KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

GEOGRAPHY

COMMON TEST

MARCH 2022

MARKS: 60

TIME: 1 hour

This question paper consists of 7 pages.

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INSTRUCTIONS

1. The paper consists of **TWO** QUESTIONS:

   QUESTION 1: CLIMATE AND WEATHER

   QUESTION 2: GEOMORPHOLOGY

2. Write neatly and legibly.

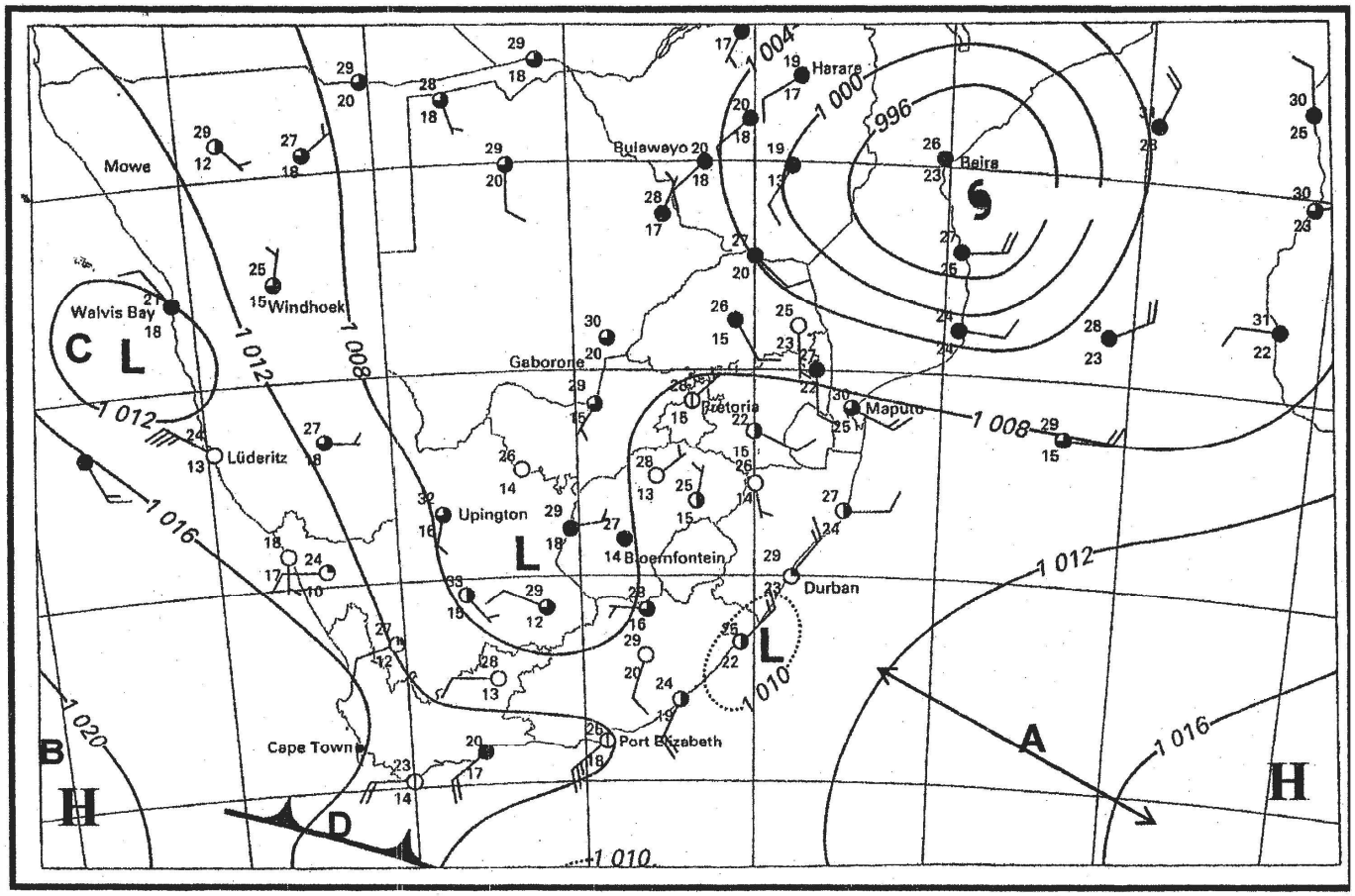
3. Number your questions according to the question paper.

