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School code

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School name

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Given name/s

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Attach your
barcode ID label here

Book

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of

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books used

External assessment 2024

Question and response book

Earth & Environmental Science

Paper 2

Time allowed

- Perusal time — 10 minutes
- Working time — 90 minutes

General instructions

- Answer all questions in this question and response book.
- QCAA-approved calculator permitted.
- Planning paper will not be marked.

Section 1 (37 marks)

- 5 short response questions

Section 2 (18 marks)

- 1 extended response question



DO NOT WRITE ON THIS PAGE
THIS PAGE WILL NOT BE MARKED

Section 1

Instructions

- Write using black or blue pen.
 - If you need more space for a response, use the additional pages at the back of this book.
 - On the additional pages, write the question number you are responding to.
 - Cancel any incorrect response by ruling a single diagonal line through your work.
 - Write the page number of your alternative/additional response, i.e. See page ...
 - If you do not do this, your original response will be marked.
 - This section has five questions and is worth 37 marks.
-

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QUESTION 1 (5 marks)

Refer to Stimulus 1 in the stimulus book.

- a) Compare the recovery of water quality inside and downstream of the erosion gully. *[3 marks]*

Similarity: _____

Difference: _____

Significance: _____

- b) Identify a solution to the problem of the waterway becoming blocked by a build-up of sediment. Explain how the solution would reduce sedimentation. *[2 marks]*

Do not write outside this box.

QUESTION 2 (7 marks)

Refer to Stimulus 2 in the stimulus book.

- a) Identify the effect on temperature if carbon dioxide (CO₂) concentration increased to 660 ppm.

[1 mark]

- b) Determine the species most at risk of extinction from an increase in temperature. Justify your response.

[2 marks]

- c) Make two predictions about the effect of RCP 8.5 on species D. Justify your predictions.

[4 marks]

Do not write outside this box.

QUESTION 3 (8 marks)

Refer to Stimulus 3 in the stimulus book.

- a) Describe the change in rainforest distribution shown in figure 1. *[1 mark]*

- b) Explain how deforestation in the Amazon rainforest contributes to global climate change. *[3 marks]*

Do not write outside this box.

c) Predict the impact on the Amazon rainforest’s ability to remove carbon dioxide (CO_2) from the atmosphere if deforestation continues. Justify your response with evidence from figures 1, 2 and 3.

[4 marks]

Do not write outside this box.

QUESTION 4 (11 marks)

Refer to Stimulus 4 in the stimulus book.

- a) Identify a suitable renewable energy source for City X. Justify your response. *[2 marks]*

- b) Explain three factors to be considered when selecting the energy source in Question 4a) for City X. Describe an impact of each factor on the viability of the energy source. *[9 marks]*

Factor 1: _____

Do not write outside this box.

Factor 2: _____

Factor 3: _____

Do not write outside this box.

QUESTION 5 (6 marks)

Refer to Stimulus 5 in the stimulus book.

- a) Describe the geological process that is occurring in the East African Rift region. *[2 marks]*

- b) Predict the hazardous Earth events likely to occur because of this geological process.
Explain your predictions. *[4 marks]*

Do not write outside this box.

Section 2

Instructions

- This section has one question and is worth 18 marks.
 - Respond in 300–350 words.
-

QUESTION 6 (18 marks)

Refer to Stimulus 6 in the stimulus book.

- a) Identify four conditions necessary for tropical cyclone Taylor to form and reach the coastline. *[4 marks]*

- b) Explain the factors that would have been considered when choosing the name 'Taylor'. *[4 marks]*

Do not write outside this box.

c) Identify which location in figure 2 (A, B, C or D) is most at risk of damage from a storm surge. Justify your response.

[4 marks]

Do not write outside this box.

d) Predict three impacts on the built and natural environments if tropical cyclone Taylor crossed the coast at the section of coastline shown in figure 2. Justify your response for each impact.

[6 marks]

Impact 1: _____

Impact 2: _____

Impact 3: _____

END OF PAPER

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ADDITIONAL PAGE FOR STUDENT RESPONSES

Write the question number you are responding to.

Do not write outside this box.



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