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ADVANCED SUBSIDIARY (AS)  
General Certificate of Education  
2012

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Centre Number  
71

Candidate Number

# Geography

## Assessment Unit AS 1

*assessing*

### Physical Geography

[AG111]



WEDNESDAY 13 JUNE, 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.

Section A: candidates must answer this section.

Section B: answer **all three** questions in this section.

Section C: answer any **two** questions from this section.

You should write your answers in the spaces provided in this question paper.

**At the end of the examination your summary of fieldwork and table of data should be attached securely to this paper using the treasury tag supplied.**

#### INFORMATION FOR CANDIDATES

The total mark for this paper is 90.

Quality of written communication will be assessed in **all** questions.

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	
7	

<b>Total Marks</b>	
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Section A

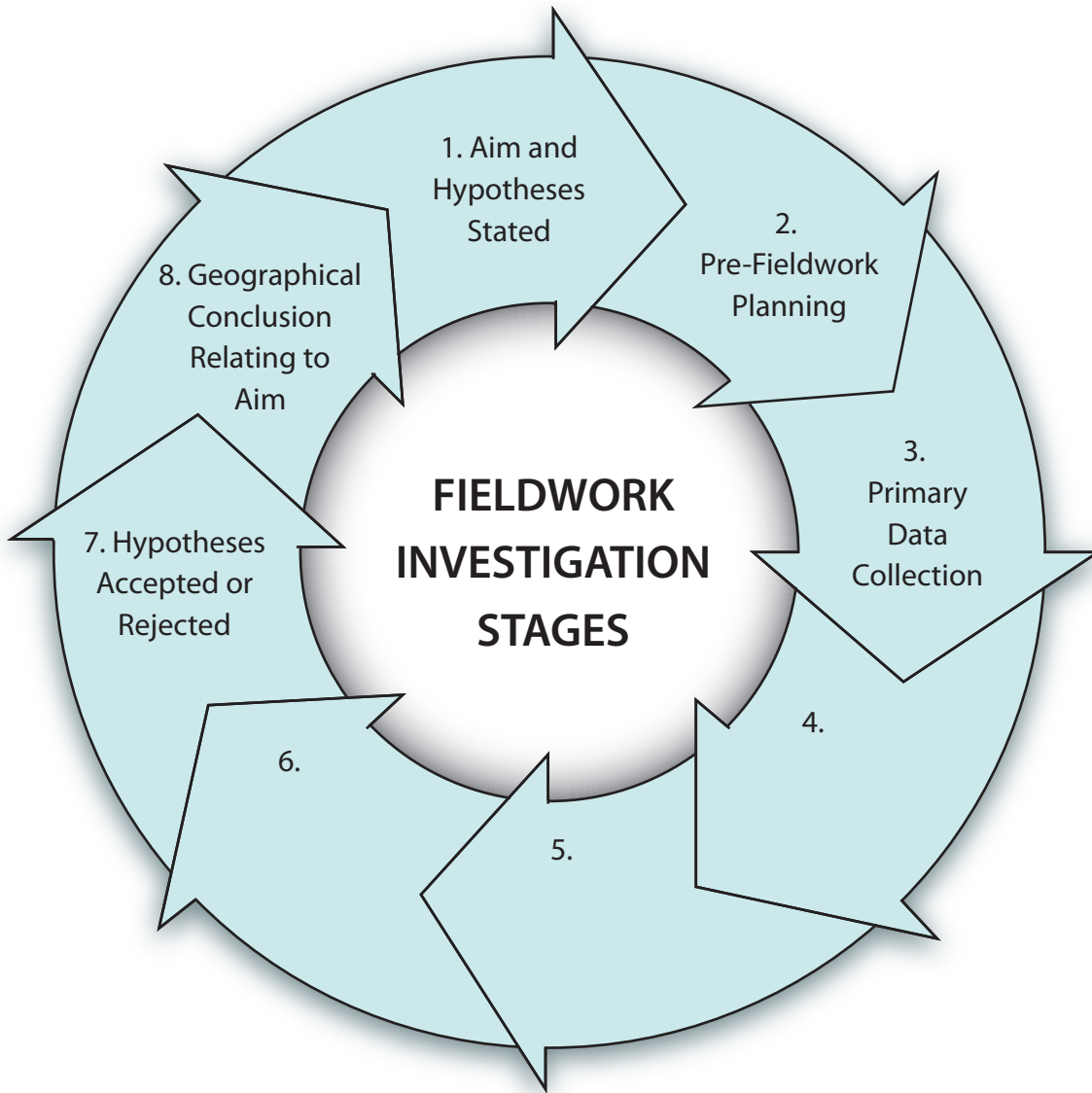
Answer this section

Submitted summary of fieldwork and table of data.

At the end of the examination these should be attached securely to this paper using the treasury tag supplied.

- 1 Study **Resource 1**, which illustrates a partially completed diagram of the stages involved in a fieldwork investigation.
  - (a) (i) Complete **Resource 1** by labelling **three** additional stages which are necessary to complete the fieldwork investigation process. [3]

Resource 1



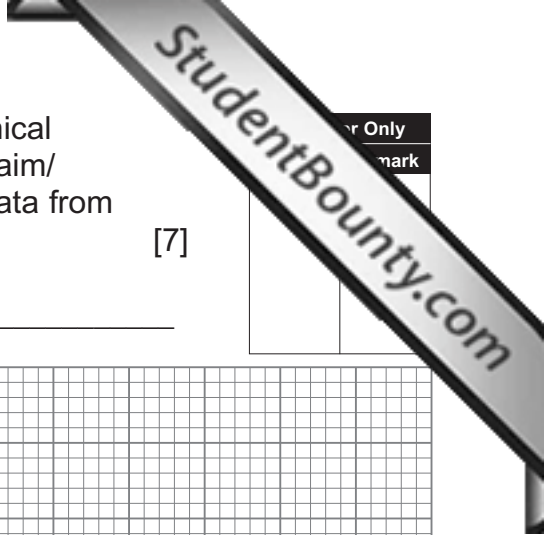
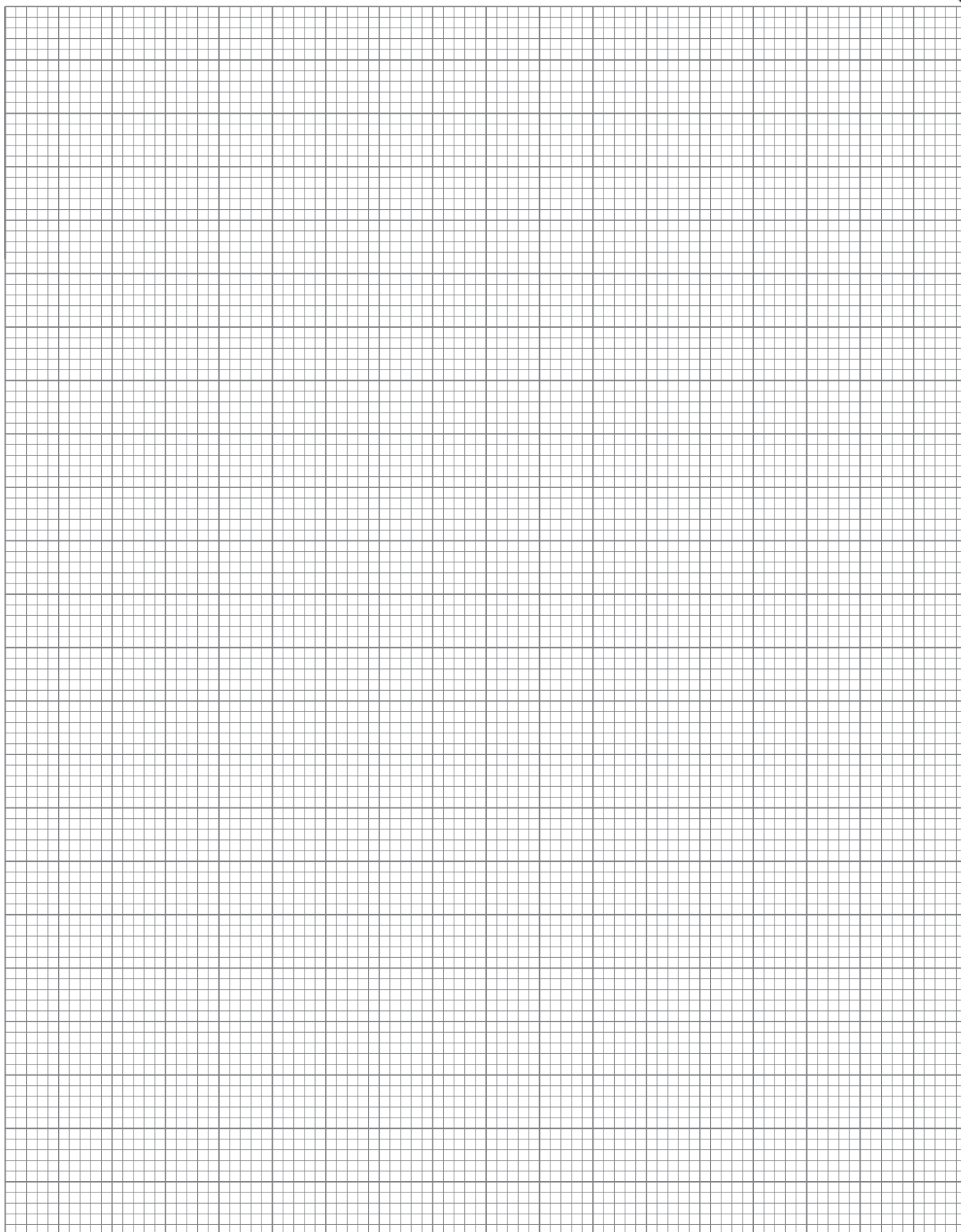
Source: Principal Examiner



