



Rewarding Learning

ADVANCED SUBSIDIARY (AS)
General Certificate of Education
2018

Centre Number

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Candidate Number

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Geography

Assessment Unit AS 1
assessing
Physical Geography



SGG11

[SGG11]

TUESDAY 15 MAY, AFTERNOON

TIME

1 hour 15 minutes.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

Section A: answer **all three** questions in this section. Write your answers in the spaces provided in this question paper.

Section B: answer **any two** questions from this section. Write your answers to Section B on the lined paper at the end of this question paper.

INFORMATION FOR CANDIDATES

The total mark for this paper is 75.

Quality of written communication will be assessed in Questions **4, 5** and **6**.

Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	

Total Marks	
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Section A

Answer **all three** questions in this section.

- 1 (a)** Study **Resource 1A** and **Resource 1B** on page 3, which provide information on the Fitzsimmons Creek river in British Columbia, Canada and the development of its delta over time.

- (i)** Using information from **Resource 1B**, describe the growth of this delta.

[3]

- (ii)** Using **Resources 1A** and **1B** and your own knowledge, explain the processes which have caused the growth of this delta.

[6]

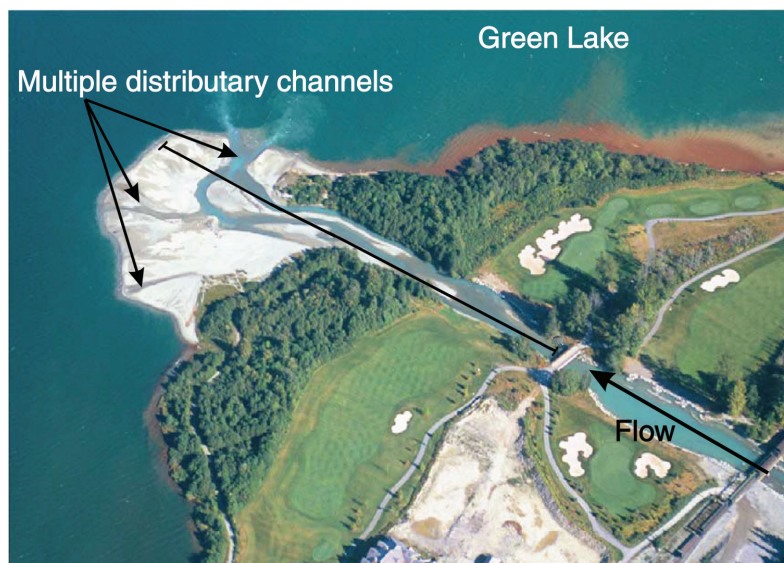
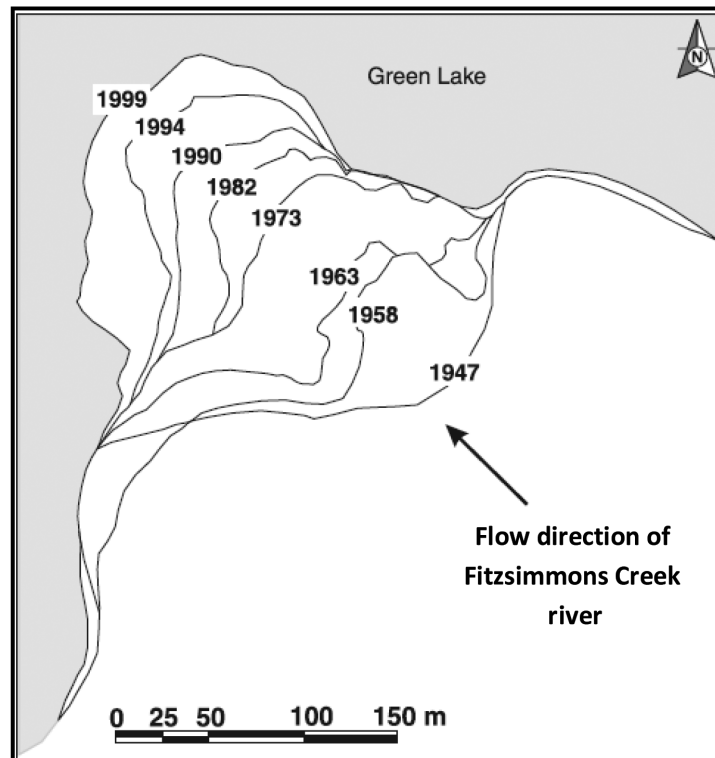
Examiner Only	
Marks	Remark

