

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

Paper Reference(s)

6461/01

Edexcel GCE

Geography A

Advanced Subsidiary

Unit 1: Physical Environments
Module 15: Landforms - Monsoon

Monday 15 January 2007
Time: 1 hour 15 minutes

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initial(s) and signature.
Do not use pencil. Use blue or black ink.

Do not use pencil. Use blue or black ink.
Check that you have the correct question paper.

Check that you have the correct question paper.
Answer **THREE** questions, choosing **ONE** from

Answer THREE questions, choosing ONE from each of sections A, B and C.
For each section, indicate which question you are answering by marking the box.

For each section, 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 ().

your mind, put a line through the box (~~☒~~) and then indicate your new question with a cross (☒).

Write your answers in the spaces provided in this question paper.

Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. (2). The total mark available in this section is 20.

There are 6 questions in this question paper. All questions carry 20 marks. The total mark for this paper is 60.

The total mark for this paper is 60.

Advice to Candidates

You will be assessed on your ability to organise and present information, ideas, descriptions and arguments clearly and logically, taking into account your use of grammar, punctuation and spelling. In all parts, credit will be given for the use of diagrams and sketch maps where they are appropriate.

This publication may be reproduced only in accordance with
Edexcel Limited copyright policy.
©2007 Edexcel Limited.

Printed's Log No.

Printer's Log. No.
M24719A

W850/S6461/57570 6/6/6/4/4/4



Turn over

edexcel 
advancing learning, changing lives

SECTION A

Answer **EITHER** Question 1 **OR** Question 2.

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

1. (a) Read Figure 1 which is an extract from a recently published book about volcanic activity.

All told there are sixty-seven volcanoes that have been manufactured by the processes in this one subduction zone – and since there are 4,000 miles separating northern Colombia from southern Chile, and since there is a sort of regularity to the Andes, that means there is more or less one volcano piercing the sky every ...
A ... miles.

(Source: Simon Winchester, *Krakatoa*, Penguin, 2004)

Figure 1

- (i) Calculate the value of **A**.

.....
(1)

- (ii) Name the tectonic plate on which the Andes are found.

.....
(1)

- (iii) Describe the movements of tectonic plates that occur at a subduction zone.

.....
.....
.....
.....
(2)



(iv) Explain how processes associated with subduction result in the formation of volcanoes.

Leave
blank

(4)



3

Turn over

Leave
blank

(b) (i) Describe the global distribution of ocean ridges.

.....
.....
.....
.....

(2)

(ii) Explain how ocean ridges are formed.

.....
.....
.....
.....
.....
.....
.....

(4)



- (c) Describe and explain how igneous activity can provide a range of economic benefits.

Leave
blank

(6)

Q1

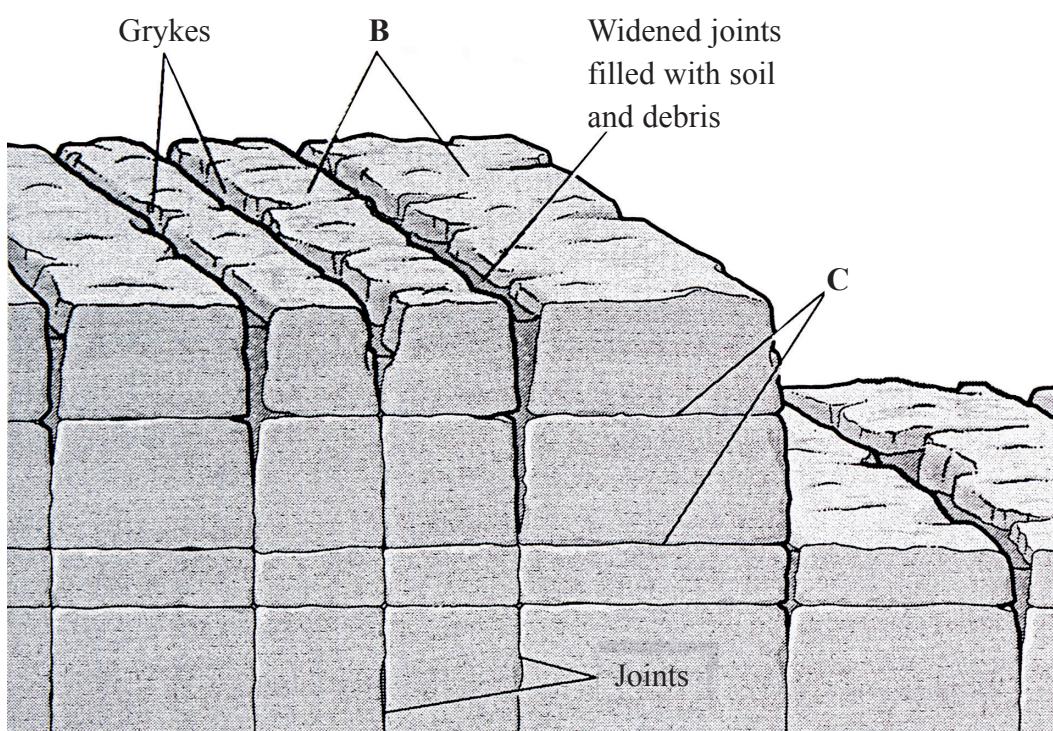
(Total 20 marks)



Leave
blank

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

2. (a) Study Figure 2 which is a diagram of a limestone pavement.