(b) (i) On the graph paper below, use an appropriate graphical technique to present accurately data relevant to the aim/hypothesis of your fieldwork. (You must select this data from your table)

[7]

Title of graph: \_\_\_\_\_







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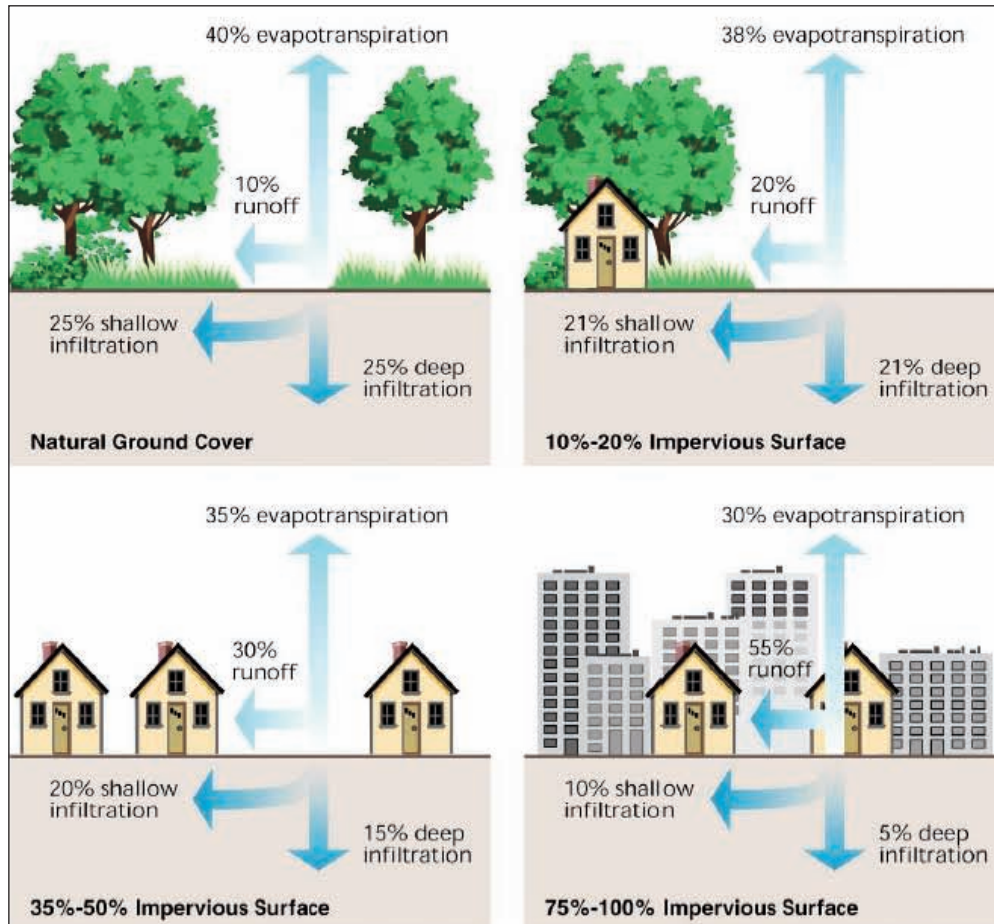
**(Questions continue overleaf)**

