

Surname						Other Names					
Centre Number						Candidate Number					
Candidate Signature											

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General Certificate of Education
 January 2005
 Advanced Subsidiary Examination



GEOGRAPHY (SPECIFICATION A)
Unit 1 Core Concepts in Physical Geography

GGA1

Thursday 13 January 2005 Morning Session

In addition to this paper you will require:
 the colour insert (enclosed).
 You may use a calculator.

For Examiner'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			

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 about 25 minutes on **Section D**.

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 answer 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) **Figure 1a** (*insert*) shows a meander bend on the River Hodder in Lancashire.
 - (i) In **Figure 1b** below, sketch the cross profile of the river channel along the line A–B shown on the photograph, **Figure 1a**.



Figure 1b (2 marks)

- (ii) Name the channel features at **X** and **Y**.
 - X**
 - Y**

(2 marks)

- (iii) Outline how the dominant processes operating within the meander at this point have led to the channel profile sketched in **Figure 1b**.
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(4 marks)

(b) How and why do the dominant processes within a river channel change as distance from the source increases?

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(7 marks)

TURN OVER FOR THE NEXT QUESTION

15

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2

Total for this question: 15 marks

- (a) **Figure 2** is an extract adapted from the Environment Agency’s *Strategy for the River Trent*.

Figure 2, an extract adapted from the Environment Agency's *Strategy for the River Trent* has not been reproduced here due to third-party copyright constraints.

- (i) From **Figure 2**, identify **one** channel and **one** non-channel management measure.

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(2 marks)

- (ii) Briefly state why a ‘holistic’ approach to flood management is needed in the Trent basin.

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(2 marks)

- (b) Outline how human activity has increased the risk of flooding in recent decades.

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(4 marks)

(c) Examine the costs and benefits of **one** river management scheme that you have studied.

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15

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SECTION B

If you choose this section, answer **either** Question 3 **or** Question 4.
If you answer 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) **Figure 3** gives information for four European cities of similar latitude, within the Cool Temperate Western Maritime climate zone.

Figure 3, information for four European cities of similar latitude, within the cool temperate western maritime climate zone from Philips Certificate Atlas (1987) has not been reproduced here due to third-party copyright constraints.

- (i) Describe the relationship between distance from the Atlantic Ocean and January precipitation.

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(2 marks)

- (ii) How does the annual temperature range vary from west to east between Shannon and Berlin?

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(2 marks)

- (iii) Explain the variations in **either** temperature **or** precipitation shown in **Figure 3**.

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(4 marks)

QUESTION 3 CONTINUES ON THE NEXT PAGE

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(b) Examine constraints on human activity during **winter** for places experiencing the Cool Temperate Western Maritime climate.

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(7 marks)



NO QUESTIONS APPEAR ON THIS PAGE

TURN OVER FOR THE NEXT QUESTION

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4

Total for this question: 15 marks

- (a) **Figure 4** shows the link between deaths from Severe Acute Respiratory Syndrome (SARS) and air quality in five Chinese provinces between April and May 2003. (The air quality index takes 5 major pollutants into account; an index of below 100 is considered healthy for the general population.)

