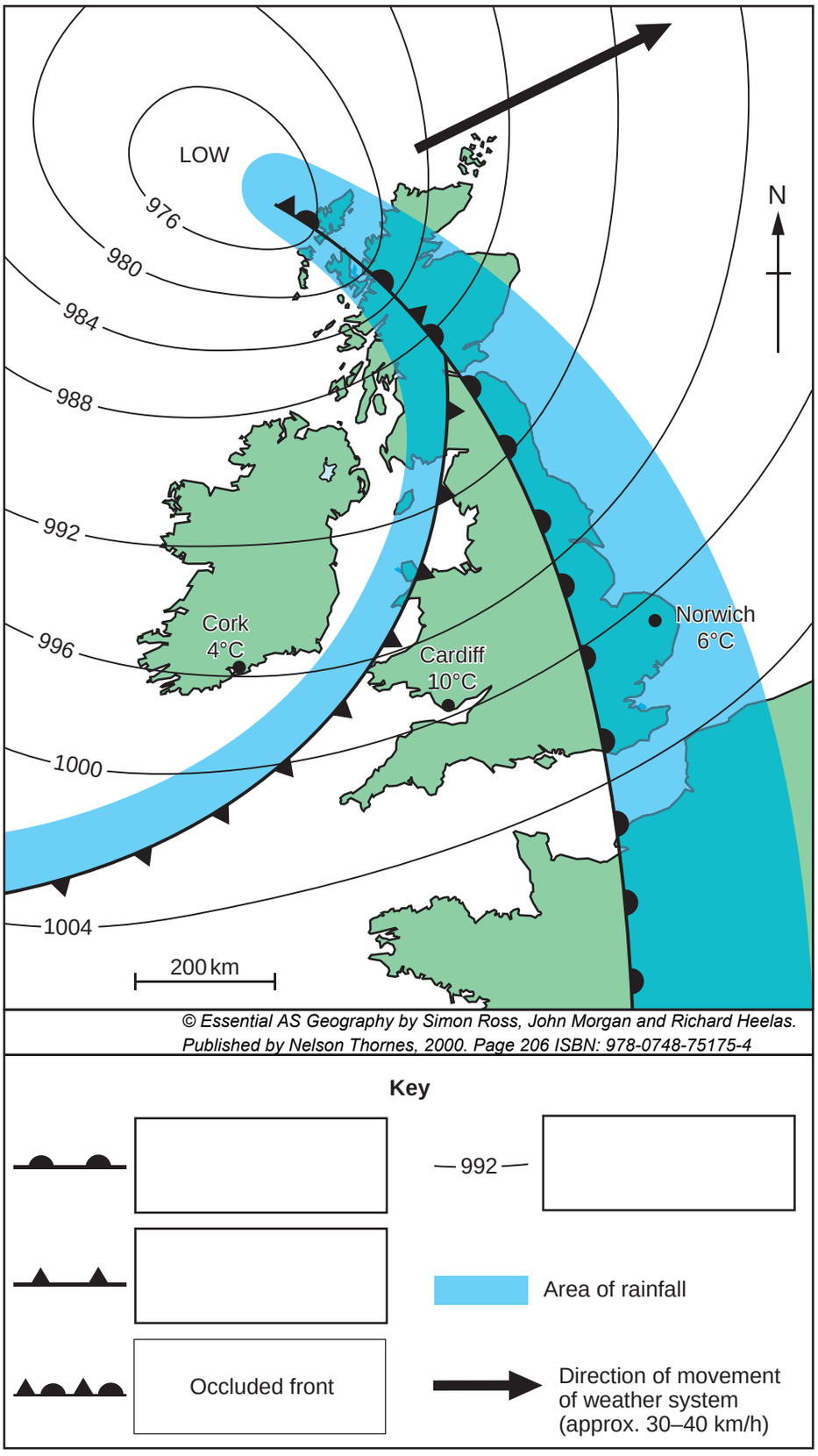

Fig. 7

(i) Complete the key on **Fig. 7**. [3]

(ii) Describe and explain the change in temperature as the weather system moves across the British Isles.

_____

_____

_____

_____

_____

_____

_____

_____

_____ [5]

Examiner Only	
Marks	Remark

(d) Deforestation of the rainforest is one cause of climate change.

Examiner Only	
Marks	Remark

Stop cutting down the trees

© ANTONIO SCORZA / AFP / Getty Images

Explain how reducing deforestation of the rainforest can help deal with climate change. You should refer to a place in your answer.

[5]

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(Questions continue overleaf)

Theme C: The Restless Earth

3 **(a)** Study **Fig. 8** which shows the structure of the Earth. Answer the questions which follow.

