Centre No.						Paper Reference							Surname	Initial(s)
Candidate No.						6	4	7	1	/	0	1	Signature	

Paper Reference(s)

6471/01

Edexcel GCE

Geography B

Advanced Subsidiary

Unit 1: Changing Landforms and their Management

Friday 25 May 2007 – Afternoon

Time: 1 hour 30 minutes

Examiner's use only

Team Leader's use only

Question Number	Leave Blank
1	
2	
3	
4	
5	
Total	

Materials required for examination	Items included with question papers
Nil	Resource Booklet

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initials and signature.
Check that you have the correct question paper.
Answer **THREE** questions in the spaces provided in this question paper. You **MUST** write within the black margins.
Do not use pencil. Use blue or black ink.
Indicate which question you are answering by marking the box (☒).
If you change your mind, put a line through the box (☒) and then indicate your new question with a cross (☒).
Do not return the Resource Booklet with the question paper.

Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
There are 5 questions in this question paper. You should only answer three.
The total mark for this paper is 90.
There are 24 pages in this question paper. Any blank pages are indicated.

Advice to Candidates

Quality of written communication will be assessed in the extended writing questions.

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Answer THREE questions.

If you answer Question 1 put a cross in this box ☒.

1. (a) Study Figure 1(a) on page 2 in the Resource Booklet. It is a flow diagram of the **drainage basin** system.

(i) Identify:

output A .....

transfer B .....

store C .....

(3)

(ii) Suggest **two** ways in which the system would change if some of the vegetation cover was removed.

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(2)

(iii) Explain why groundwater often makes a greater contribution to river flow in the summer than it does in winter.

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(b) Study Figure 1(b) on page 2 in the Resource Booklet. It shows the soil moisture budget for Phoenix, Arizona in the USA.

(i) Define the following terms:

soil moisture surplus

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(2)

soil moisture recharge

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(2)

(ii) For how many months does Phoenix have a soil moisture deficit?

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(1)

(iii) Suggest how the climate might be the cause of this soil moisture deficit.

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(iv) Use the graph to explain the likely implications for water management in the city of Phoenix and the surrounding area. You should consider farmers and city dwellers in your answer.

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(5)

(c) With reference to one or more **named examples**, show how bad river management can lead to disastrous consequences.

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Q1

(Total 30 marks)

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If you answer Question 2 put a cross in this box ☒.

2. (a) Study Figure 2 on page 3 in the Resource Booklet. It shows satellite images of a section of the Jamuna River in Bangladesh.

(i) Describe the main characteristics of the river channel in February.

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(3)

(ii) Describe the changes to the channel between February and August.

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(iii) Suggest reasons for these changes.

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(4)

(iv) Suggest why the Bangladeshi people find it difficult to manage the Jamuna River with hard engineering.

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(b) Study the table below. It gives information about the percentage of Bangladeshi households affected by the impacts of flooding in 2002.

FACTOR	% CHAR HOUSEHOLDS	% OTHER RURAL HOUSEHOLDS
Flood	52	4
Riverbank erosion	13	<1
Loss of crops	44	1
Loss of livestock	16	3
Loss of land	10	1
Loss of house	5	1
Access to clinic	42	70
Diarrhoea in children	12.2	7

(Source: National Surveillance Project Bulletin No.14, 2003)

Use the data to suggest why the river makes life more precarious for the char households than elsewhere in rural Bangladesh.

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(c) Using **named examples**, examine the impact of **one** of the following on river environments:

- dams and reservoir construction
- urbanisation
- water quality.

Chosen topic ....

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Q2

(Total 30 marks)

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If you answer Question 3 put a cross in this box ☒ .

3. Study Figure 3 on page 4 in the Resource Booklet. It is a map of the Christchurch area, South Island, New Zealand.

(a) (i) Using the map, identify features **A** and **B**.

A .....

B .....

(2)

(ii) Suggest how **one** of the features identified in (a)(i) may have been formed. You may draw a diagram as part of your answer.

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(iii) Suggest how a storm event may affect feature **B**.

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(2)

(iv) Why has a delta formed at **C**?

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(b) (i) There are several wetland ecosystems on Figure 3.

What is a wetland ecosystem?

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(2)

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(ii) For a **named wetland ecosystem**, describe how you would undertake a fieldwork investigation of its structure.

Named wetland ecosystem .....

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(6)

(c) With reference to one named **coastal** ecosystem, examine how it has been changed by **either** natural processes **or** human activities.

Named coastal ecosystem .....

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Q3

(Total 30 marks)

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If you answer Question 4 put a cross in this box ☒.

4. (a) Study Figure 4(a) on page 5 in the Resource Booklet. The photograph shows how the Scottish coastline has been affected by both long-term changes in sea level and present day processes.

(i) Identify features **X** and **Y**.

X .....

Y .....

(2)

(ii) Explain how changes in sea level have created features **X** and **Y**.

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(3)

(iii) How might the river at **Z** affect the sediment in the bay?

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(iv) What might be the impacts of increased human activity on the landscape shown?

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(3)

(v) In what ways can decision makers ensure that **landscapes** like this one are protected?

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(3)

(b) Study Figure 4(b) on page 5 in the Resource Booklet. It is a sketch cross profile of the beach shown in Figure 4(a).

Describe and explain how **present day** coastal processes may have formed this beach profile.

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(6)

(c) With reference to a named stretch of coastline, examine how physical factors have affected its coastal features.

Named coastline .....

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Q4

(Total 30 marks)

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If you answer Question 5 put a cross in this box ☒ .

5. (a) Study Figure 5(a) on page 6 in the Resource Booklet. It shows a recent cliff collapse on the Isle of Wight.

(i) The following processes are at work on these cliffs:

salt weathering hydraulic action abrasion freeze-thaw

Put each process into the correct column in the table below.

CLIFF-FOOT PROCESSES	CLIFF-FACE PROCESSES

(4)

(ii) Explain how cliff-foot and cliff-face processes combine to cause cliff collapse.

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(b) Study Figure 5(b) on page 6 in the Resource Booklet. It shows a stretch of the Dorset coast.

(i) This coastline shows differential erosion. Explain how this may have occurred.

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(3)

(ii) Suggest how and why this stretch of cliff top is being actively managed.

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(iii) This location is a popular fieldwork site for A-level geography students. Identify the potential hazards of undertaking fieldwork here and suggest possible ways of minimising them.

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(3)

(c) Referring to named examples, evaluate the success of management schemes in dealing with coastal erosion.

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(10) **Q5**

(Total 30 marks)

TOTAL FOR PAPER: 90 MARKS

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