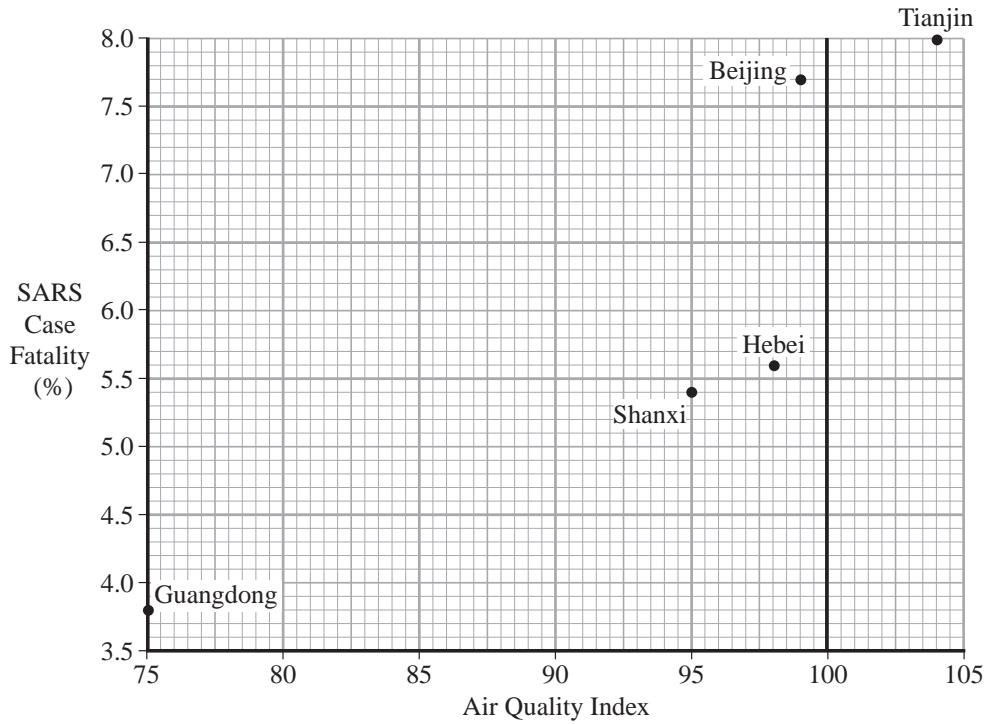


Figure 4

- (i) Comment on the variations in air quality in the Chinese provinces shown in **Figure 4**.

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(2 marks)

- (ii) Identify the relationship between deaths and air quality suggested in **Figure 4**.

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(2 marks)

(b) Under what circumstances do high concentrations of air pollution result in the formation of photochemical smog?

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(4 marks)

(c) Examine the success of policies designed to improve the air quality in **one or more** cities that you have studied.

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SECTION C

If you choose this section, answer **either** Question 5 **or** Question 6.
If you answer 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) **Figure 5** shows the wildlife supported by a typical British hedge.

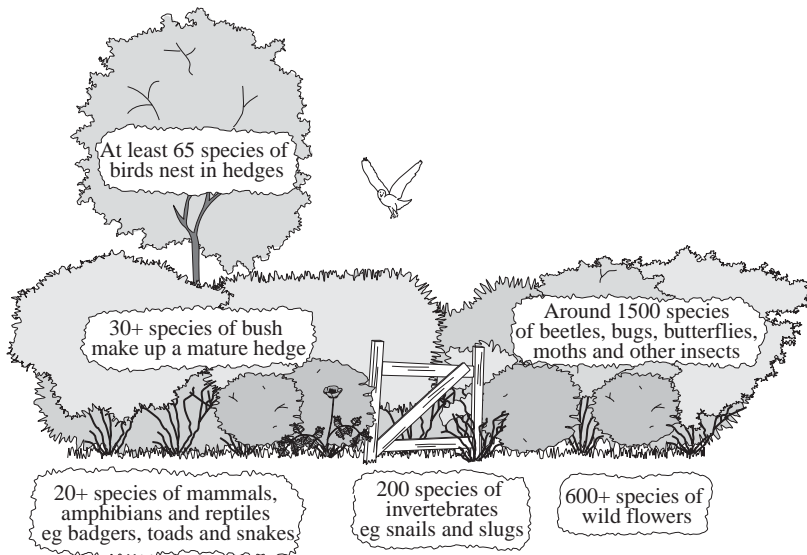


Figure 5

(i) Identify the trophic levels within the hedge shown in **Figure 5**.

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(2 marks)

(ii) How might the control of field pests by farmers affect the food chain in the hedge shown in **Figure 5**?

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(2 marks)

(iii) Suggest reasons for the differences between the trophic levels that you have identified in (a)(i).

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(4 marks)

(b) Examine the links between the biotic and the abiotic elements of **one** small-scale ecosystem that you have studied.

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(7 marks)

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Total for this question: 15 marks

- (a) **Figure 6** illustrates changes in the amount of arable land farmed organically in southern England between 1999 and 2002.

