Surname	Other Names	
Centre Number	Candid	date Number
Candidate Signature		

Leave blank

General Certificate of Education January 2004 Advanced Subsidiary Examination

ASSESSMENT and QUALIFICATIONS ALLIANCE

GGA1

GEOGRAPHY (SPECIFICATION A) Unit 1

Tuesday 13 January 2004 Morning Session

In addition to this paper you will require:

the insert (enclosed).
 You may use a calculator.

Time allowed: 1 hour

Instructions

- Use blue or black ink or ball-point pen for written answers. You may use pencil for maps, diagrams and graphs.
- Fill in the boxes at the top of this page.
- Answer **three** questions in the spaces provided: **Two** from Sections A, B and C and **one** from Section D.
- Each question attempted must be from a different topic area.
- Do all rough work in this book. Cross through any work you do not want marked.

Information

- The maximum mark for this paper is 50.
- Each question in Sections A, B and C is worth 15 marks.
- Each question in Section D is worth 20 marks.
- Mark allocations are shown in brackets.
- 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.
- Answers should relate to your own geographical studies. These may relate to fieldwork.

Advice

• You are advised to spend about 35 minutes on **Sections A-C** and 25 minutes on **Section D**.

	For Exam	iner's Use)
Number	Mark	Number	Mark
1		7	
2		8	
3		9	
4			
5			
6			
Total (Column 1)			
Total → (Column 2)			
TOTAL			
Examiner's Initials			

S301213(15)/0104/GGA1 6/6/6/6 GGA1

Answer **only two** questions from Sections A, B and C. Answer **only one** question from Section D.

SECTION A

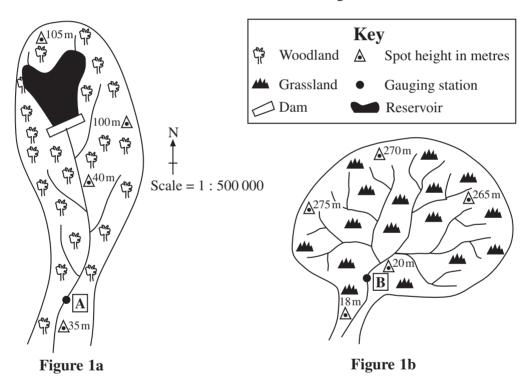
If you choose this Section, answer **either** Question 1 **or** Question 2. If you choose a question from this section, you must **not** answer Question 7 in Section D. Each question carries 15 marks.

WATER ON THE LAND

1

Total for this question: 15 marks

(a) **Figures 1a** and **1b** show two drainage basins. **Figures 2a** and **2b** respectively show incomplete flood hydrographs for gauging stations **A** in **Figure 1a** and **B** in **Figure 1b**. The nature of the storm was identical in each drainage basin.



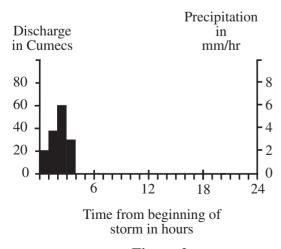


Figure 2a

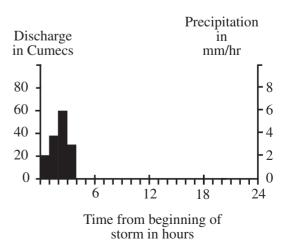


Figure 2b

(ii) (Outline reasons for the differences in the flood hydrographs you have sketched in
	(i).
	(5 marks)
) Explai	n why river regimes vary from place to place.
) Explai	n why river regimes vary from place to place.
) Explai	n why river regimes vary from place to place.
	n why river regimes vary from place to place.

Total for this question: 15 marks

(a) **Figure 3** shows the **Hjulstrom Curve**, designed to illustrate the velocity of a river needed to erode, transport and deposit particles of different size.

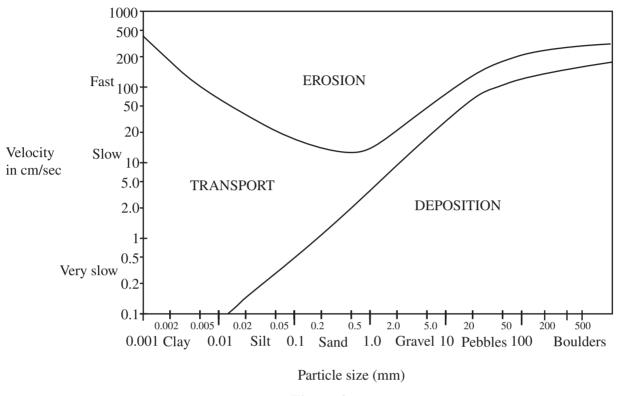


Figure 3

(i)	Using Figure 3 , state the process operating within a channel, where velocity is constant at 200 cm/sec, affecting particles of:
	very fine clay (0.002 mm)
	sand (0.2 mm)
	small boulders (200 mm)
(ii)	Identify and suggest reasons for the relationship between velocity, particle size and deposition.

