

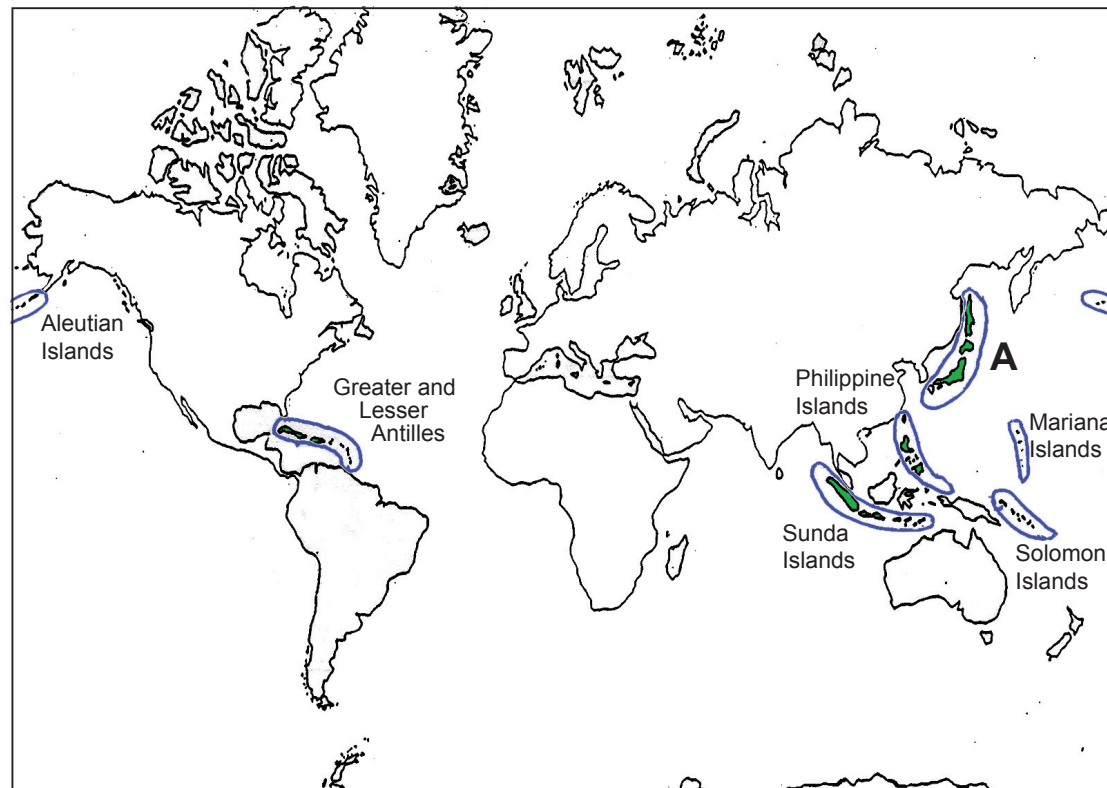


**SECTION A**

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

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

1. (a) Study Figure 1 which shows the global distribution of island arcs.



**Figure 1**

(i) Name the island arc labelled A.

..... (1)

(ii) Describe the global distribution of island arcs.

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(iii) Explain how island arcs are formed.

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(4)

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

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(2)

(ii) Briefly explain how rocks are weathered by:

1. pressure release

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(2)

2. thermal expansion (insolation).

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(2)





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M 2 3 4 4 6 R A 0 5 2 8

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

2. (a) Study Figure 2 which contains an extract about the theory of continental drift from a recently published book.

Wegener developed the theory that the world's continents had once existed as a single land mass he called \_\_\_\_\_, where flora and fauna had been able to mingle, before splitting apart and floating off to their present positions. He set the idea out in a book called *Die Entstehung der Kontinente und Ozeane*, or *The Origin of Continents and Oceans*, which was published in German in 1912 and – despite the outbreak of the First World War in the meantime – in English three years later. .... but Wegener had no background in geology. He was a meteorologist, for goodness' sake. A weatherman ...

(Source: Bill Bryson, *A Short History of Nearly Everything*, Black Swan, 2004)

**Figure 2**

- (i) What name is given to the 'single land mass'?

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(1)

- (ii) Describe the evidence used to support the theory of continental drift in terms of:

1. fossils

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(2)

2. geology.

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(iii) Suggest why the theory was not readily accepted by geologists.

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(b) (i) What are **hot spots**?

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(ii) Describe the characteristics of the lava that usually erupts at hot spots.

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(c) With reference to a located example, describe and account for the tectonic activity typically associated with a **conservative** plate margin.

Located example .....

You may use a diagram to help your answer.

