

Surname						Other Names					
Centre Number						Candidate Number					
Candidate Signature											

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General Certificate of Education
 January 2004
 Advanced Level Examination



GEOGRAPHY
Unit 4

GGA4

Wednesday 28 January 2004 Morning Session

In addition to this paper you will require:
 The Ordnance Survey map extract (enclosed).

Time allowed: 1 hour 30 minutes

Instructions

- Use blue or black ink or ball-point pen.
- Fill in the boxes at the top of this page.
- Answer **three** questions in the spaces provided: **two** from **Section A** and **one** from **Section B**.
- Do all rough work in this book. Cross through any work you do not want marked.

Information

- The maximum mark for this paper is 90.
- Each question in Section A is worth 15 marks.
- Each question in Section B will be marked out of 30 and multiplied by 2 to give a mark out of 60.
- Mark allocations are shown in brackets.
- Section B of this unit assesses your understanding of the relationship between the different aspects of Geography.
- You are expected to use a calculator where appropriate.
- You will be assessed on your ability to use an appropriate form and style of writing, to organise relevant information clearly and coherently, and to use specialist vocabulary, where appropriate.
- The degree of legibility of your handwriting and the level of accuracy of your spelling, punctuation and grammar will also be taken into account.

Advice

- Where appropriate, sketch maps and diagrams should be used to illustrate answers and reference made to regional examples and case studies.
- You are advised to spend about 30 minutes on Section A and about 60 minutes on Section B.

For Examiner's Use			
Number	Mark	Number	Mark
1		4	
2		5	
3		6	
		×2	
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Total (Column 1)		→	
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TOTAL			
Examiner's Initials			

SECTION A

Answer **two** questions from this Section.

1 COAST PROCESSES AND PROBLEMS**Total for this question: 15 marks**

Study the 1:50 000 Ordnance Survey Map Extract of part of the Gower Peninsula in South Wales.

- (a) On the outline map below label the features which indicate that the south coast of the Gower Peninsula is a high energy coastal environment and the north coast a low energy coastal environment.

Ordnance Survey Map is not reproduced here due to third-party copyright constraints. The full copy of this paper can be obtained by ordering GGA4 from AQA Publications Tel: 0161 953 1170.

Figure 1*(4 marks)*

(b) Why are some stretches of coastline high energy environments and others low energy environments?

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(4 marks)

(c) Explain how the concept of a “coastal sedimentary cell” might aid the understanding and management of the Gower coast between points **A** and **B** shown in **Figure 1**.

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(7 marks)

TURN OVER FOR THE NEXT QUESTION

Turn over ►

2 GEOMORPHOLOGICAL PROCESSES AND HAZARDS**Total for this question: 15 marks**

Study **Figure 2** which shows a table of volcanic hazards and the impact of selected volcanic eruptions between 1985 and 1995.

VOLCANIC HAZARD BY TYPE AND IMPACT			
PRIMARY	FATALITIES 1985–1995	SECONDARY	FATALITIES 1985–1995
Lava Flows		Lahars (volcanic mudflows)	23 189
Pyroclastic Flows	117	Volcanic Landslides	
Ash, Tephra Fall, Lava Bombs	11	Tsunami	
Volcanic Gases		Disease	373

Figure 2

- (a) With reference to examples drawn from the table explain the differences between primary and secondary hazards.

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(4 marks)

(b) Account for the particularly severe impact of *lahars* (volcanic mudflows).

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(4 marks)

(c) With reference to volcanic hazards how realistic is the strategy of modifying vulnerability to the hazard rather than modifying the hazard itself?

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(7 marks)