(Source: David Waugh, *Geography – An Integrated Approach: Supplement*, Nelson Thornes, 2005)

Figure 2

- (i) Identify the features marked:

1. **B**

..... (1)

2. **C**.

..... (1)

- (ii) Describe the pattern of joints in the limestone.

.....
.....
.....
.....

(2)



(iii) Explain how grykes are formed.

Leave
blank

(4)



7

Turn over

Leave
blank

(b) Explain how **rates** of **physical** weathering may be influenced by:

(i) temperature

.....
.....
.....
.....
.....
.....
.....
.....

(3)

(ii) vegetation.

.....
.....
.....
.....
.....
.....
.....
.....

(3)



- (c) Describe and explain the range of impacts that weathering can have on human activity.

Leave
blank

(6)

Q2

(Total 20 marks)

TOTAL FOR SECTION A: 20 MARKS



C

Turn over

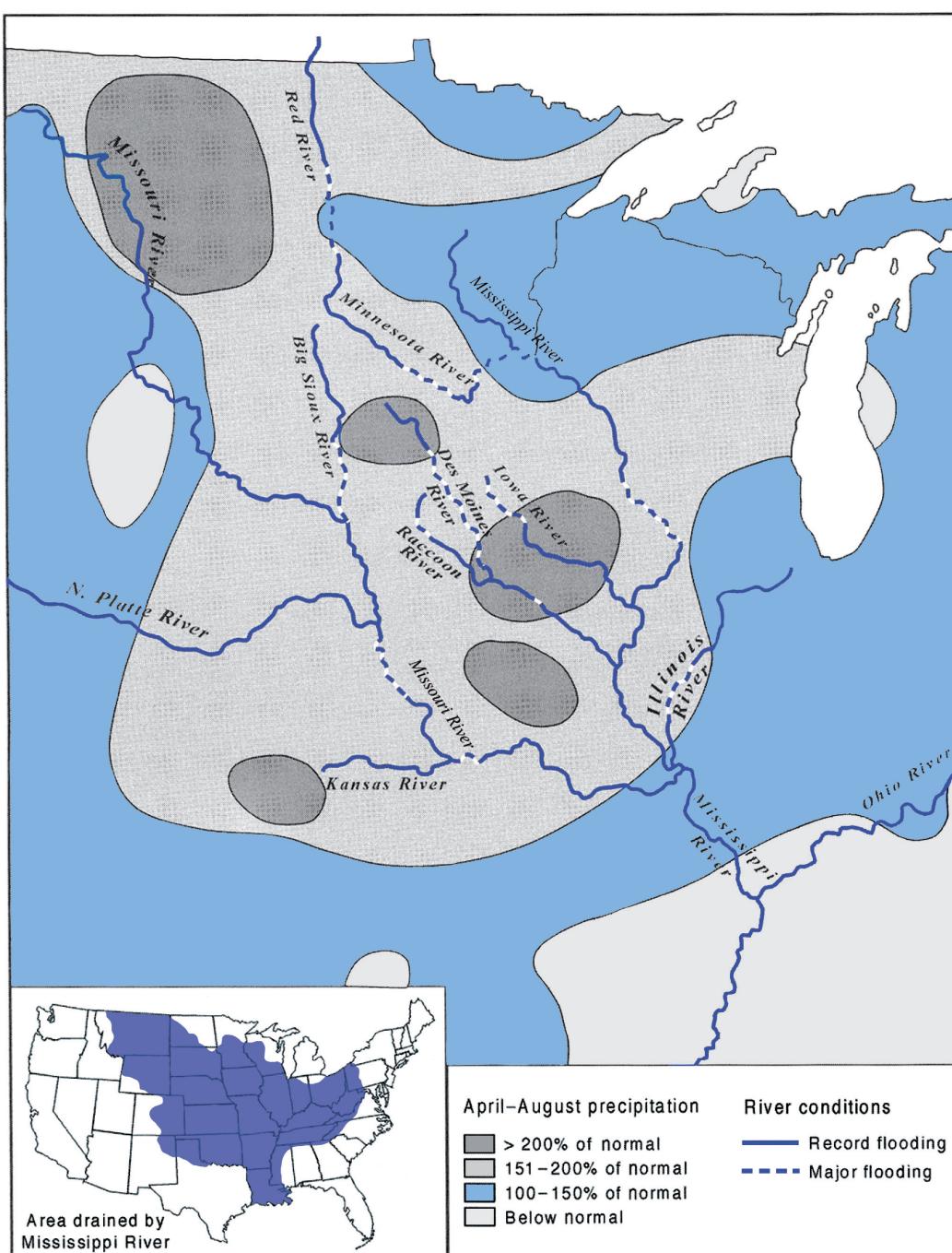
Leave
blank

SECTION B

Answer **EITHER** Question 3 **OR** Question 4.

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

3. (a) Study Figure 3 which shows precipitation anomalies and flooding in part of the Mississippi drainage basin during 1993.



(Source: J. Williams, *The Great Flood*, Weatherwise 47, 1994)

Figure 3



Leave
blank

- (i) Name a river that experienced record flooding throughout its length during 1993.

.....

(1)

- (ii) Describe the pattern of April–August precipitation.

.....
.....
.....
.....
.....

(3)

