

Surname						Other Names					
Centre Number						Candidate Number					
Candidate Signature											

For Examiner's Use
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General Certificate of Education  
January 2007  
Advanced Subsidiary Examination



**GEOGRAPHY (SPECIFICATION B)**  
**Unit 2 The Physical Options**

**GGB2**

Monday 15 January 2007 9.00 am to 10.00 am

**You will need no other materials.**  
You may use a calculator.

For Examiner's Use			
Question	Mark	Question	Mark
P	X	R	X
1		3	
Q	X		
2			
TOTAL			
Examiner's Initials			

Time allowed: 1 hour

**Instructions**

- Use blue or black ink or ball-point pen. You may use pencil for maps, diagrams and graphs.
- Fill in the boxes at the top of this page.
- Answer **one** question in the spaces provided.
- Choose option **P** or **Q** or **R**.  
Option **P**: Glacial Environments – Page 2.  
Option **Q**: Coastal Environments – Page 8.  
Option **R**: Urban Physical Environments (Temperate Urban Areas) – Page 14.
- Do all rough work in this book. Cross through any work you do not want to be marked.
- Give sketch maps, diagrams and specific examples, where appropriate.
- If there is not enough space for your answer(s), use the extra page(s) at the end of the book. If you do this, make sure that you show the number of the question you are answering.

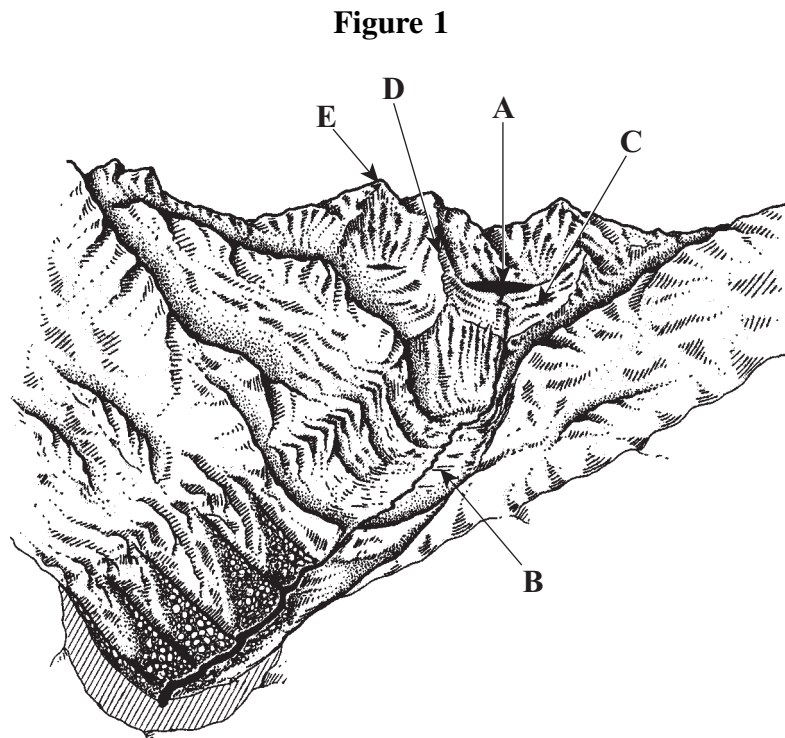
**Information**

- The maximum mark for this paper is 50.
- The marks for questions are shown in brackets.
- You are expected to use a calculator where appropriate.
- You will be marked 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 legibility of your handwriting and the accuracy of your spelling, punctuation and grammar will also be considered.

Answer the question on Option **P** or **Q** or **R**.

**OPTION P: GLACIAL ENVIRONMENTS**

1 (a) Study **Figure 1**.



(i) Match the glacial landforms labelled **A** to **E** to the names in the table below.

Landform	Identifying letter
Arête	
Terminal moraine	
Glacial trough	
Pyramidal peak	
Hanging valley	
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(5 marks)

(ii) Choose **one** of the landforms listed and explain how it was formed.

