



LIMPOPO

PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

SEKHUKHUNE SOUTH DISTRICT



GRADE 12

GEOGRAPHY
Tropical Cyclone
Topic Test No.2
31 January 2025

Marks : 60

DURATION : 1 Hour

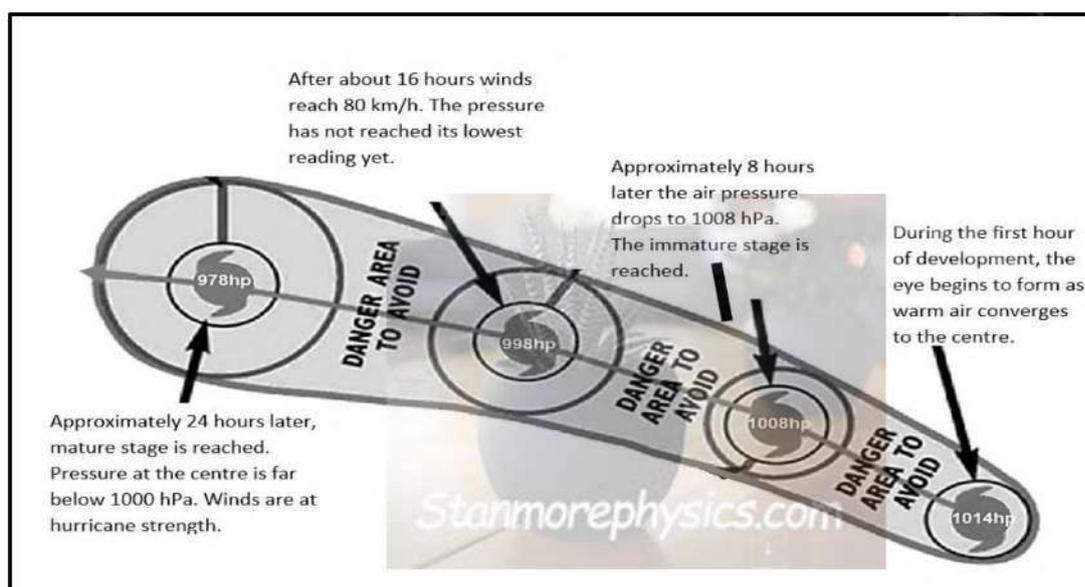
INSTRUCTION AND INFORMATION

- This question paper consists of FIVE questions.
- Answer all the FIVE questions.
- All diagrams are included in the question paper
- Number your answers correctly according to the numbering system used in this question paper.
- Answer in FULL SENTENCES, except when you have to state, name, identify or list.
- Write neatly and legibly

