I			
LUI		School code	
School name			
Given name/s			Attach your
Family name		bard	code ID label here
External asse	essment 2021	Book	of books used
		Question a	nd response book

Earth & Environmental Science Paper 1

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 (15 marks)

• 15 multiple choice questions

Section 2 (45 marks)

• 8 short response questions



Section 1

Instructions

- Choose the best answer for Questions 1–15.
- This section has 15 questions and is worth 15 marks.
- Use a 2B pencil to fill in the A, B, C or D answer bubble completely.
- If you change your mind or make a mistake, use an eraser to remove your response and fill in the new answer bubble completely.

	А	В	С	D
Example:		\bigcirc	\bigcirc	\bigcirc

	А	В	С	D
1.	0	\bigcirc	\bigcirc	\bigcirc
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Section 2

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 eight questions and is worth 45 marks.

DO NOT WRITE ON THIS PAGE

THIS PAGE WILL NOT BE MARKED

a)	Explain two characteristics of a tropical cyclone that are observable using meteorological data.	[4 marks
b)	Determine which of the national parks in Stimulus 1 was the location of Dataset 1 in Stimulus 3. Provide evidence from Stimulus 1, 2 and 3 to support your response.	[4 mark
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;)	Predict which species is likely to quickly return to pre-cyclone numbers. Justify your response by contrasting two species, using data from Stimulus 3.	[3 mar

Do not write outside thi

QUESTION 17 (5 marks)

a)	Identify which years on the Southern Oscillation Index (SOI) graph in Stimulus 4 in the stimulus book represent the climatic conditions at X from Stimulus 5 in the stimulus book. Justify your response using evidence from the graph.	[2 ~!]
	stimulus book. Justify your response using evidence from the graph.	[3 marks]
b)	Identify which years in Stimulus 4 were likely to have the largest recharge of natural river systems in the location marked by X in Stimulus 5. Explain your reasoning.	[2 marks]

QUESTION 18 (3 marks)

During periods in the geological timeline, marine shells containing high levels of ¹⁸O isotope became fossilised. Use Stimulus 6 in the stimulus book to draw a conclusion about the average annual air temperature when fossilisation occurred. Provide two pieces of evidence to justify your conclusion.

QUESTION 19 (4 marks)

Describe two geochemical techniques used in mineral exploration.

QUESTION 20 (6 marks)

Identify two possible environmental risks that could be noted in an environmental impact assessment (EIA) for a new gold mine. Propose a strategy to mitigate each risk and explain the principle behind each strategy.

Risk:		
Stratogy		
Strategy:		
Principle behind strategy:	 	
Risk:		
Strategy:		
Principle behind strategy:		
L		

QUESTION 21 (3 marks)

Use Stimulus 7 in the stimulus book to determine the depth and thickness of the coal seam/s. Justify your response using evidence from the stimulus.

QUESTION 22 (7 marks)

Explain how clearing a mangrove ecosystem would affect the net contribution of greenhouse gases for the area being cleared. In your response, identify gas exchanges in plants and soil substrates.

QUESTION 23 (6 marks)

A new city is being built in an area prone to earthquakes and tsunamis. Consider potential Earth hazards at this location and identify three mitigation strategies. Provide an explanation to support each strategy.

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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ADDITIONAL PAGE FOR STUDENT RESPONSES Write the question number you are responding to.

ADDITIONAL PAGE FOR STUDENT RESPONSES

Write the question number you are responding to.

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