Chosen landform .....

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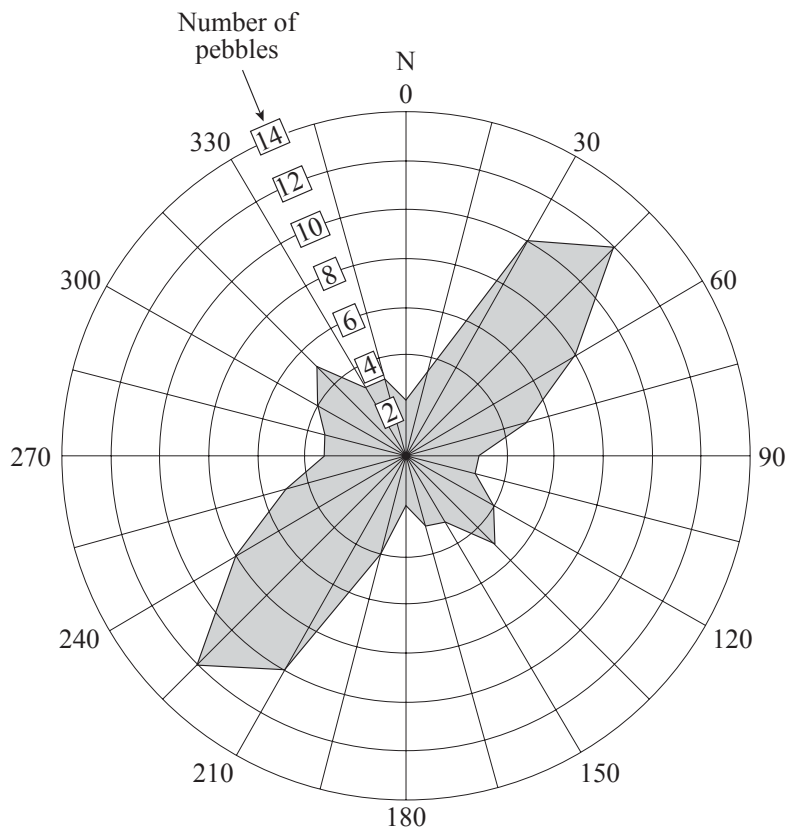
(7 marks)

**Question 1 continues on the next page**

**Turn over ►**

(b) Study **Figure 2** which shows the orientation of long axes of pebbles in glacial till.

**Figure 2**



(i) Describe in detail what **Figure 2** shows.

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(6 marks)

(ii) Outline **two** other pieces of evidence that would indicate the direction of ice movement.

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*(5 marks)*

(c) Using an example(s), describe an outwash plain and explain its formation.

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**Question 1 continues on the next page**

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(8 marks)

- (d) (i) Define the term *permafrost*.  
Describe the various conditions in which it is formed.

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- (ii) Explain how the process of frost heave operates within periglacial regions.

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(7 marks)

(iii) Describe **one** landform that has been created by frost heave.

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**END OF OPTION P**

**Turn over for Option Q**

Answer the question on Option **P** or **Q** or **R**.

**OPTION Q: COASTAL ENVIRONMENTS**

2 (a) Study **Figure 3**.

Question 2 **Figure 3** (the breakup of a headland through coastal erosion) is not reproduced here due to third-party copyright constraints.

(i) Match the coastal landforms labelled **A** to **E** to the names in the table below.

Landform	Identifying letter
Stack	
Wave cut platform	
Stump	
Bar	
Arch	
Wave cut notch	

(5 marks)

(ii) Choose **one** of the landforms listed and explain how it was formed.

Chosen landform .....