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<p><b>TOTAL FOR SECTION A: 20 MARKS</b></p>	



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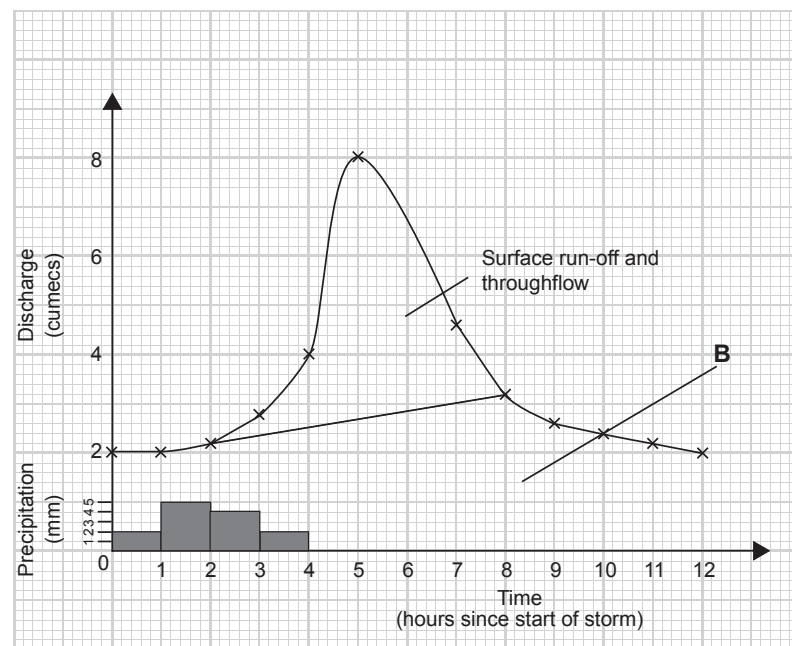


**SECTION B**

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 the storm hydrograph for an event on a small stream in northern England in May 2004.



**Figure 3**

- (i) Name component **B** of this stream's discharge.

..... (1)

- (ii) Calculate the **lag time** of this event.

..... (1)

- (iii) Describe the shape of the hydrograph.

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(3)



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(iv) Explain the influence of two **physical** factors likely to have produced a hydrograph of this shape.

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(3)

(b) Name and outline three mechanisms by which rivers transport sediment.

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(3)



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(c) With reference to a located example, describe the appearance, and explain the formation, of a waterfall.

Located example .....

You may use a diagram to help your answer.

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M 2 3 4 4 6 R A 0 1 3 2 8



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

4. (a) Study Figure 4 which is a classification of river landforms based on their formation.

Erosion	Deposition	Erosion and deposition
waterfall rapids v-shaped valley	braided channel levée delta	meander ox-bow lake flood plain

Figure 4

(i) Identify the following landforms in the table from the definitions below.

1. A river channel divided into two or more channels separated by bars and islands.

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2. Small uneven steps on a river bed often created by resistant bands of rock across the channel.

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3. A low ridge of alluvium running parallel to a river channel.

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(3)

(ii) Describe the position and appearance of a flood plain.

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(2)



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(iii) Explain how flood plains are formed.

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(4)

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

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(ii) Explain how orographic (relief) processes cause rainfall.

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(c) With reference to a named example, describe and explain the downstream changes in river velocity.

Named example .....

You may use a diagram to help your answer.

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<p><b>TOTAL FOR SECTION B: 20 MARKS</b></p>	



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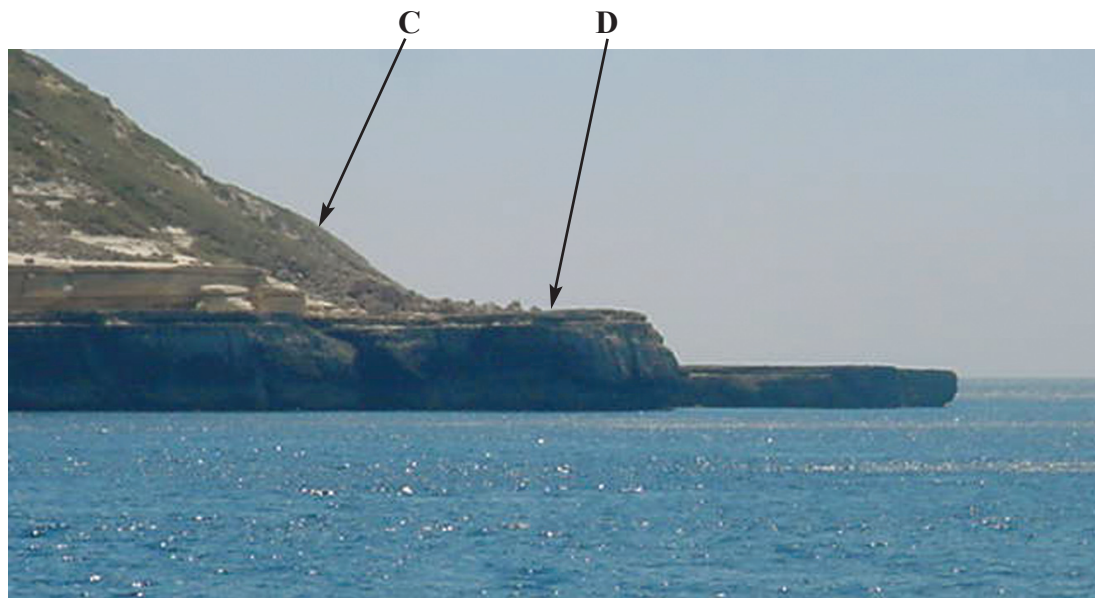


**SECTION C**

Answer **EITHER** Question 5 **OR** Question 6.