Resource 1A

Fitzsimmons Creek is a steep, high energy river draining the rugged mountains of coastal British Columbia. The river drains a 100 km² drainage basin area, which is partially unvegetated and supplies an annual input of 20,000 Mg/yr of suspended sediment to Green Lake. Sediment transport rates, however, increase dramatically during extreme flood events. The mouth of the river is characterised by multiple distributary channels and wave action within Green Lake has an insignificant impact on sediment distribution.

Source: Principal Examiner

Resource 1B



"Reprinted from Geomorphology, Volume 57, Issues 3-4, Channa P. Pelpola, Edward J. Hickin, Long-term bed load transport rate based on aerial-photo and ground penetrating radar surveys of fan-delta growth, Coast Mountains, British Columbia, pages 169-181., © 2004, with permission from Elsevier"

(b) Study **Resource 1C**, which illustrates the response of the local community following the Somerset floods in South West England in 2014.

Resource 1C



© Matt Cardy / Stringer / Getty Images News / Getty Images

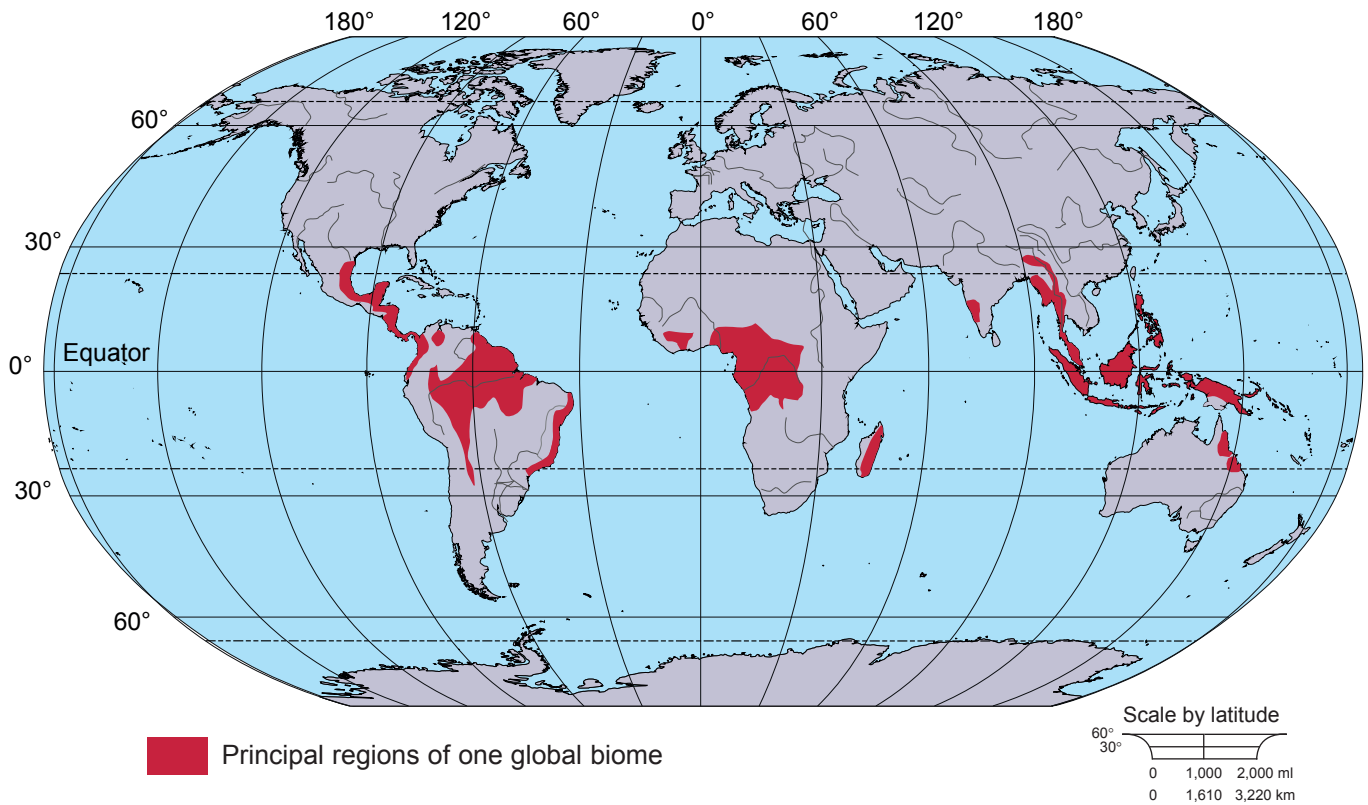


© Gideon Mendel / Contributor / Corbis News / Getty Images

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2 (a) Study **Resource 2A** below, which illustrates the distribution of one global biome.

Resource 2A



"Reprinted with permission from Encyclopædia Britannica, © 1997 by Encyclopædia Britannica, Inc."

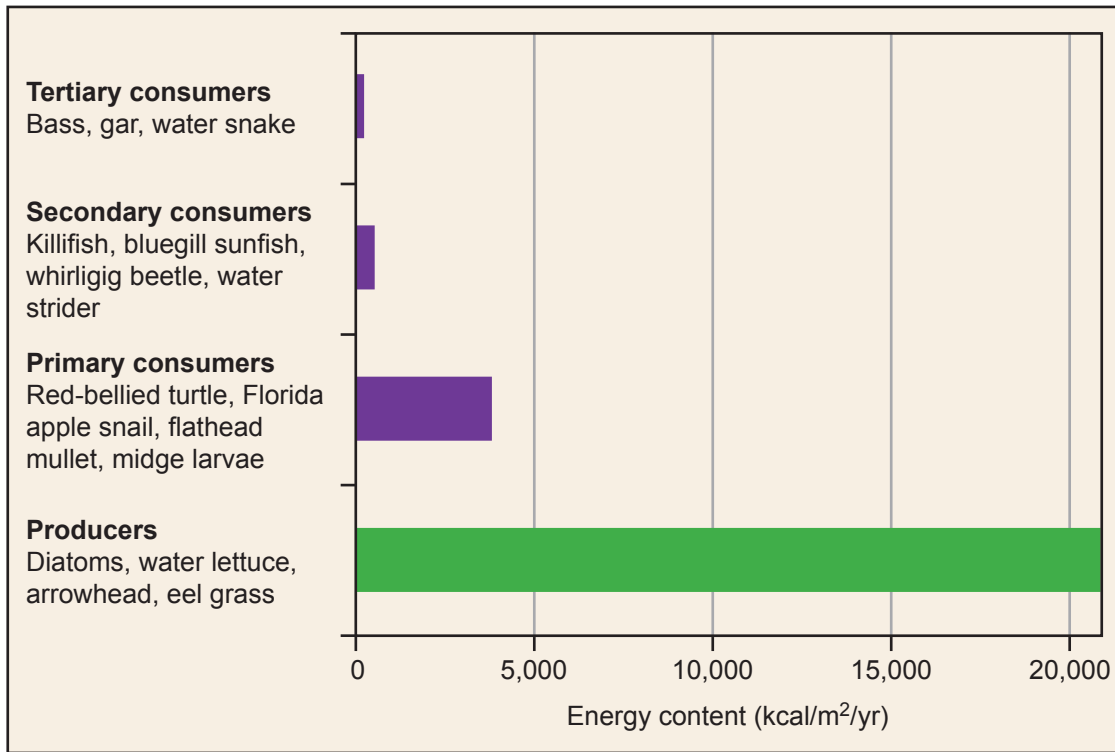
With reference to places, **identify** the global biome illustrated in **Resource 2A** and **describe** its distribution.

