

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.

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



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

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

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(ii) Explain how ocean ridges are formed.

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

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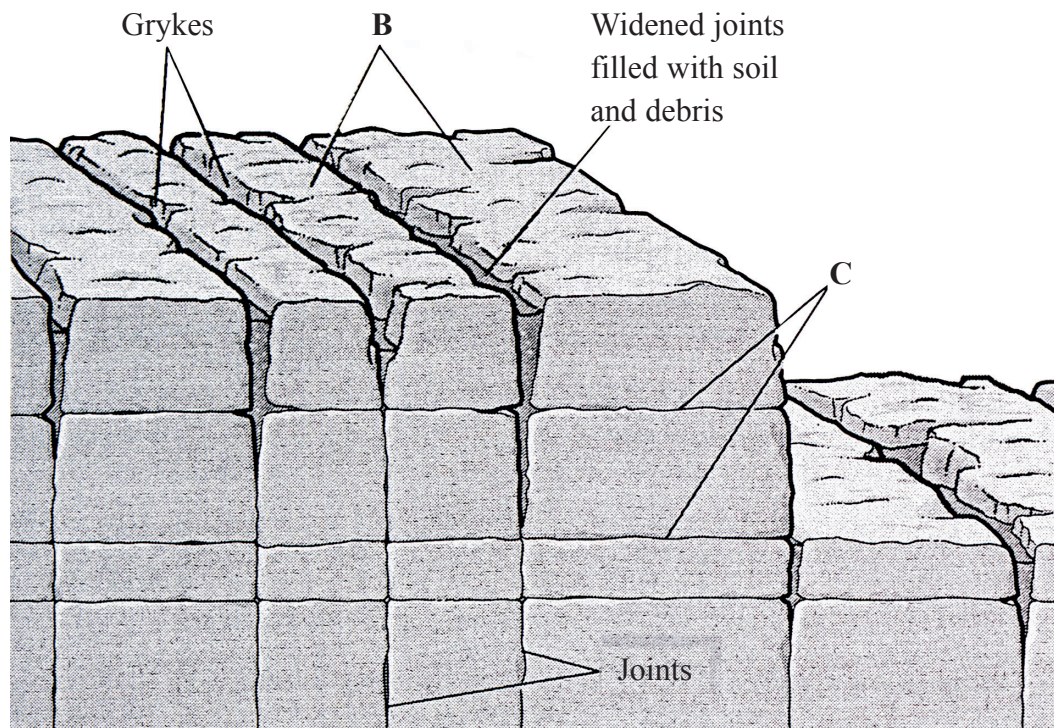
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Q1



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.

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..... (2)



(iii) Explain how grykes are formed.

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

(i) temperature

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(ii) vegetation.

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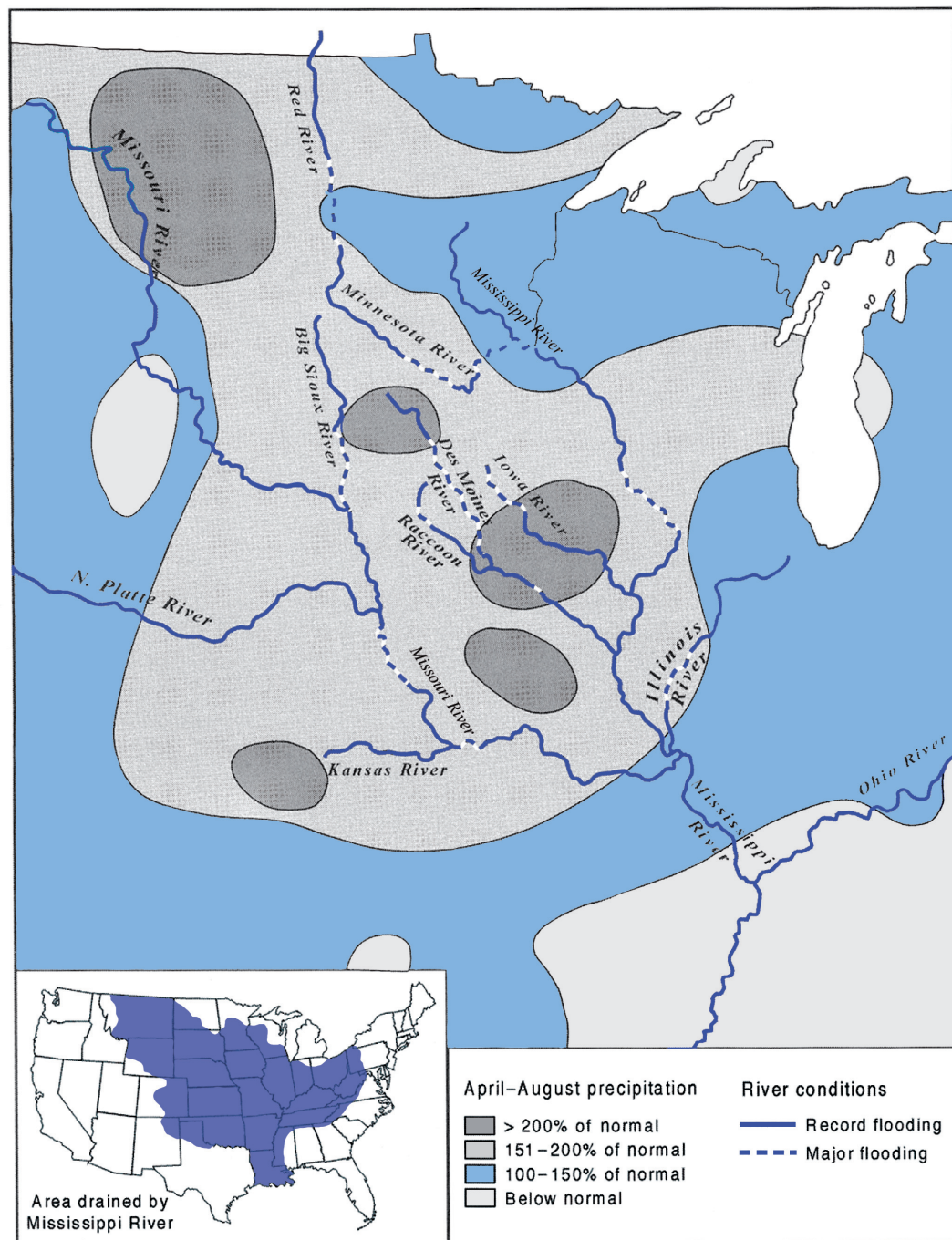