1.1. With reference to tropical cyclones around the world, Match the term in COLUMN B with description in COLUMN A.

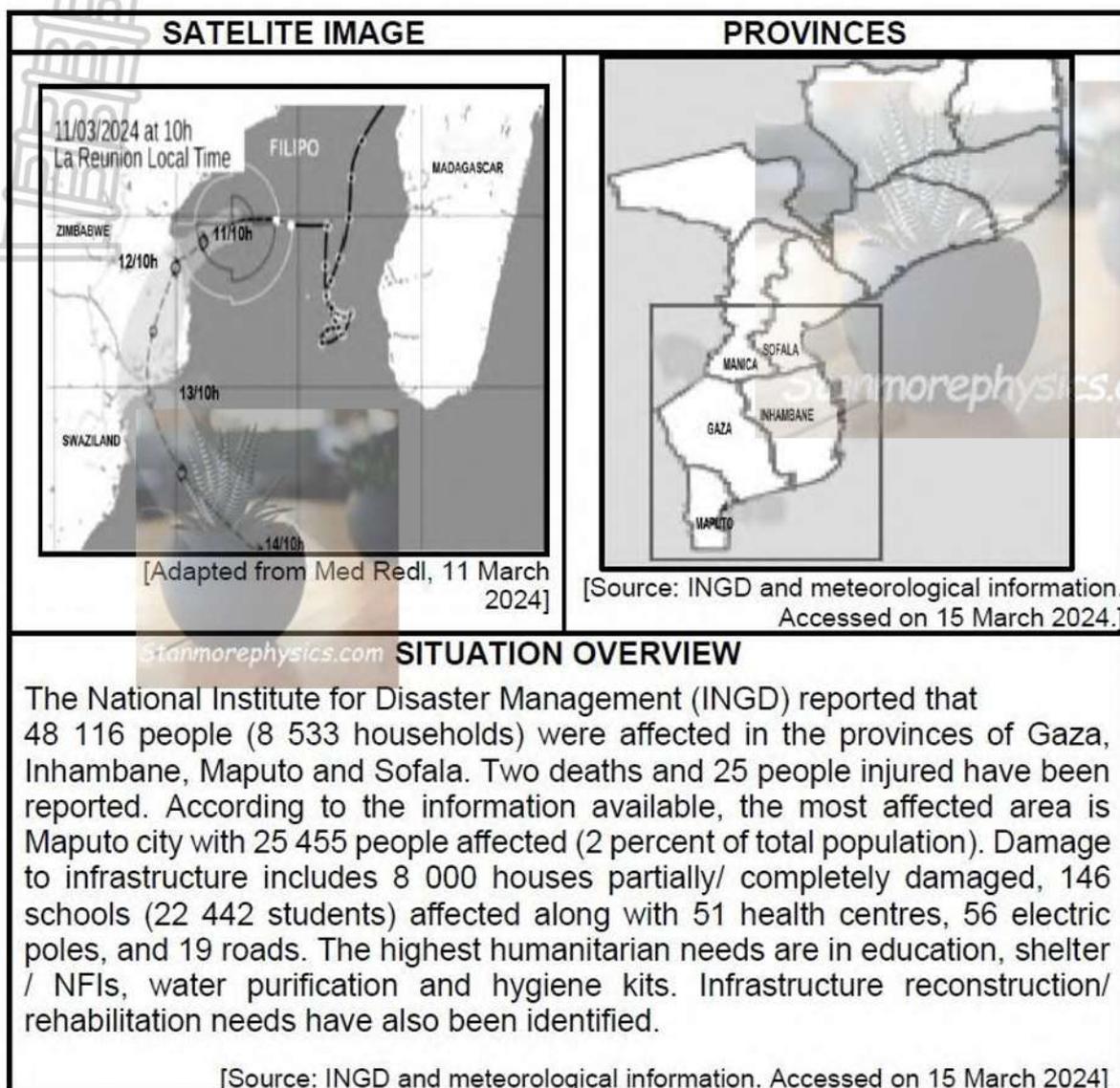
COLUMN A	COLUMN B
1.1.1. Provides energy that contributes to the formation of tropical cyclone.	A. Dissipating
1.1.2. Local name given to a tropical cyclone in south-east Asia.	B. Eye wall
1.1.3. Cooler air sinks and there is no rain in this section of the tropical cyclone.	C. Immature
1.1.4. The stage where cooler air flows into the tropical cyclone, increasing the pressure.	D. Formative
1.1.5. Pressure drops to below 1000 hPa and wind speeds increase to approximately 120km/h in this stage.	E. Latent heat
1.1.6. The stage characterised by a well developed forward left-handed quadrant.	F. Typhoon
1.1.7. The stage where pressure is above 1000 hPa and tropical cyclone starts to develop.	G. Eye
1.1.8. Created by the upward spiralling movement of air around the centre	H. Hurricane
	I. mature

1.2. Refer to the figure below on Tropical Cyclone Edouard. 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 number (1.2.1.-1.2.7) in the ANSWER BOOK, for example 1.2.8. A.



- 1.2.1. tropical cyclone Edouard was the.....cyclone of the season.
- A. 2nd
 - B. 5th
 - C. 6th
 - D. 9th
- 1.2.2. The movement of the air around the low pressure in the centre of the weather system is proof that this tropical cyclone occurred in the.....hemisphere.
- A. Southern
 - B. Northern
 - C. Western
 - D. Eastern
- 1.2.3. The centre of the weather system is known as the.....of the tropical cyclone.
- A. Cortex
 - B. Hurricane
 - C. Eye
 - D. Moisture front
- 1.2.4. The reason for the calm weather in the centre of the tropical cyclone is.....
- A. Subsiding air that warms adiabatically.
 - B. Subsiding air that cools adiabatically.
 - C. Ascending air that warms adiabatically.
 - D. Ascending air that cools adiabatically.
- 1.2.5. The path of the tropical cyclone is from.....
- A. West to east.
 - B. East to west.
 - C. North to south.
 - D. South to west.
- 1.2.6. The possible wind speed at approximately 24 hours is.....km/h.
- A. 10
 - B. 50
 - C. 100
 - D. 130
- 1.2.7. It took approximately.....hours for the tropical cyclone to reach the mature stage.
- A. 0
 - B. 2
 - C. 8
 - D. 24

