LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

# NATIONAL SENIOR CERTIFICATE

## GRADE 12

GEOGRAPHY

CONTROLLED TEST 1

17 MARCH 2026

**MARKS: 60**

**TIME: 1½ hours**

**This question paper consists of 8 pages.**

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**INSTRUCTIONS AND INFORMATION**

1. This question paper consists of FIVE sub-questions.

   SUB-QUESTIONS 1.1, 1.3 and 1.4: CLIMATE AND WEATHER
   SUB-QUESTIONS 1.2 and 1.4: GEOMORPHOLOGY.

2. Answer ALL the questions.

3. All diagrams are included in the question paper.

4. Leave a line between the subsections of questions answered.

5. Number the answers correctly according to the numbering system used in this question paper.

6. Draw fully labelled diagrams when instructed to do so.

7. Answer in FULL SENTENCES, except when you have to state, name, identify or list.

8. Units of measurement MUST be indicated in your final answer where suitable, e.g. 1 020 hPa, $14^0$ C and 45 m.

9. Write neatly and legibly.

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1.1 Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A–D) next to the question numbers (1.1.1 to 1.1.7) in the ANSWER BOOK, e.g. 1.1.8 D.

1.1.1 Mid-latitude cyclones occur between … north and south of the equator.

A 5° and 25°
B 30° and 60°
C 0° and 5°
D 60° and 90°

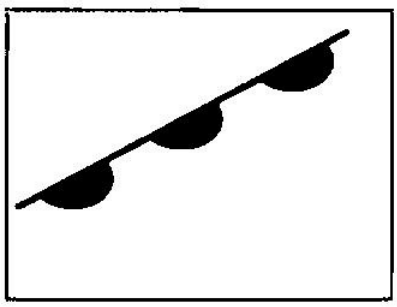
1.1.2 The wind belt that drives the mid-latitude cyclones is referred to as the…

A easterlies.
B polar easterlies.
C trade winds.
D westerlies.

1.1.3 Why does air in a mid-latitude cyclone rotate counterclockwise in the Northern Hemisphere …

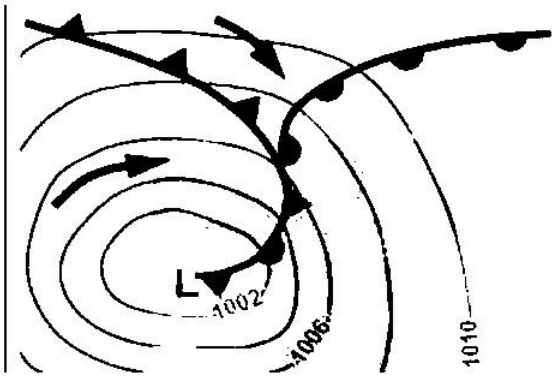
A Air moves directly toward the low-pressure center without deflection.
B The Coriolis force deflects moving air to the right
C Friction is stronger than the Coriolis force at high altitudes
D The pressure gradient force causes clockwise rotation.

1.1.4 The front below is a … front.



A Cold
B Occluded
C Warm
D Stationary

1.1.5 Mid-latitude cyclone below is in the … stage.



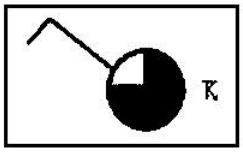

[Source: https://www.google.com/search?q=mid-latitude]

A Initial
B Wave
C Mature
D Occluded

1.1.6 The weather conditions experienced behind a cold front are a/an …

A increase in pressure and decrease in temperature.
B decrease in pressure and decrease in temperature.
C increase in pressure and increase in temperature.
D decrease in pressure and increase in temperature.