[3]

Examiner Only	
Marks	Remark

(b) Study **Resource 2B**, which illustrates the energy content in each trophic level in the Silver Springs ecosystem in Florida, USA.

Resource 2B



Key: ■ Autotrophs ■ Heterotrophs

*Adapted from © OpenStax, Biology. OpenStax CNX. 7 Nov 2018 <http://cnx.org/contents/185cbf87-c72e-48f5-b51e-f14f21b5eabd@11.6>
OpenStax is licensed under a Creative Commons Attribution 4.0 International License (CC BY 4.0)*

(i) Explain the role of the **autotrophs** in this ecosystem.

[3]

Examiner Only	
Marks	Remark

(ii) **Describe** and **explain** the variation of energy content in each trophic level in this ecosystem.

[5]

(c) State what is meant by a plagioclimax vegetation and explain one way in which it may be formed.

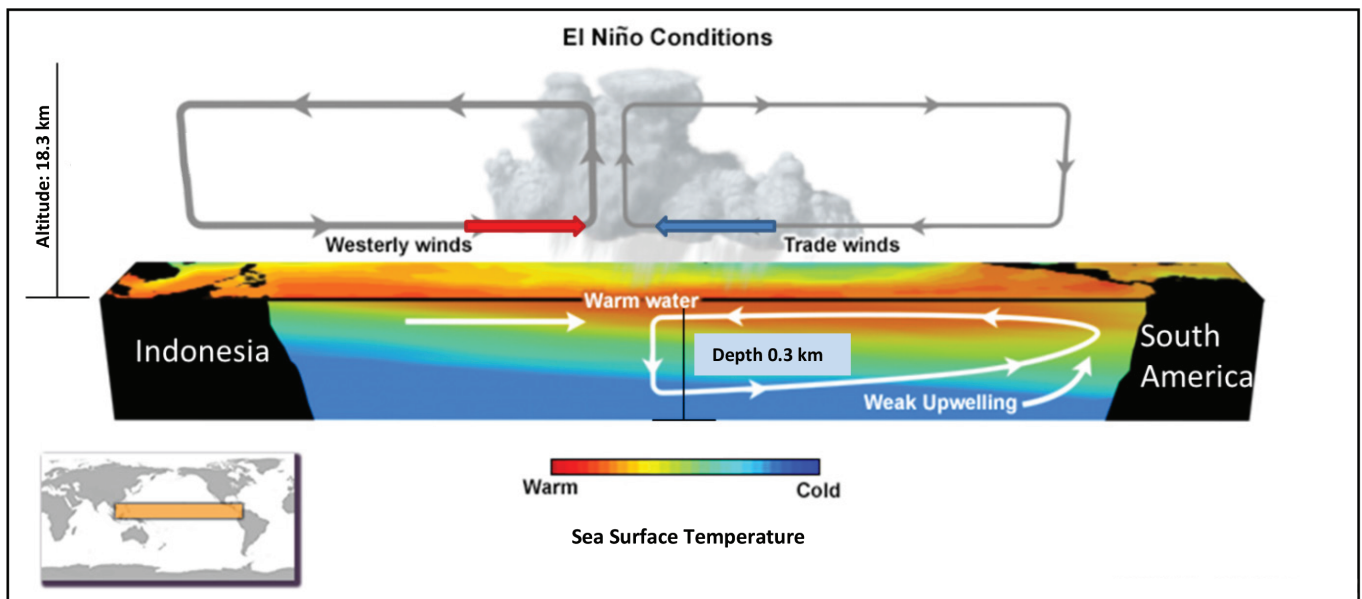
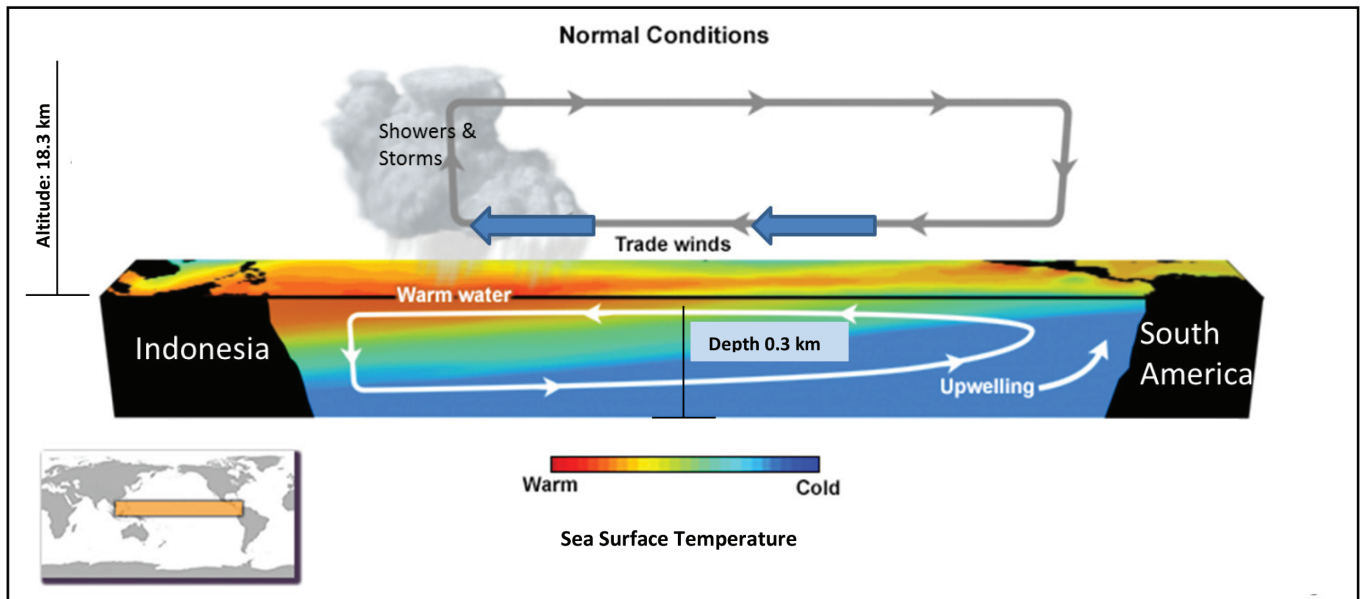
[4]