2

	(5 marks)
(b) U	sing one or more diagrams, explain the sequence of events leading to the migration of leanders.
••	
••	
••	
••	(7 marks)



SECTION B

If you choose this Section, answer **either** Question 3 **or** Question 4. If you choose a question from this section, you must **not** answer Question 8 in Section D. Each question carries 15 marks.

CLIMATIC HAZARDS AND CHANGE

3

Total for this question: 15 marks

(a) **Figures 4a** and **4b** show the effects of the twelve most severe La Niña and El Niño years on the Winter/Spring mean pattern of rainfall in Australia between 1900 and 2000. **Figure 4c** identifies the frequency of each event.

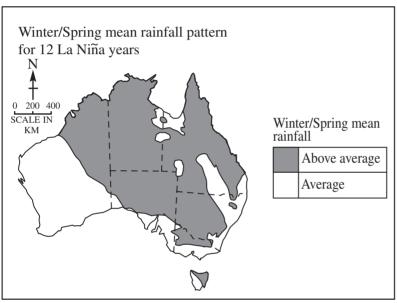


Figure 4a

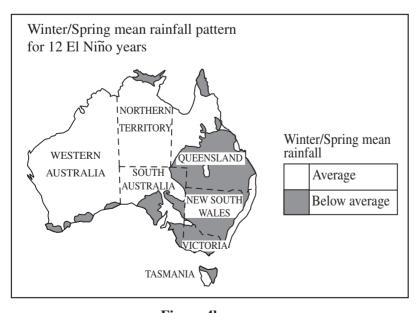
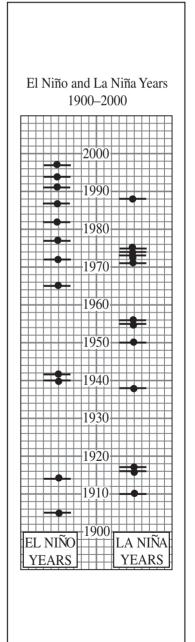


Figure 4b Figure 4c



(i)	Describe the pattern of events shown in Figure 4c .
	(3 marks)
(ii)	State the spatial effects of La Niña and El Niño shown in Figures 4a and 4b.
	(5 marks)

QUESTION 3 CONTINUES ON THE NEXT PAGE

(b)	Explain the economic impacts of an El Niño event in the Pacific basin.
	(7 marks)



Total for this question: 15 marks

(a) **Figure 5** is an extract adapted from a speech at the British Association's Science Festival in September 2002.

The Government must consider the impact of urban sprawl on the microclimate. Plans to increase housing density in the urban areas of southeast England from 24 dwellings per hectare to up to 50 will affect local weather. These changes may have a magnitude comparable, or certainly approaching, the changes due to climatic change. High-rise buildings and closely packed houses are of particular concern.

Figure 5

(i)	State three ways in which the local weather might be affected by an increase in housing density in urban areas.
	1
	2
	3
	(3 marks)
(ii)	Explain how an increase in housing density might affect the local weather that you have identified in (i).
	(5 marks)

4

(b)	Examine the causes of photochemical smog in a city you have studied.
	(7 marks)



SECTION C

If you choose this Section, answer **either** Question 5 **or** Question 6. If you choose a question from this section, you must **not** answer Question 9 in Section D. Each question carries 15 marks.

ENERGY AND LIFE

5

Total for this question: 15 marks

(a) Figures 6a and 6b show the hydrological processes operating in two soils.

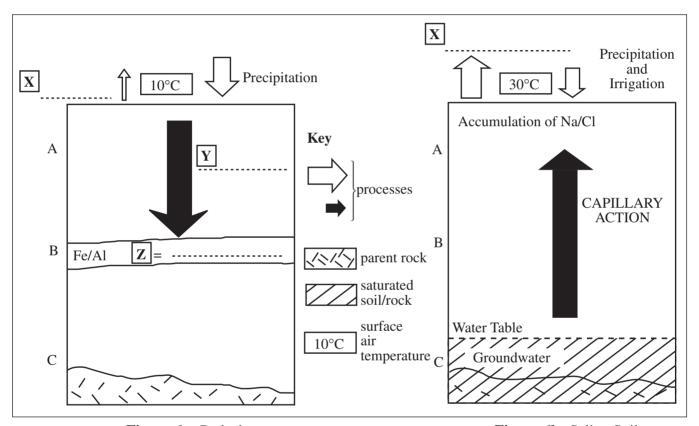


Figure 6a: Podsol **Figure 6b:** Saline Soil

- (i) Label the processes **X** and **Y** and feature **Z** in the spaces provided on **Figures 6a** and **6b**.