4. Answer **ALL** questions.

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QUESTION 1: CLIMATE AND WEATHER

1.1 Refer to the South African synoptic weather map. (The letters **A, B, C** and **D** have been printed on the synoptic weather map)



1.1.1 Give ONE piece of evidence from the synoptic weather map that indicates that the map represents a summer situation. (1 x 1) (1)

1.1.2 Describe the pressure gradient at **A**. (1 x 1) (1)

1.1.3 Identify the pressure cells **B** and **C** respectively. (2 x 1) (2)

1.1.4 Name the front labelled **D**. (1 x 1) (1)

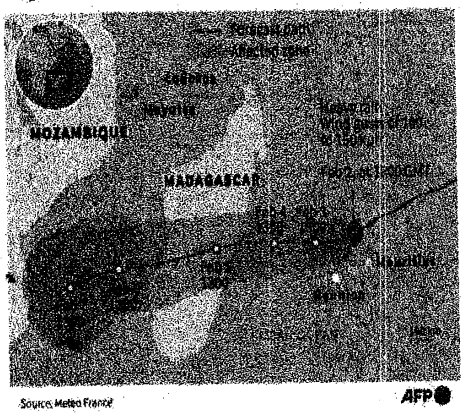
1.1.5 State the wind speed at Durban. (1 x 1) (1)

[6]

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1.2 Refer to Tropical cyclone Batsirai.

Cyclone Batsirai





Intense Tropical Cyclone Batsirai was a deadly tropical cyclone which heavily impacted Madagascar in February 2022.

Tropical Cyclone Batsirai swept over the Indian Ocean and into central and southern Madagascar on February 5–6, 2022, bringing torrential rain, flooding, and high winds of about 230 km per hour, bringing heavy impacts and majorly disrupting power and communication throughout the affected areas. Batsirai originated from a tropical disturbance that was first noted on 24 January 2022. It fluctuated in intensity and became a moderate tropical storm on 27 January 2022, after which it unexpectedly rapidly intensified into an intense tropical cyclone. It then weakened and struggled to intensify through the coming days due to present wind shear and dry air. Afterward, it entered much more favorable conditions, rapidly intensified yet again to a high-end Category 4 cyclone on the Saffir–Simpson scale while moving towards Madagascar 5 February.

After the storm passed, thousands of people evacuated to temporary shelters. Batsirai has left at least 121 people dead, 112,000 displaced, and 124,000 homes affected.

en.wikipedia.org/wiki/Cyclone_Batsirai

1.2.1 What do you understand by the term *category 4 tropical cyclone*? (1 x 1) (1)

1.2.2 Explain ONE possible reason for the development of tropical cyclone Batsirai on 24 January. (1 x 2) (2)

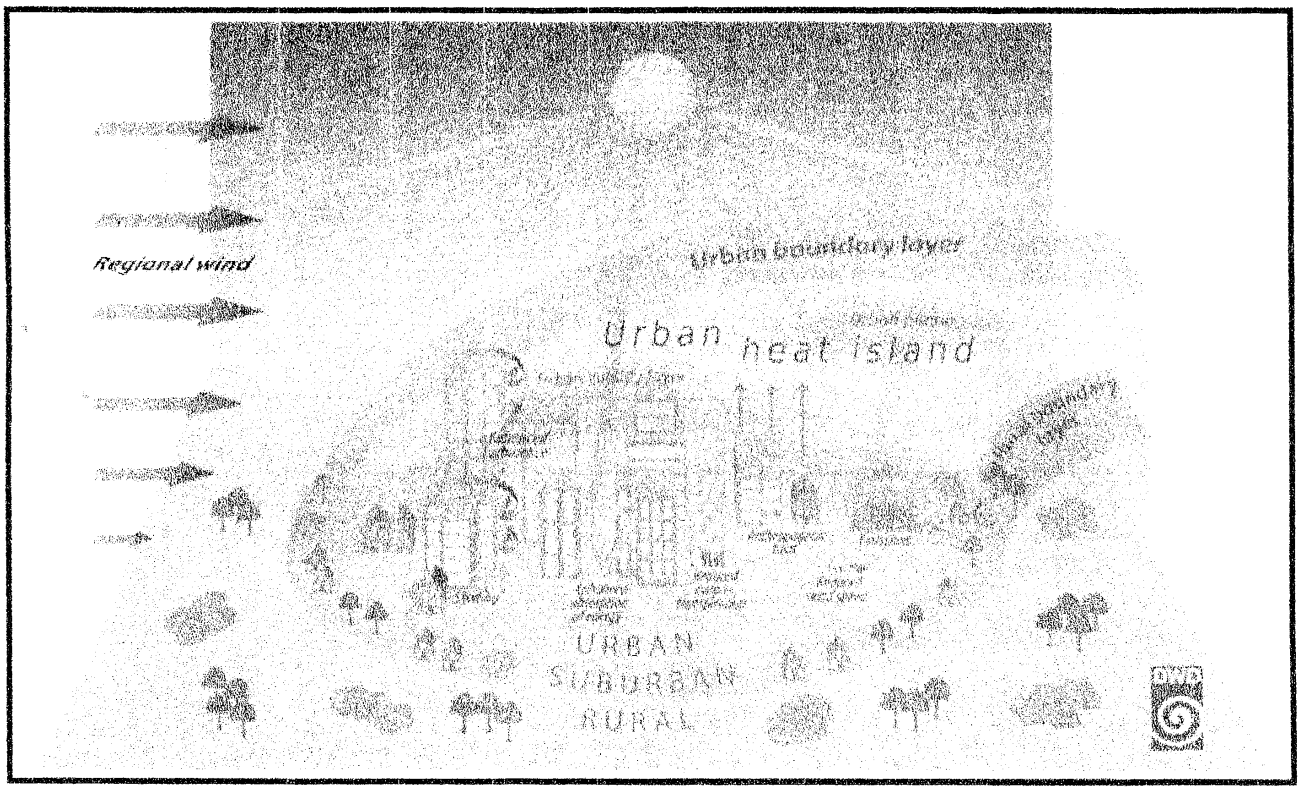
1.2.3 Explain why cyclone Batsirai fluctuated in intensity before moving over Madagascar. (1 x 2) (2)