## Section B

Answer **all three** questions in this section

- 2 (a) Study **Resource 2A** which shows the effect of land-use change in a drainage basin.

**Resource 2A**



© Urban Flood Risk Management, Associated Programme on Flood Management, page 5, published by the World Meteorological Organisation, March 2008



(i) Describe how land-use change has altered the **storage** and **transfer** of water in this drainage basin.

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[4]

(ii) Discuss the likely impact of **this** land-use change on river discharge and the storm hydrograph.

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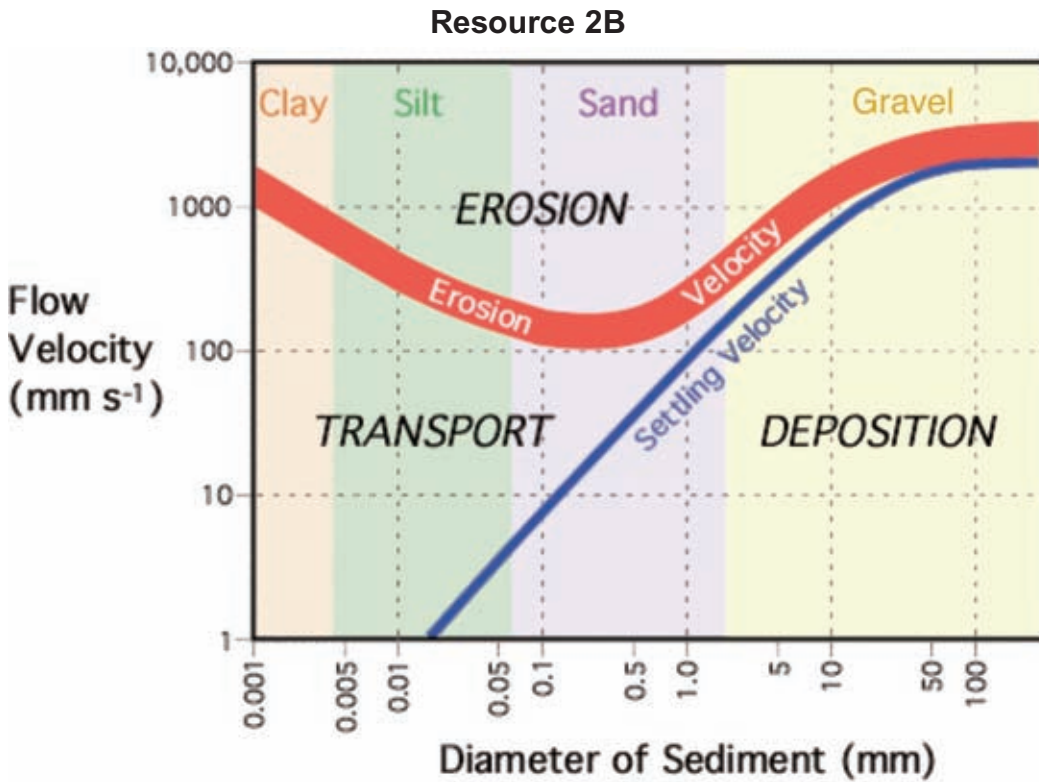
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[3]