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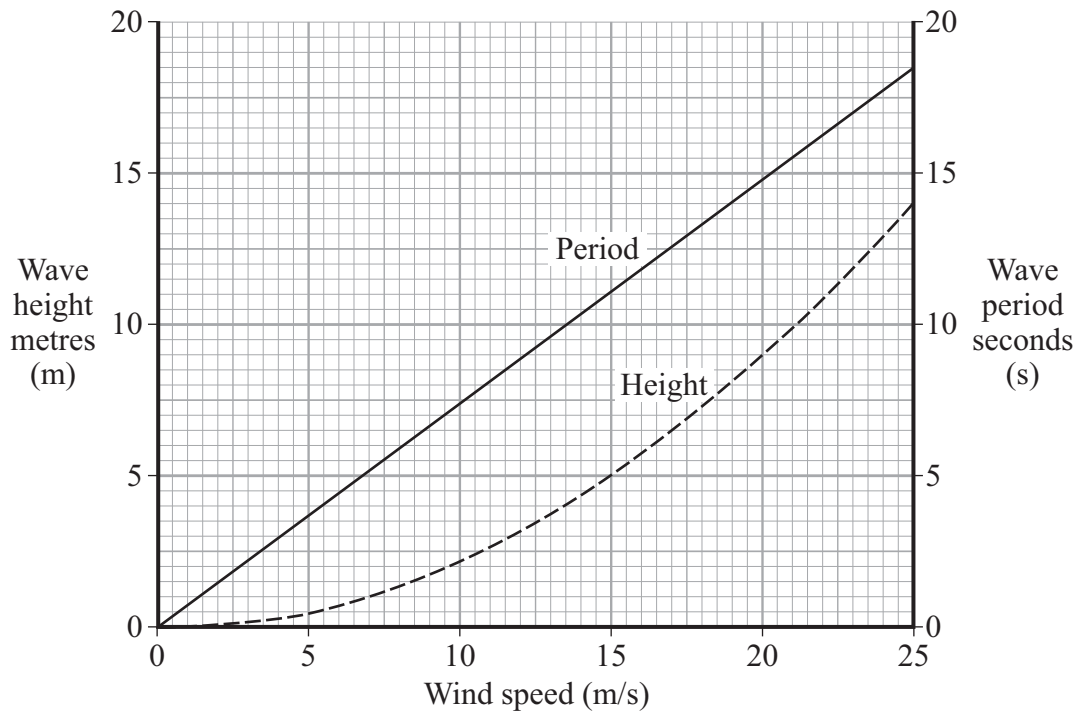
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**Question 2 continues on the next page**

**Turn over ►**

(b) Study **Figure 4**.

**Figure 4**



Using **Figure 4** only, describe the relationships between:

wave height and wind speed

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wave period and wind speed.

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(6 marks)

(c) (i) Using an example(s), describe the main features of a spit.

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(ii) Explain how the process of longshore drift and other marine processes contribute to the formation of a spit.

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*(7 marks)*

- (d) Describe **one** example of a scheme of coastal management. In your answer you should state why the scheme was put in place and how the scheme attempts to achieve its main aim(s).

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(e) (i) Explain the role of sea level change in the formation of coral reefs.

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(6 marks)

(ii) Using an example(s), show how human activity affects coral reefs.