SECTION B

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



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

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(1)

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

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

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

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(ii) Explain this relationship.

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(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

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(Total 20 marks)

Q3

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

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

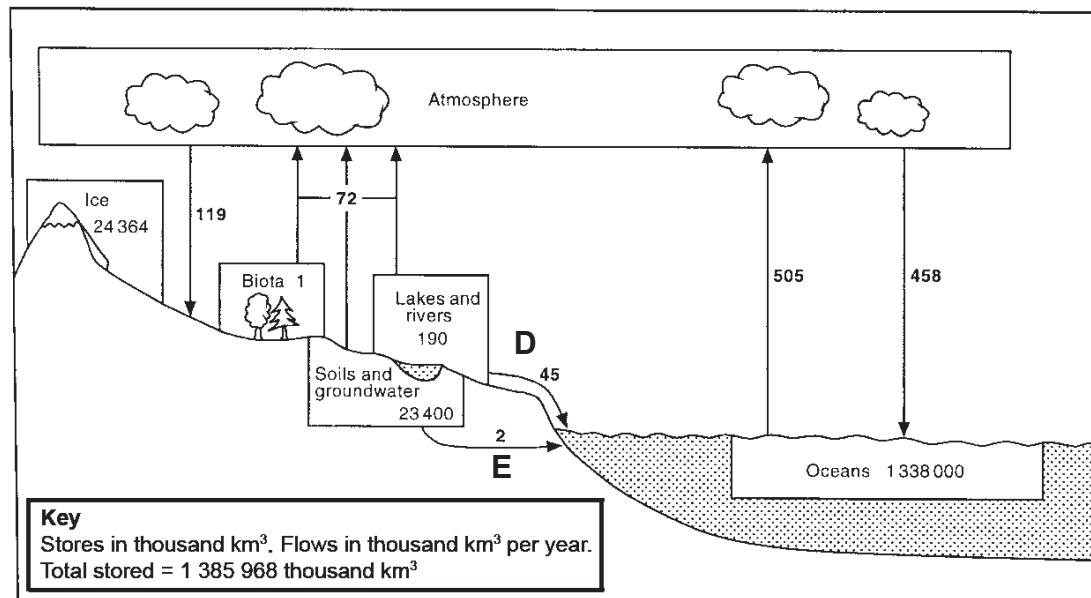


Figure 4

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

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(2)

(ii) Identify the flows marked:

1. D

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(1)

2. E.

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(1)



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

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

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

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(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

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(6) Q4

(Total 20 marks)

TOTAL FOR SECTION B: 20 MARKS

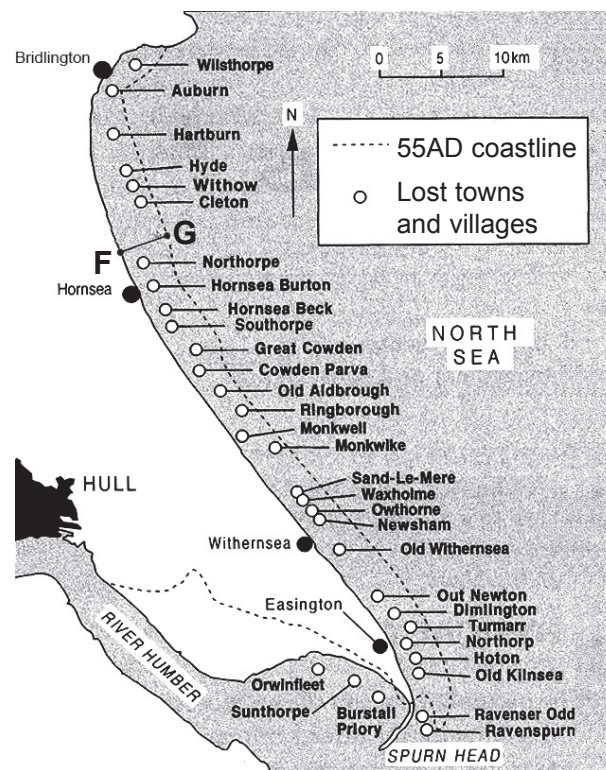


SECTION C

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.

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

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

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

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

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(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.

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Q5

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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	cusate 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.

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(1)

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

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(1)

3. A submerged glaciated valley.

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(1)



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(ii) Describe the appearance of a cusplate foreland.

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(iii) Suggest how a cusplate foreland may be formed.

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- (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

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(c) (i) Define the term **psammosere**.

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(ii) Explain two ways in which plants adapt to the harsh environmental conditions in the early stages of a psammosere.

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Q6

(Total 20 marks)

TOTAL FOR SECTION C: 20 MARKS

TOTAL FOR PAPER: 60 MARKS

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