1.2.4 Suggest how remote sensing can assist in tracking the movement of tropical cyclones. (1 x 2) (2)

1.2.5 Write a paragraph of approximately EIGHT lines outlining the precautionary and management strategies that could be put in place to manage the effects of future tropical cyclone activity. (4 x 2) (8)

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1.3 Refer to the heat island and pollution dome over an urban settlement.



1.3.1 Explain what is meant by the term heat island. (1 x 2) (2)

1.3.2 Which part of the city is experiencing the highest temperature? (1 x 1) (1)

1.3.3 Explain how building material influences the high temperatures in the city. (1 x 2) (2)

1.3.4 State the environmental problem resulting from a pollution dome that is situated closer to the earth's surface. (1 x 1) (1)

1.3.5 During night-time the pollution dome is much lower than during day-time. Provide ONE reason for this occurence. (1 x 1) (1)

1.3.6 Suggest ONE way in which we can reduce the environmental problem stated in QUESTION 1.3.4. (1 x 2) (2)

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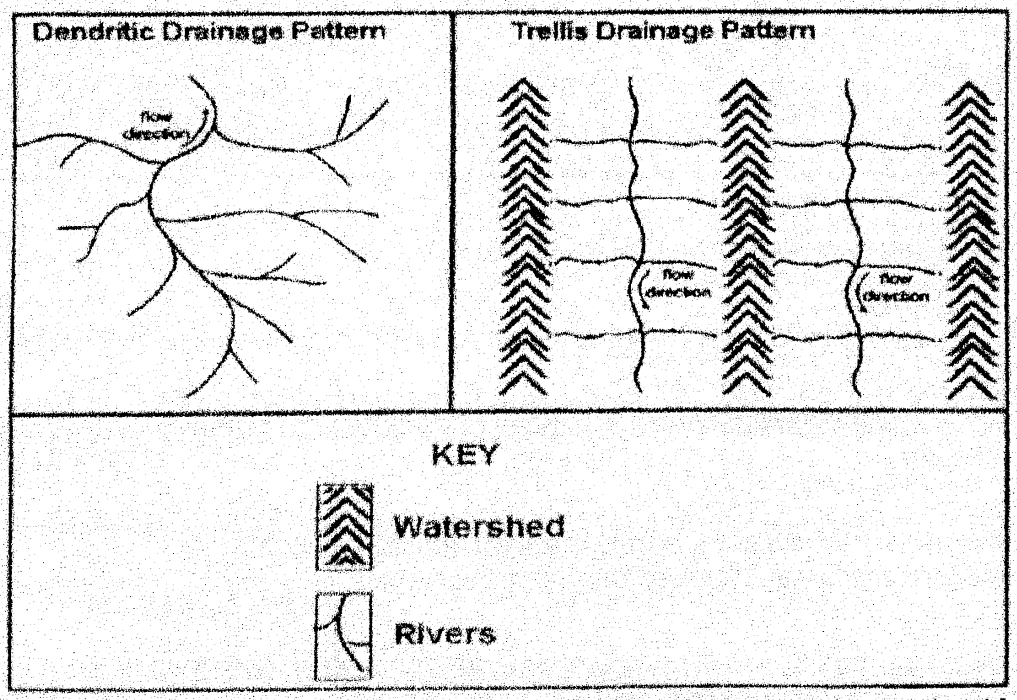
QUESTION 2: GEOMORPHOLOGY