(b) Study **Resource 2B**, (the Hjulstrom Curves) which shows the relationship between the flow velocity of a river, sediment size and the processes operating in a river.



© <http://www.physicalgeography.net/fundamentals/10w.html> Reproduced with kind permission.

(i) What is the minimum flow velocity required to transport sediment with a diameter of 1 mm?

\_\_\_\_\_ mm s<sup>-1</sup> [1]

(ii) Describe and explain the relationship between the erosion velocity and sediment size.

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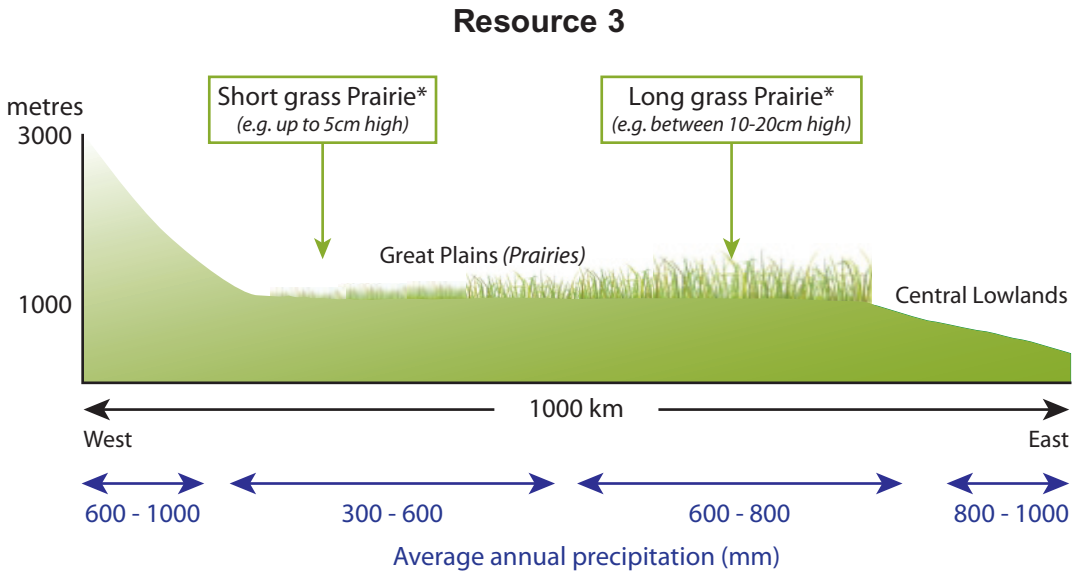
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[4]

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**(Questions continue overleaf)**

3 (a) Study **Resource 3**, which shows a cross-sectional view of the North American mid-latitude Prairie Grasslands.



\* Height of grass is not to scale

© Geo Factsheet Number 125, page 3, published by Curriculum Press. ISSN 1351-5136

(i) Use **Resource 3** to help you describe how the vegetation of mid-latitude grasslands is adapted to the climate.