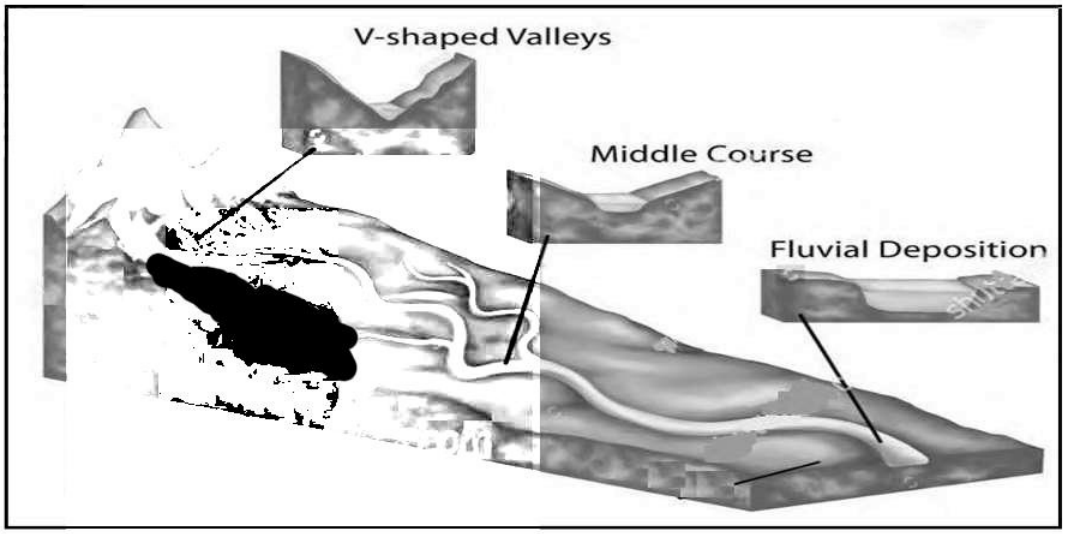
1.1.7 The wind direction represented by the station model below is …



A North-west
B South-west
C North-east
D South-west

**(7x1) (7)**

1.2 Refer to the sketch below based on river profiles. Complete the statements in COLUMN A with the options in COLUMN B. Write only **Y** or **Z** next to the question numbers (1.2.1 to 1.2.8) in the ANSWER BOOK, for example 1.2.9 Y.