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**END OF OPTION Q**

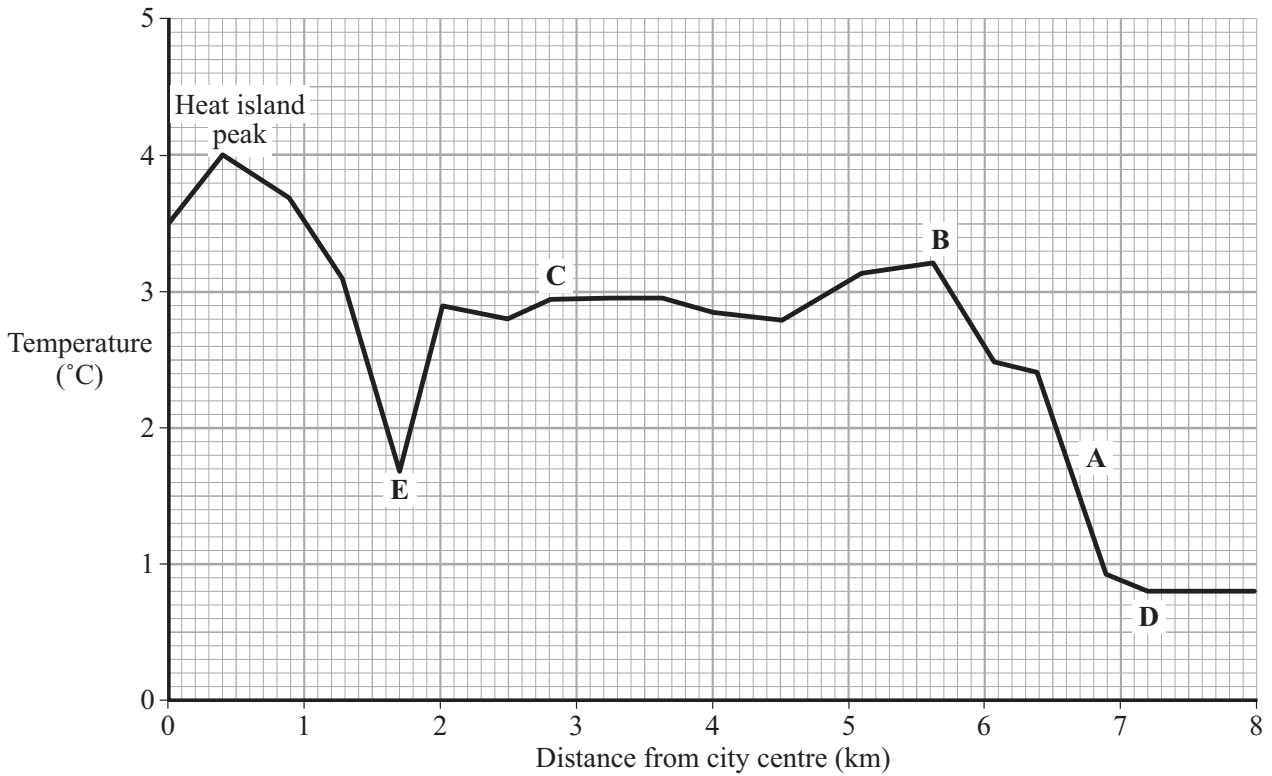
**Turn over for Option R**

Answer the question on Option **P** or **Q** or **R**.

**OPTION R: URBAN PHYSICAL ENVIRONMENTS (TEMPERATE URBAN AREAS)**

- 3 (a) Study **Figure 5** which shows temperature variation with distance from the centre of Oxford at 21.00 hours on 26 February 1988.

**Figure 5**



- (i) Match the heat island features or land uses labelled **A** to **E** to the names in the table below.

Heat island feature or land use	Identifying letter
Heat island 'plateau'	
Rural area	
Suburban commercial area	
Railway station	
River	
Heat island 'cliff'	

(5 marks)

(ii) Explain the temperature variations shown in **Figure 5**.

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*(7 marks)*

(iii) Describe the seasonal variations in the urban heat island effect that occur within temperate urban areas.