Examiner Only	
Marks	Remark

[Turn over

- 3 (a) Study **Resource 3A**, which illustrates “normal” and El Niño Southern Oscillation conditions for the tropical Pacific Ocean.

Resource 3A



© NOAA - Public Domain

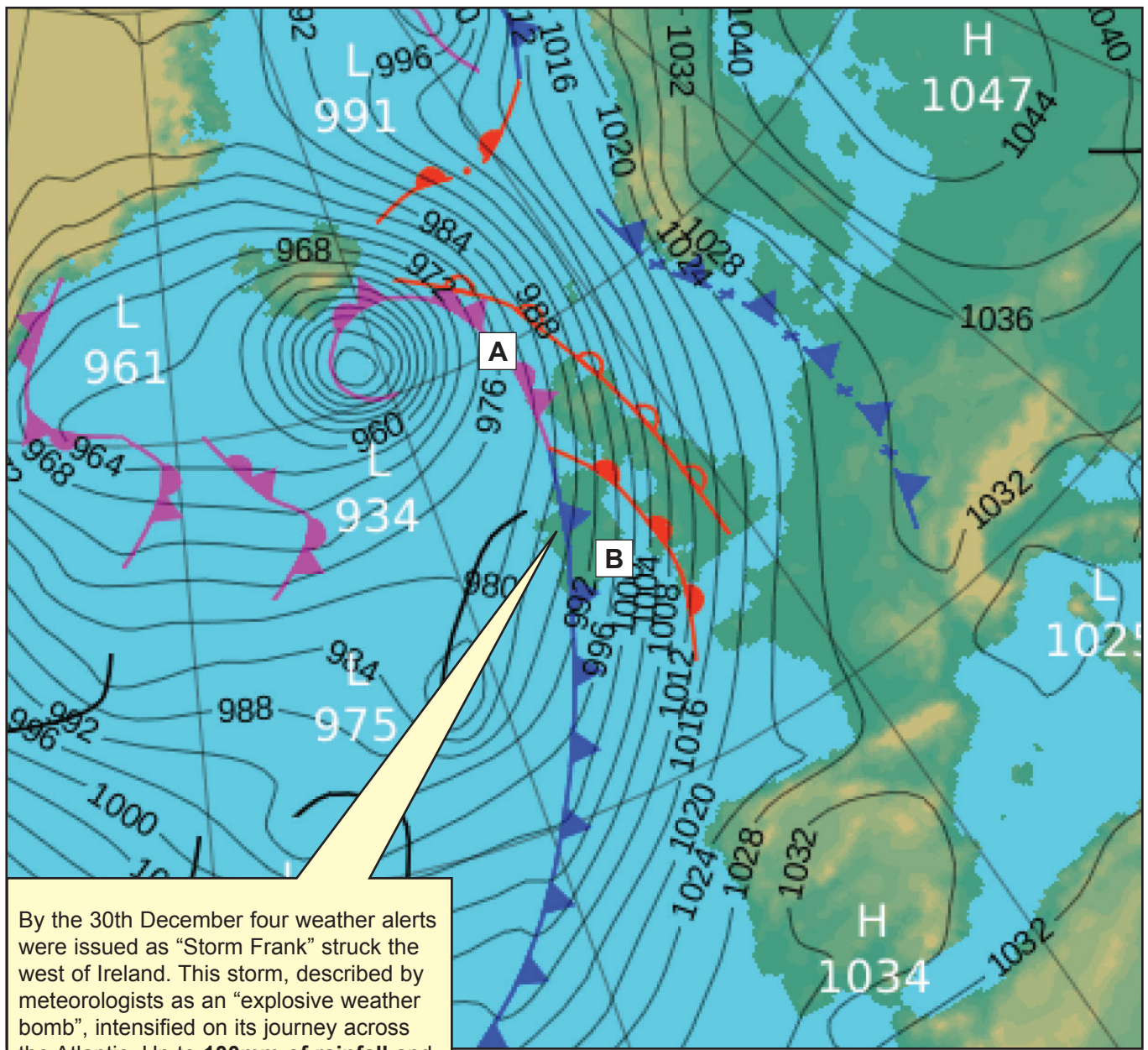
Using information from **Resource 3A**, **describe** and **explain** how the El Niño Southern Oscillation affects global wind and rainfall patterns.

[6]

Examiner Only	
Marks	Remark

- (b) Study **Resource 3B**, a synoptic chart illustrating a low pressure weather system (Storm Frank) over the British Isles on the 30th December 2015, and a weather summary for the west of Ireland at this time.

Resource 3B



By the 30th December four weather alerts were issued as “Storm Frank” struck the west of Ireland. This storm, described by meteorologists as an “explosive weather bomb”, intensified on its journey across the Atlantic. Up to **100mm of rainfall** and **winds of up to 120km per hour** were forecast for the west coast of Ireland.

Met Office © Crown Copyright

(i) Place an **X** on **Resource 3B** to illustrate the centre of the low pressure weather system affecting the British Isles.

[1]

(ii) Use **Resource 3B** to identify

- The type of front labelled **A**

- The type of air mass labelled **B**

_____ [2]

(iii) Using information from **Resource 3B**, explain the weather conditions experienced along the west coast of Ireland.

_____ [6]

Examiner Only	
Marks	Remark

Section B

Answer **any two** questions in this section.

- 4** Explain the causes of flooding in your MEDC case study and discuss its effects on people.

[15]

- 5** Evaluate the actual and potential impacts of climate change in your regional scale case study of a tundra ecosystem.

[15]

- 6** With general reference to places, explain the factors which influence temperature.

[15]

Examiner Only	
Marks	Remark

THIS IS THE END OF THE QUESTION PAPER

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