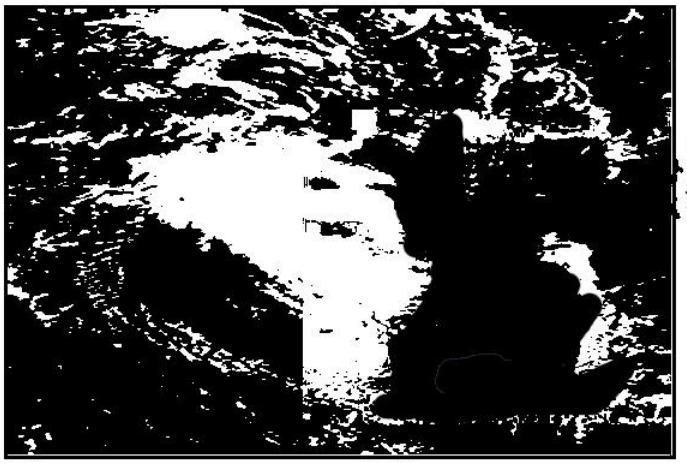


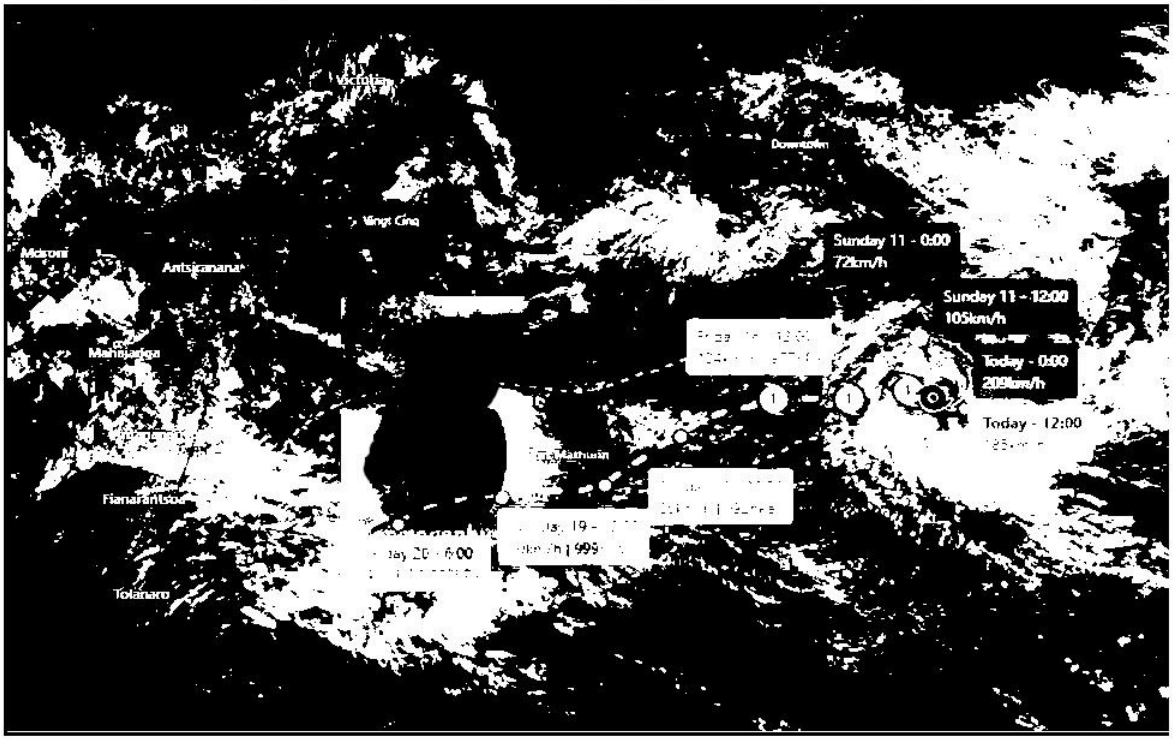

[Source:shutterstock.com]

| | COLUMN A | | COLUMN B |
|---|---|---|---|
| 1.2.1 | Cross profile of a river shows … | **Y:**<br>**Z:** | A side view of the river<br>A view of the river from one river bank to the other bank |
| 1.2.2 | The dominant fluvial process in the middle course is … | **Y:**<br>**Z:** | Lateral erosion<br>Vertical erosion |
| 1.2.3 | Fluvial landform that encourages farming. | **Y:**<br>**Z:** | Floodplain<br>Waterfall |
| 1.2.4 | Fluvial deposition encourages the formation of … | **Y:**<br>**Z:** | Deltas<br>Rapids |
| 1.2.5 | The volume of water in the upper course is … | **Y:**<br>**Z:** | High<br>Low |
| 1.2.6 | The source of a river can be found in the … | **Y:**<br>**Z:** | Upper course<br>Lower course |
| 1.2.7 | The area drained by a river and its tributaries is known as the … | **Y:**<br>**Z:** | River system<br>Drainage basin |
| 1.2.8 | V-shaped valleys in the upper course is caused by … | **Y:**<br>**Z:** | Vertical erosion<br>Lateral erosion |

**(8x1) (8)**

1.3 Refer to the extract on the development of Tropical Cyclone Dzudai.






Tropical cyclone Dzudai developed over the Indian Ocean on 10 January 2026. The system rapidly intensified, and by January 12 it had strengthened into a Category 4–equivalent tropical cyclone, producing sustained winds of approximately 130 mph (209 km/h). After reaching peak intensity, Dzudai weakened quickly, dropping to a Category 1–equivalent cyclone where it remained for about 24 hours. On January 15, the storm reorganized, redeveloped a well-defined eye, and regained strength, with maximum sustained winds of around 110 mph (177 km/h).

As Dzudai continued traveling southwestward over the Indian Ocean, environmental conditions became less favorable. The cyclone steadily weakened, and by January 17 its winds decreased to approximately 65 mph (105 km/h). Dzudai maintained this intensity for several days before finally dissipating on January 21, 2026.

(Source:https://satlib.cira.colostate.edu/event/tropical-cyclone-dudzai/)

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1.3.1 How many tropical cyclones occurred before tropical cyclone Dzudai? (1x1) (1)

1.3.2. With reference to the satellite image showing the eye, in which hemisphere did the tropical cyclone Dzudai developed? (1x1) (1)