- (iii) Suggest two reasons why this pattern of precipitation is likely to have been one of the causes of flooding.

1

.....

.....

.....

2

.....

.....

.....

(4)



- (b) (i) Describe the relationship between river velocity and the maximum particle size that a river can erode.

.....
.....
.....
.....

(2)

- (ii) Explain this relationship.

.....
.....
.....
.....
.....
.....
.....
.....

(4)



- (c) With reference to a named river, describe and explain the downstream changes in its velocity. You may use a graph or map to help your answer.

Named river

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

Leave
blank

.....
(6)
(Total 20 marks)

Q3

13

Turn over



Leave
blank

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

4. (a) Study Figure 4 which shows the global hydrological cycle.

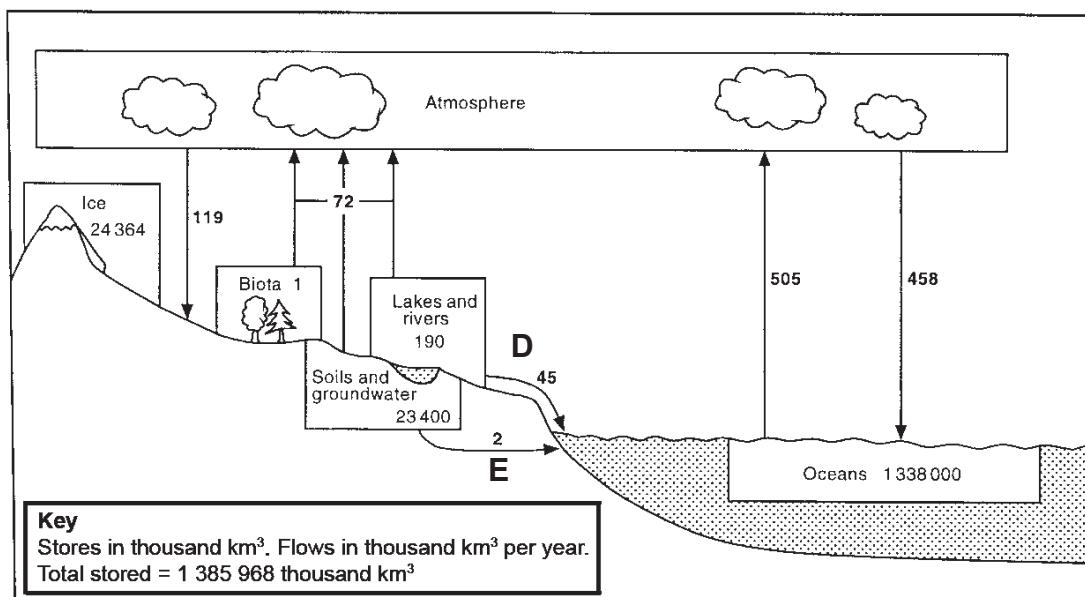


Figure 4

- (i) Calculate the amount of water stored in the atmosphere.

.....
.....
(2)

- (ii) Identify the flows marked:

1. **D**.
.....
(1)
2. **E**.
.....
(1)



(iii) Explain how water is transferred from below the ground surface to the atmosphere store.

.....

.....

.....

.....

.....

.....

.....

(4)

Leave
blank



15

Turn over

Leave
blank

(b) (i) Define the term **precipitation**.

.....
.....
.....
.....

(2)

(ii) Explain how frontal processes may lead to the formation of rainfall.

.....
.....
.....
.....
.....
.....
.....
.....
.....