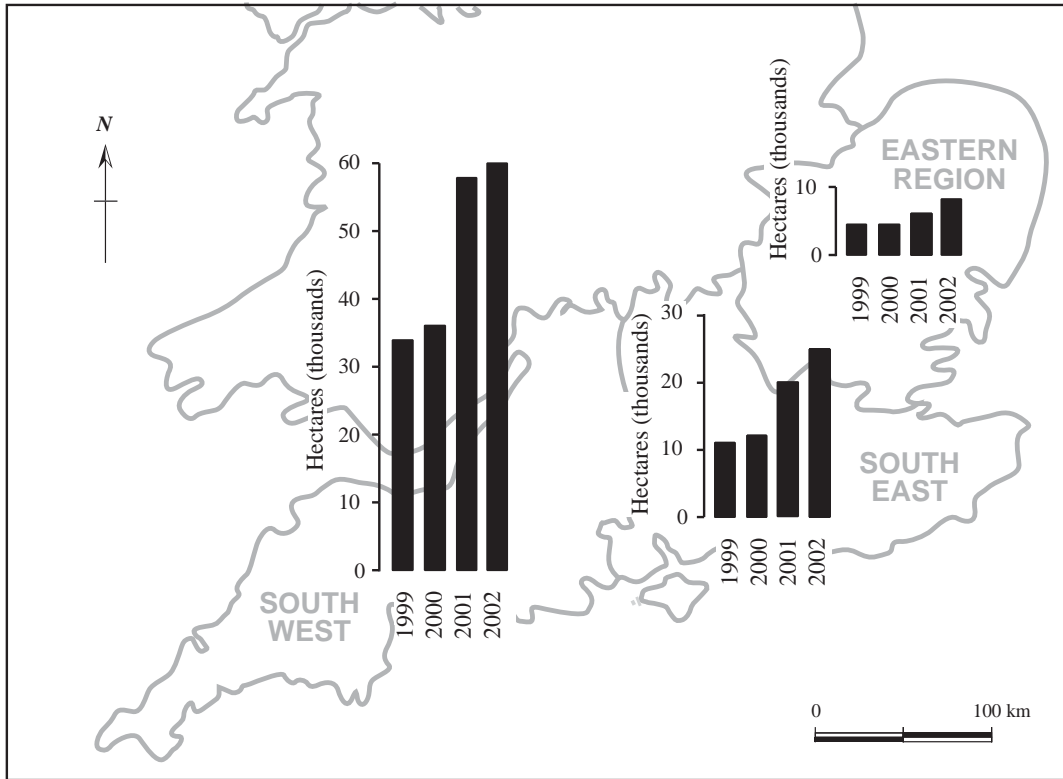


Figure 6

- (i) With reference to **Figure 6**, describe the variations in the amount of arable land farmed organically in **2002**.

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(2 marks)

- (ii) How did the amount of organically farmed arable land change between 1999 and 2002?

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(2 marks)

(b) In what ways can organic farming enhance soil quality?

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(4 marks)

(c) Examine the links between human activity and soil erosion.

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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.

How and why does the load transported by rivers vary? (20 marks)

8 CLIMATIC HAZARDS AND CHANGE

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

Assess the impact of an El Niño event on climatic conditions and economic activity. (20 marks)

9 ENERGY AND LIFE

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

Explain why deforestation of the tropical rainforests is of continuing concern. (20 marks)

END OF QUESTIONS**ACKNOWLEDGEMENT 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 2: Environment Agency – Midlands Region

Question 3: Figure 3: *Philip's Certificate Atlas and Philip's Geographical Digest*; Octopus Publishing Ltd

Question 4: Figure 4: © 2003 Cui et al; licensee BioMed Central Ltd. 'Air Pollution and Case Fatality of SARS in the People's Republic of China', <http://www.ehjournal.net/content/2/1/15>

Question 5: Figure 5: NAISH: Geography 16–19 Core Text. Publishers: Pearson Education Limited

Question 6: Figure 6: Crown copyright material is reproduced with the permission of the Controller of HMSO and the Queen's Printer for Scotland

QUESTION
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