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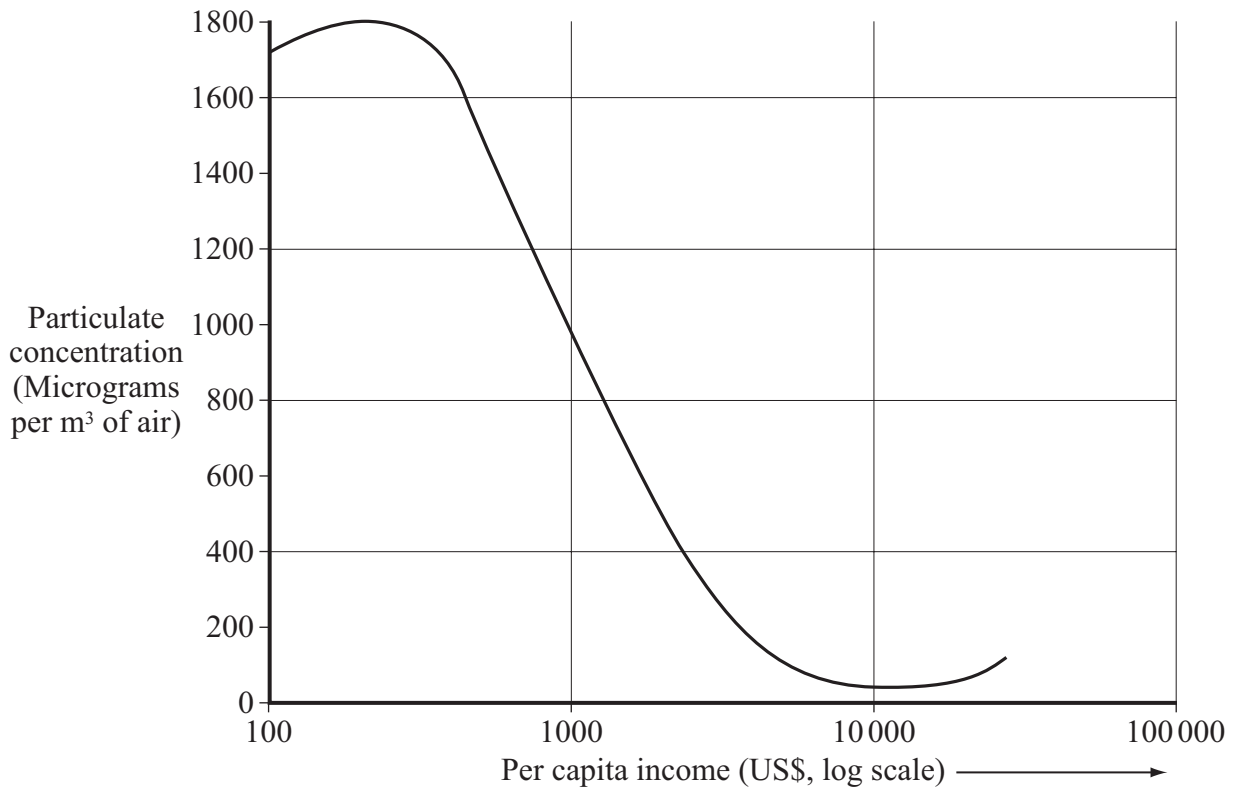
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(6 marks)

(b) Study **Figure 6** which shows the relationship between atmospheric particulate concentration in urban areas and per capita income.

**Figure 6**



(i) Using **Figure 6** only, describe the relationship between concentrations of particulates and income.

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(6 marks)

- (ii) Explain the role of atmospheric particulates in the formation of fog in urban areas.

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**Question 3 continues on the next page**

**Turn over ►**

(c) Explain why thunderstorms occur more frequently in urban areas than they do in surrounding rural areas.

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(d) (i) Using an example(s), describe how new species have been introduced into an area undergoing urbanisation.

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- (ii) Using examples, describe the distinctive ecologies of parks and gardens in towns and cities.  
Explain how these ecologies have developed.

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(8 marks)

**END OF QUESTIONS**

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Question 1 Figure 2: copyright © Oxford University Press from *Advanced Geography* by Garrett Nagle (OUP, 2000), reprinted by permission of Oxford University Press.  
Question 2  
Question 2 Figure 4: [http://oceanworld.tamu.edu/resources.ocng\\_textbook/chapter16/chapter16\\_04.htm](http://oceanworld.tamu.edu/resources.ocng_textbook/chapter16/chapter16_04.htm)  
Question 3 Figure 5: M Shahgedanova & T Burt, *Geography Review*, Vol. 11, No. 3, January 1998, Philip Allan.

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QUESTION  
NUMBER

Write the question number in the left-hand margin.

A series of horizontal dotted lines for writing answers, spanning the width of the page.