(4)



- (c) With reference to a named example, explain the formation and subsequent development of a waterfall. You may use a diagram to help your answer.

Named example

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

Leave
blank

(6)

Q4

(Total 20 marks)

TOTAL FOR SECTION B: 20 MARKS



17

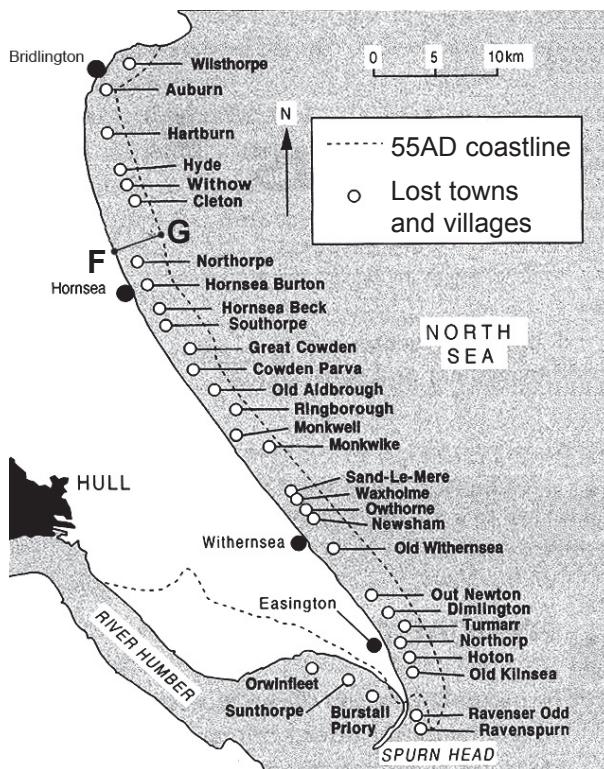
Turn over

SECTION C

Answer EITHER Question 5 OR Question 6.

If you answer Question 5 put a cross in this box

5. (a) Study Figure 5 which shows the changes in position of the Humberside coastline, north-eastern England, since 55AD.



(Source: Adapted from I. Murray, *The Times*, 23rd March 1994)

Figure 5

- (i) Calculate the mean annual rate of coastal retreat between F and G.

(1)

- (ii) Describe the changes in the position of the coastline.

(3)



(iii) Suggest possible reasons why these changes have occurred.

Leave
blank

(4)



19

Turn over

Leave
blank

(b) (i) Define the term **ecosystem**.

.....
.....
.....
.....

(2)

(ii) Suggest reasons why coastal ecosystems are **intentionally** modified by human activity.

.....
.....
.....
.....
.....
.....
.....
.....

(4)



- (c) Describe the appearance, and explain the formation, of a raised beach and an abandoned (relict) cliff. You may use a diagram to help your answer.

Leave
blank

Q5

21

Turn over



Leave
blank

If you answer Question 6 put a cross in this box .

6. (a) Study Figure 6 which is a classification of selected coastal landforms based on the main process responsible for their formation.

EROSION	DEPOSITION	RISING SEA-LEVEL
wave-cut platform	cuspate foreland	ria
blow-hole	off-shore bar	fjord
arch	beach	Dalmatian coast
stump	on-shore bar	estuary

Figure 6

- (i) Identify the following landforms:

1. An elongated ridge of sand and/or shingle lying parallel to the coastline and unattached to it.

.....
(1)

2. The remains of an eroded stack that may only be visible at low tide.

.....
(1)

3. A submerged glaciated valley.

.....
(1)



<p>(ii) Describe the appearance of a cuspat foreland.</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p style="text-align: right;">(2)</p> <p>(iii) Suggest how a cuspat foreland may be formed.</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p style="text-align: right;">(3)</p>	Leave blank
--	----------------



- (b) With reference to a located area, describe and explain the possible impact of rising sea-levels on human use of the coastline. You may use a diagram or map to help your answer.

Located area

Leave
blank

(6)



<p>(c) (i) Define the term psammosere.</p> <p>.....</p> <p style="text-align: right;">(2)</p> <p>(ii) Explain two ways in which plants adapt to the harsh environmental conditions in the early stages of a psammosere.</p> <p>1</p> <p>.....</p> <p>2</p> <p>.....</p> <p style="text-align: right;">(4)</p>	<p>Leave blank</p> <p>Q6</p> <p>(Total 20 marks)</p>
<p>TOTAL FOR SECTION C: 20 MARKS</p> <p>TOTAL FOR PAPER: 60 MARKS</p>	

END



BLANK PAGE



BLANK PAGE



27

BLANK PAGE

Every effort has been made to contact the copyright holders where possible. In some cases, every effort to contact copyright holders has been unsuccessful and Edexcel will be happy to rectify any omissions of acknowledgements at first opportunity.