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

5. (a) Study Figure 5 which is a photograph of coastal landforms on the south coast of Malta, an area that has experienced long-term sea level change.



(Source: Photograph courtesy of Andy Palmer)

**Figure 5**

- (i) Identify the landforms formed as a result of sea level change:

1. **C** .....

2. **D** .....

**(2)**

- (ii) Describe the sea level change responsible for these landforms.

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**(1)**



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(iii) Suggest reasons for this type of sea level change.

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(b) With reference to a located stretch of coastline, suggest how rising sea levels may influence different types of human activity.

Located coastline .....

You may use a diagram to help your answer.

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**(6)**

(c) (i) Name and outline three processes by which waves erode coastlines.

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**(3)**

(ii) Explain how rates of marine erosion may be influenced by geological factors.

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**(4)**

**(Total 20 marks)**

**Q5**

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

6. (a) Study Figure 6 which is a model of the influence of wave energy on coastlines.

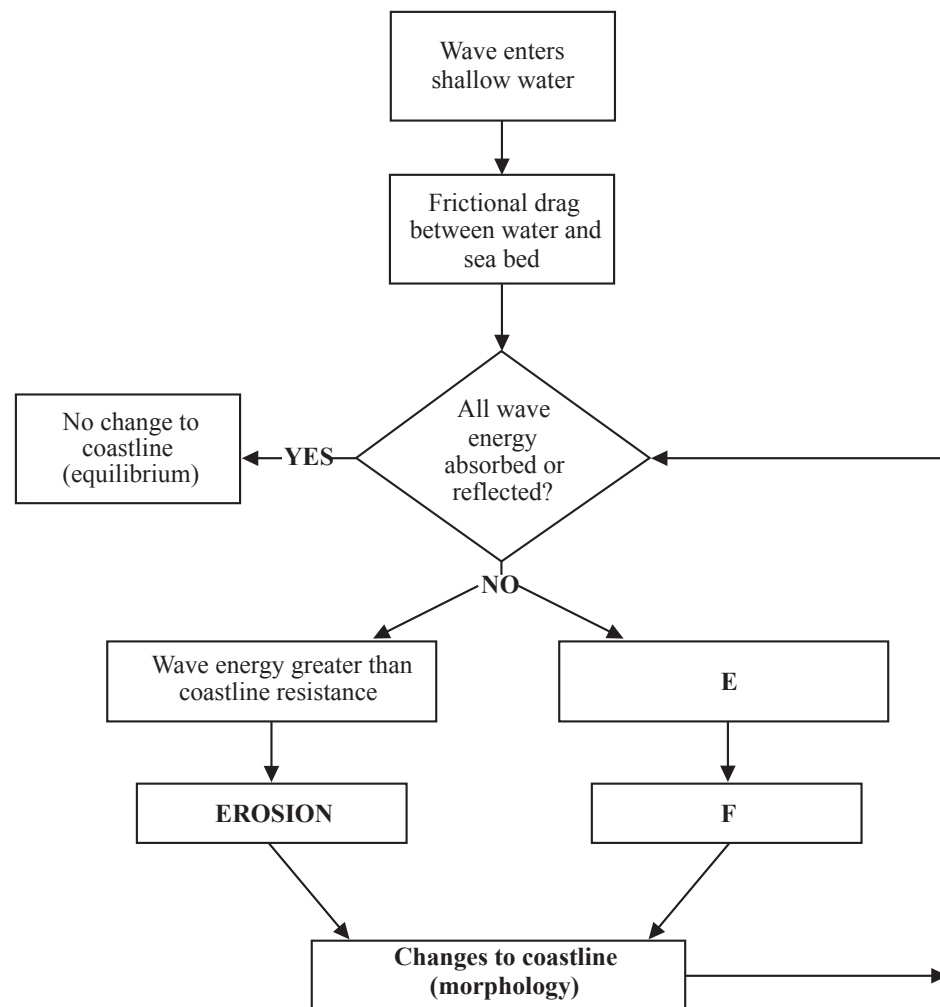


Figure 6

(i) Suggest entries for boxes E and F.

1. E .....
  2. F .....
- (2)

(ii) Describe how waves change when entering shallow water.

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(2)



(iii) Explain the influence of two factors that can affect coastline resistance.

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(4)

(b) Describe the typical characteristics of **constructive** waves.

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(4)

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

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(ii) With reference to a located example, describe how and explain why coastal ecosystems are modified by different types of human activity.

Located example .....

You may use a diagram to help your answer.

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Q6

(6)

(Total 20 marks)

**TOTAL FOR SECTION C: 20 MARKS**

**TOTAL FOR PAPER: 60 MARKS**

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