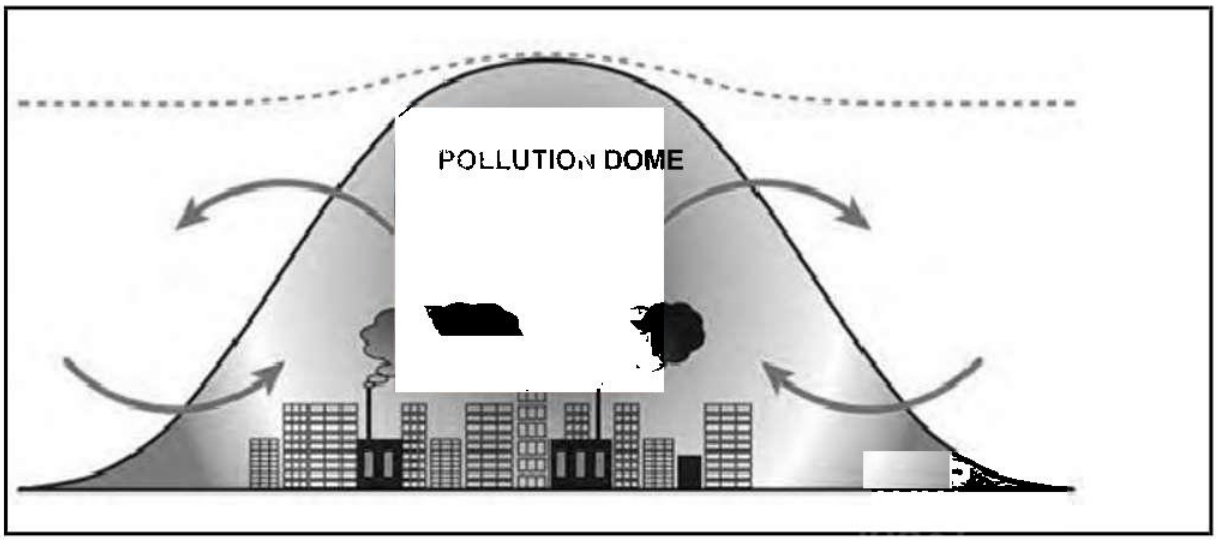
1.3.3. Give evidence from the satellite image to support your answer in QUESTION 1.3.2. (1x 1)(1)

1.3.4. Discuss possible factors that caused tropical cyclone Dzudai to weaken and dissipate after landfall. (2 x 2) (4)

1.3.5. In a paragraph of approximately EIGHT lines, discuss the possible negative economic impact of tropical cyclone Dzudai to Mauritius (especially at Port Louis and Port Mathurin) (4 x 2) (8)

**[15]**

1.4 Refer to diagram below showing a pollution dome.




[Source: shutterstock.com]

1.4.1 Define the concept *pollution dome*. (1 x 2) (2)

1.4.2 At night, the pollution dome is lower in elevation (height) than during the day. Explain why this occurs. (2 x 2) (4)

1.4.3 (Frost / smog) is the environmental problem that results from a pollution dome, which develops close to the surface in a city. (1 x 1) (1)

1.4.4 Explain how the environmental problem mentioned in QUESTION 1.4.3 as the answer develops. (1 x 2) (2)

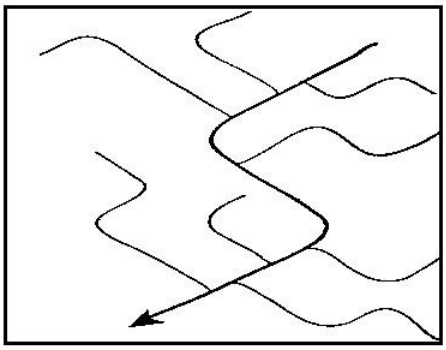
1.4.5 Air pollution reduces the amount of a city's clean air at night. Explain this statement. (1 x 2) (2)

1.4.6 Discuss TWO sustainable strategies that can be implemented in cities to minimize the effects of industries on the pollution dome. (2 x 2) (4)

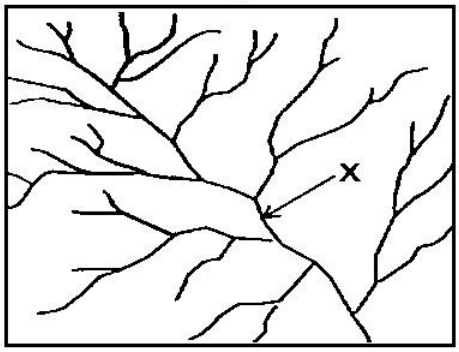
**[15]**

1.5. Refer to the drainage patterns illustrated in sketches **A** and **B** below.

**A**



**B**




[Adapted from https://www.google.com/search?+drainage+pattern&tbm]

1.5.1 Identify drainage patterns in sketches **A** and **B**. (2 x 1) (2)

1.5.2 State the underlying rock structure and rock type on which the drainage pattern in **A** developed. (1 x 2) (2)

1.5.3 Explain how the underlying rock structure influenced the drainage pattern in **A**. (1 x 2) (2)

1.5.4 The drainage density in **B** is (high/low). (1 x 1) (1)

1.5.5 Determine the stream order at **X** in **B**. (1 x 2) (2)

1.5.6 Explain the relationship between stream order and drainage density in **B**. (1 x 2) (2)

1.5.7 Explain how the slope (gradient) and permeability of underlying rock influence the drainage density in **B**. (2 x 2) (4)

**[15]**

**GRAND TOTAL: 60**

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