 (3 marks)
- (ii) Suggest reasons why the hydrological processes operating in **Figure 6b** are likely to result in salinisation.

	(5 marks)
(b)	Referring to examples, outline the differences between azonal and intrazonal soils.
	(7 marks)



		Total for this question: 15 marks
(a)	Figu	re 7 (insert) illustrates the average acidity of rainfall experienced over the UK.
	(i)	Describe the pattern shown in Figure 7 .
		(3 marks)
	(ii)	Identify and briefly explain the environmental consequences, which might result from high levels of acid in rainfall.
		(5 marks)

6

(b)	Outline the ways that human activity can have negative environmental consequences in Tropical Rainforests.
	(7 marks)



TURN OVER FOR THE NEXT QUESTION

SECTION D

Answer **one** question from this section, **either** Question 7, Question 8 **or** Question 9, on the lined pages that follow.

7 WATER ON THE LAND

You must **not** answer Question 7 if you have answered a question from Section A.

Identify and explain how human intervention in the drainage basin can increase the risk of flooding. (20 marks)

8 CLIMATIC HAZARDS AND CHANGE

You must **not** answer Question 8 if you have answered a question from Section B.

Identify and explain the atmospheric processes responsible for the formation of tropical revolving storms. (20 marks)

9 ENERGY AND LIFE

You must **not** answer Question 9 if you have answered a question from Section C.

Identify and explain the sequence of events that lead to the plant succession and climatic climax in **one** environment you have studied. (20 marks)

END OF QUESTIONS

ACKNOWLEDGEMENTS OF COPYRIGHT-HOLDERS AND PUBLISHERS

Permission to reproduce all copyright material has been applied for. In some cases, efforts to contact copyright owners have been unsuccessful and the AQA will be happy to rectify any omissions of acknowledgement in future if notified.

Question 2: Figure 3: Cambridge University

Question 3: Figure 4: a, b and c: www.bom.gov.au/climate/ahead/soicomp.shtml

Question 4: Figure 5: British Association Festival Papers 2002

Question 6: Figure 7: Reproduced from Philip's Modern School Atlas © Philip's

Copyright © 2004 AQA and its licensors. All rights reserved.

General Certificate of Education January 2004 Advanced Subsidiary Examination

GGA1



GEOGRAPHY (SPECIFICATION A)Unit 1

Insert

Figure 7 (for use with Question 6)

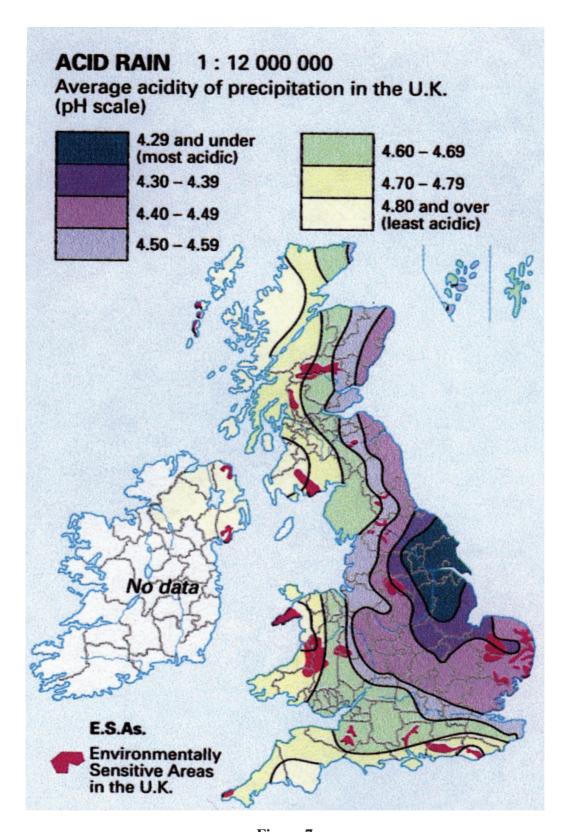


Figure 7 (for use with Question 6)