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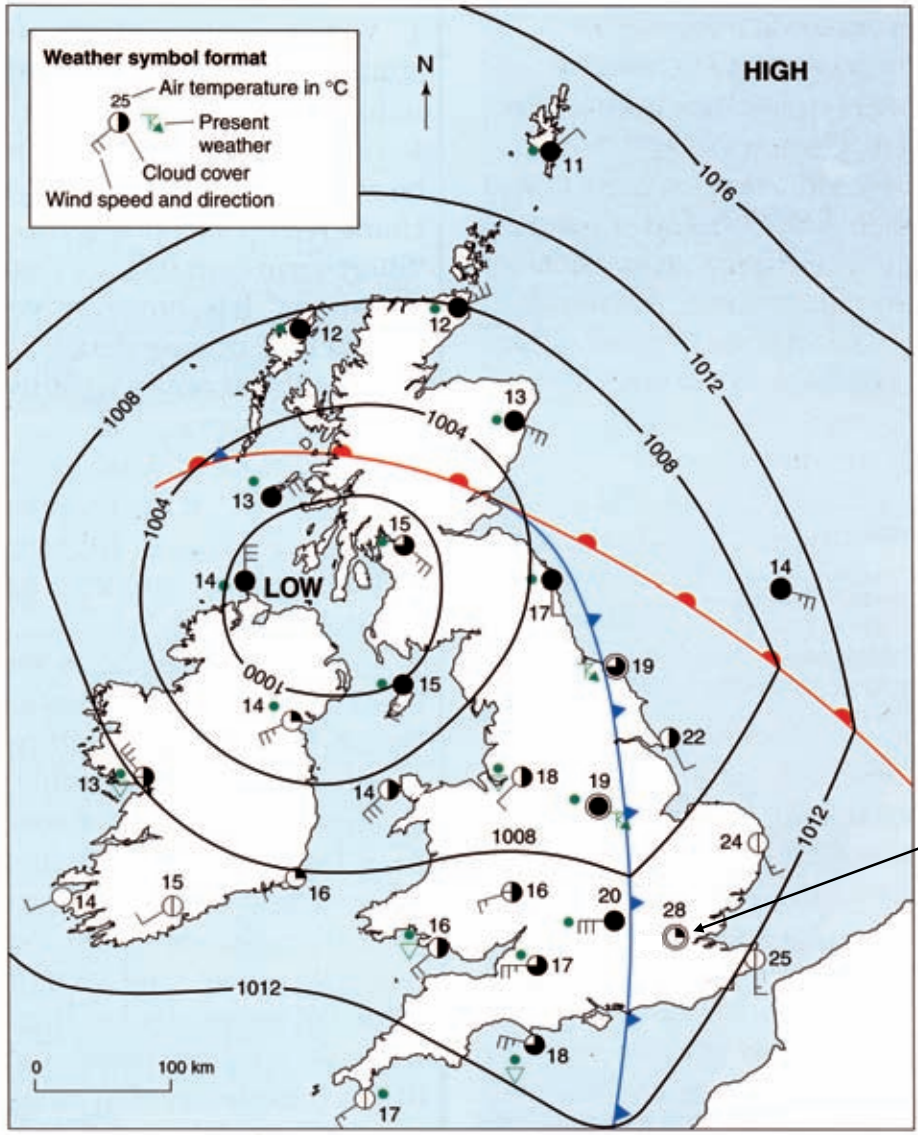
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[3]



4 (a) Study **Resource 4A**, showing the atmospheric pressure and weather experienced in the British Isles with the passage of a depression.

**Resource 4A**



Station A

**Key**

— Isobar (line joining places with the same air pressure, measured in millibars)

**Cloud cover symbols**  
(1 okta = one-eighth of sky covered)

- 0 okta
- ◐ 1 okta, or less
- ◑ 2 oktas
- ◒ 3 oktas
- ◓ 4 oktas
- ◔ 5 oktas
- ◕ 6 oktas
- ◖ 7 oktas, or more
- ◗ 8 oktas
- ◘ Sky obscured

**Weather symbols**

- ≡ Mist
- ≡≡ Fog
- ∩ Drizzle
- ∩∩ Rain and drizzle
- Rain
- \* Snow
- ∇ Rain shower
- ∇∇ Snow shower
- ◊ Hail shower
- ⚡ Thunderstorm