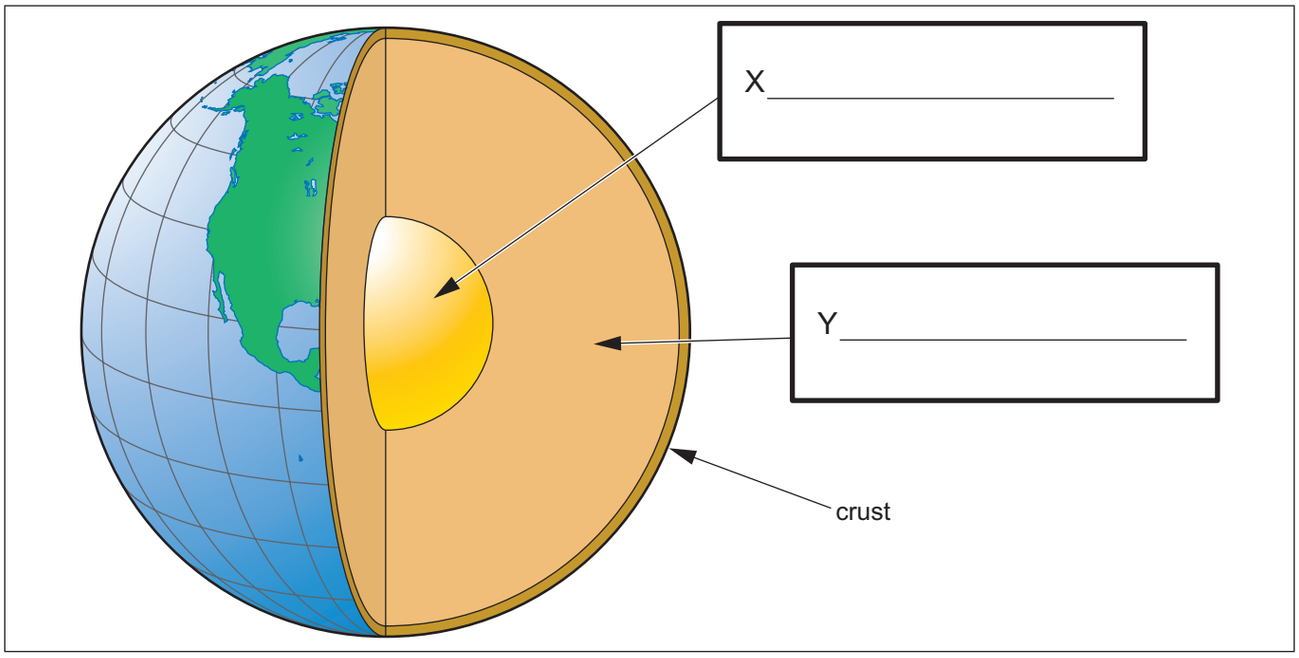

Fig. 8

Examiner Only	
Marks	Remark

(i) Label X and Y on **Fig. 8** to name the two layers. [2]

(ii) The crust of the Earth is divided into plates. Explain how plates are able to move.

_____

_____

_____

_____

_____

_____ [3]

(b) Study **Fig. 9** which shows a destructive plate boundary. Answer the questions which follow.

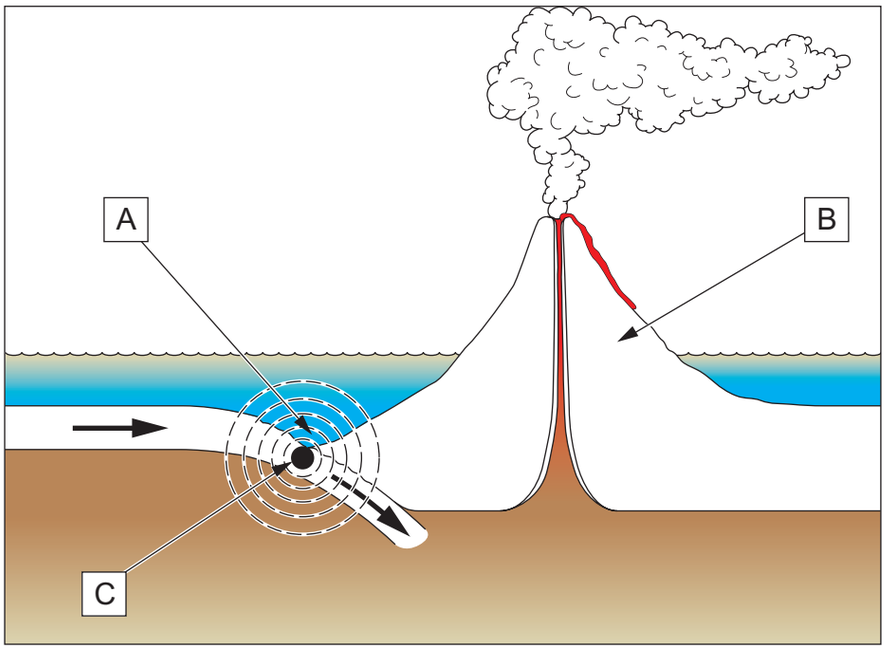

Fig. 9

(i) Identify the features labelled A, B and C on **Fig. 9**.

Label	Feature
A	
B	
C	

[3]

Examiner Only

Marks	Remark

(ii) Explain how earthquakes are caused at this type of plate boundary.

[3]

(iii) One impact of earthquakes is liquefaction. State the meaning of the term **liquefaction**.

[2]

Examiner Only	
Marks	Remark

(c) Earthquakes have long term impacts on people. For an earthquake you have studied describe these impacts and **one** strategy to protect people when an earthquake occurs in the future.

Location of earthquake _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____ [7]

Spelling, punctuation and accurate use of grammar [4]

Examiner Only	
Marks	Remark

(d) Name an area of basalt columns which you have studied and explain their formation.

Examiner Only	
Marks	Remark

[5]

THIS IS THE END OF THE QUESTION PAPER

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