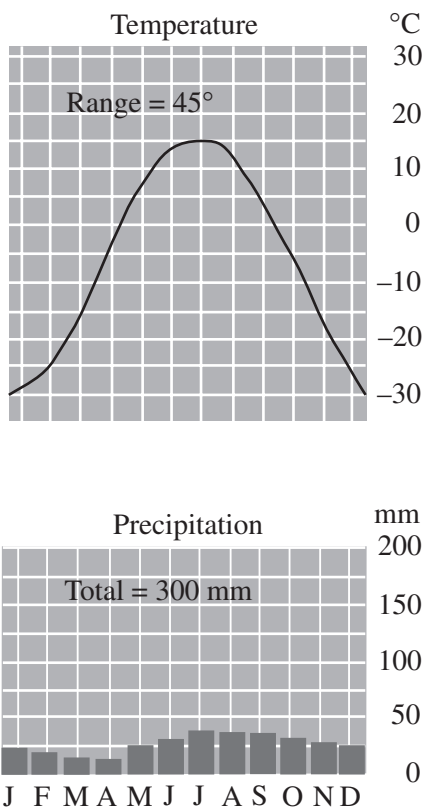
TURN OVER FOR THE NEXT QUESTION

Turn over ►

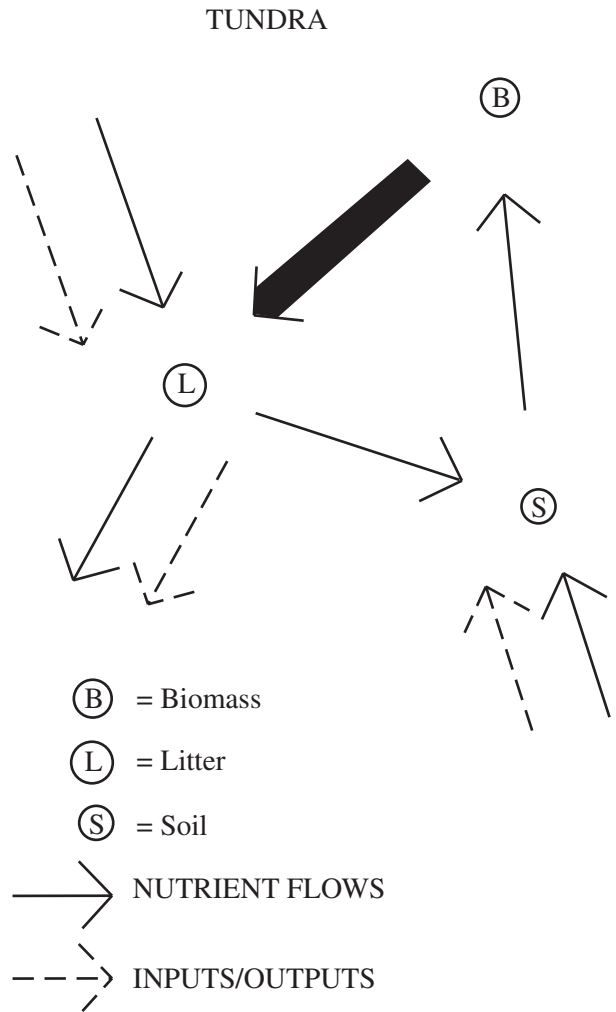
3 COLD ENVIRONMENTS AND HUMAN ACTIVITIES

Total for this question: 15 marks

Study **Figures 3a** and **3b** which show climatic data for a typical tundra weather station and the pattern of nutrient cycling typical of the tundra biome.



3a



3b (After Gersmehl)

Figure 3

(a) What important characteristics of tundra biomes are illustrated in **Figure 3**?

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(4 marks)

(b) Explain the link between the climatic characteristics and the pattern of nutrient cycling illustrated in **Figure 3b**.

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(4 marks)

(c) How far do cold environments, such as tundra regions, limit human development?

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(7 marks)

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SECTION B

Answer **one** question from this Section.

Total for this question: 30 marks

Note to Candidate

You should bear in mind that essay questions 4, 5 and 6 are synoptic in nature. In your response to these questions you are required to show your knowledge and understanding of different aspects of geography, the connections between these different aspects and, where relevant, of human perspectives upon geographical themes and issues.

- 4** When managing coastal environments it is always better to work with nature rather than against it. How far do you agree with this view? (30 marks)
- 5** A knowledge of plate tectonics does not just help in understanding many geographical processes and features but also in managing them. How far do you agree with this view? (30 marks)
- 6** To what extent is it necessary to look beyond glacial and periglacial processes to explain the form and character of glaciated landscapes? (30 marks)

END OF QUESTIONS

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Figure 2: adapted from Bishop, Victoria, *Hazards and Responses 2nd edition*
Collins Educational 2001 Chapter 4 Table 4.3 ISBN 0 00 711431 1

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