**Wind symbols**

(the angle of the arrow shows wind direction)

- Calm
- ◐ 1 or 2
- ◑ 3-7
- ◒ 8-12
- ◓ 13-17

Add a half-feather for every 5 knots up to

- ◐ 48-52, then
- ◑ 53-57

© *Physical environments: a case-study approach to AS and A2 geography* by Jack and Meg Gillett, published by Hodder & Stoughton, 2003. ISBN 0340782072. "Reproduced by permission of Hodder & Stoughton".

- (i) Complete the table below, **Resource 4B**, to show some aspects of the weather being experienced at Station A. The temperature has been completed for you.

**Resource 4B**

Weather Element	Station A
Temperature	28 °C
Pressure	
Cloud Cover	

[2]

- (ii) Identify **and** describe the **type of air mass** affecting Station A.

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[2]

- (iii) With reference to **Resource 4A**, describe and explain how the weather experienced at Station A is likely to change over the next few hours.

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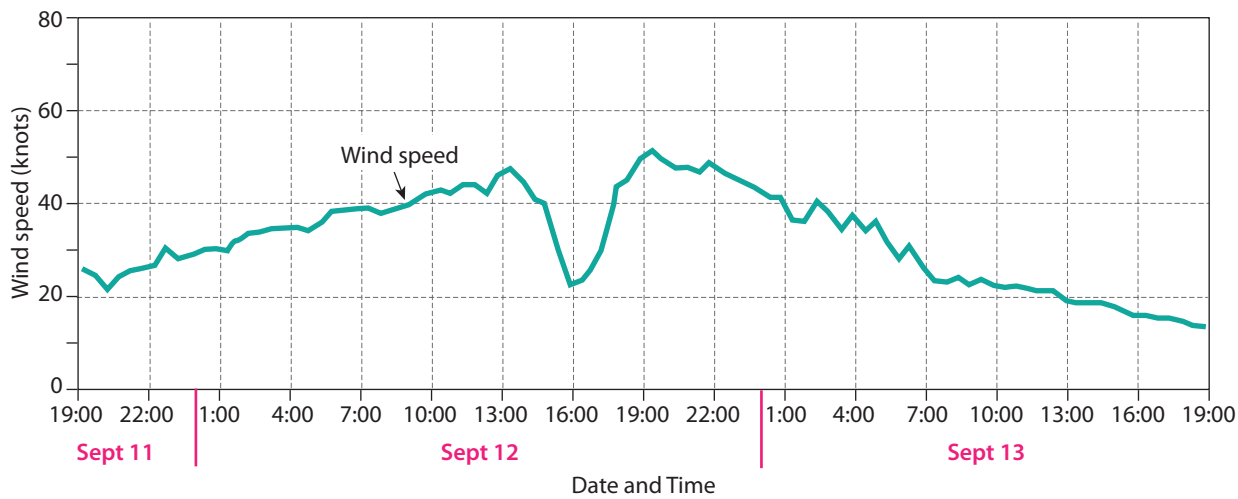


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[5]

(b) Study **Resource 4C**, which shows the change in wind speed in the north-western Gulf of Mexico with the passage of Hurricane Ike in 2008.

**Resource 4C**



© Flower Garden Banks National Marine Sanctuary

Describe the changes experienced in wind speed and explain them in relation to the structure of a hurricane.

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[3]



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**(Questions continue overleaf)**

### Section C

Answer **any two** questions in this section

- 5 With reference to a large scale drainage basin or its delta, describe both the beneficial and detrimental effects of flooding on people and property. [12]
- 6 Describe how energy is transferred and nutrients are cycled in a small scale ecosystem you have studied. [12]
- 7 Describe and explain the contrasting weather associated with summer and winter anticyclones. With reference to your case studies, discuss their human effects. [12]



























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**THIS IS THE END OF THE QUESTION PAPER**

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