2.1 Choose a term from COLUMN B that matches the geomorphological description in COLUMN A. Write only the letter (A – G) next to the question number (2.1.1 – 2.1.6) in the ANSWER BOOK, for example 2.1.7 H.

COLUMN A	COLUMN B
2.1.1 High ground separating one drainage basin from another.	A. Watertable
2.1.2 Point where two or more streams join.	B. Watershed
2.1.3 Upper level of ground water.	C. Ground water
2.1.4 Area from where a river gets it source of water.	D. Surface run off
2.1.5 High ground separating streams in the same drainage basin.	E. Confluence
2.1.6 Water found within the earth's surface.	F. Interfluve
	G. Catchment area

(6 x 1) **(6)**

2.2 Refer to the drainage patterns.



[Source: Examiner's own sketch]

2.2.1 Define the concept drainage pattern. (1 x 2) (2)

2.2.2 Describe the trellis drainage pattern. (1 x 2) (2)

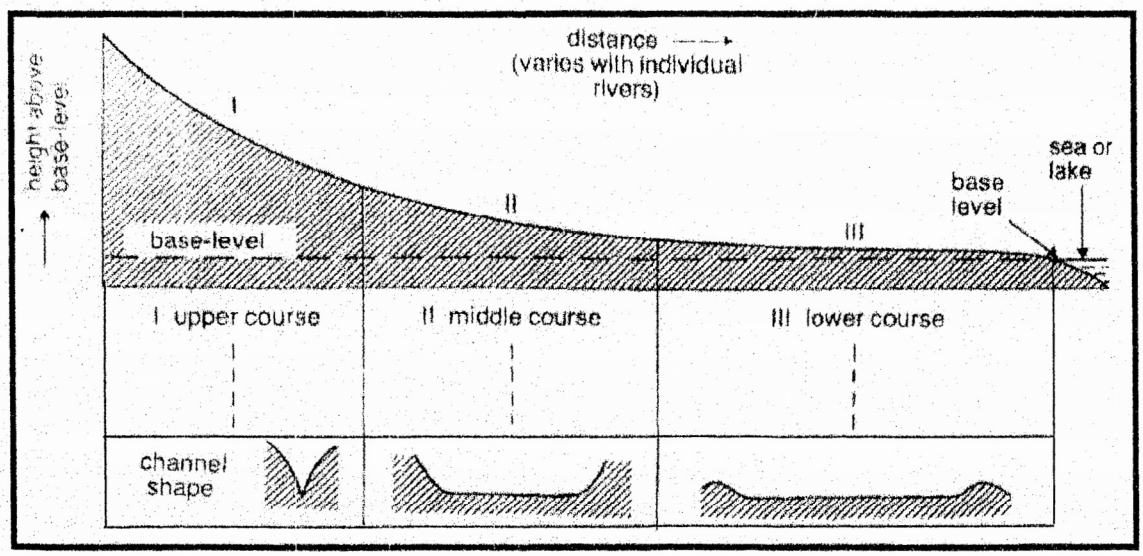
2.2.3 Explain ONE visible difference between the tributaries of a dendritic and a trellis drainage pattern. (2 x 2) (4)

2.2.4 Suggest why a dendritic drainage pattern is more suitable for farming. (2 x 2) (4)

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2.3 Refer to river valleys from source to mouth.



2.3.1 In which course is the mouth of the river. (1 x 1) (1)

2.3.2 State the lowest level to which a river can erode. (1 x 1) (1)

2.3.3 Identify TWO elements of the cross-profile that changed from the upper to the lower course. (2 x 1) (2)

2.3.4 Differentiate between the fluvial processes that shaped the cross-profile of the upper course and lower course of the river. (2 x 2) (4)

2.3.5 Suggest why the shape of the cross-profile in the upper course of the river will make it the most suitable place to build a dam. (2 x 2) (4)

[12]

TOTAL: 30

GRAND TOTAL: 60

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