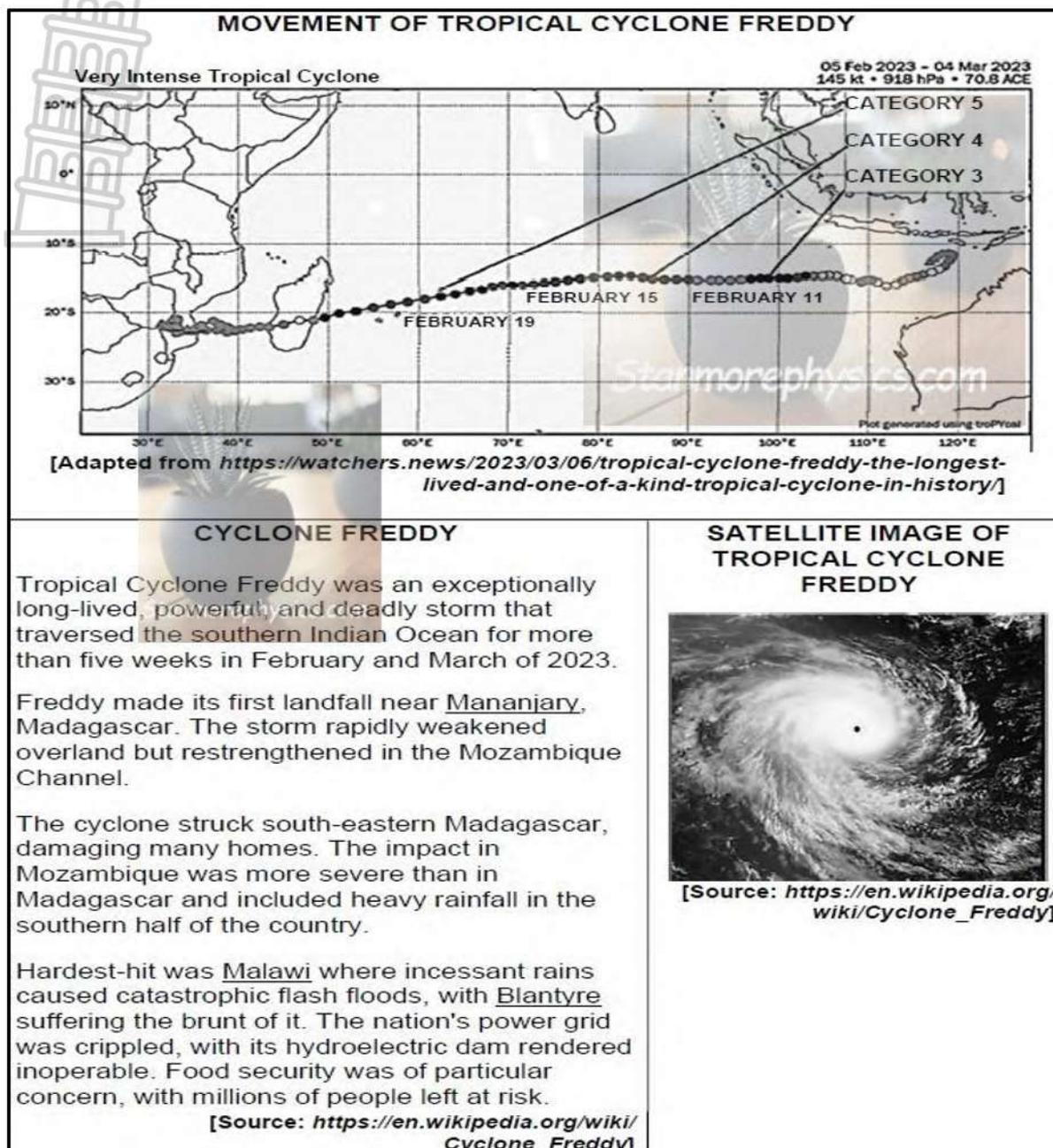
1.3. Refer to the infographic below on a Tropical cyclone Filipo.



- 1.3.1. When did the Tropical Cyclone make landfall? (1x2) (2)
- 1.3.2. Describe the path of Tropical Cyclone Filipo from the 11th to the 14th. (2x1) (2)
- 1.3.3. People and households were affected by the Tropical cyclone Filipo. Mention at least TWO provinces that were affected. (2x1) (2)
- 1.3.4. How many people were mostly affected in this region, according to the extract? (1x1) (1)
- 1.3.5. Identify TWO services that were most needed. (2x1) (2)
- 1.3.6. Extract TWO examples of infrastructure mentioned in the extract that have been affected by Tropical Cyclone Filipo. (2x1) (2)
- 1.3.7. Suggest measures that could be implemented by the government of Mozambique to reduce the impact of tropical cyclones. (2x2) (4)

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1.4. Refer to the infographic on Tropical cyclone Freddy.



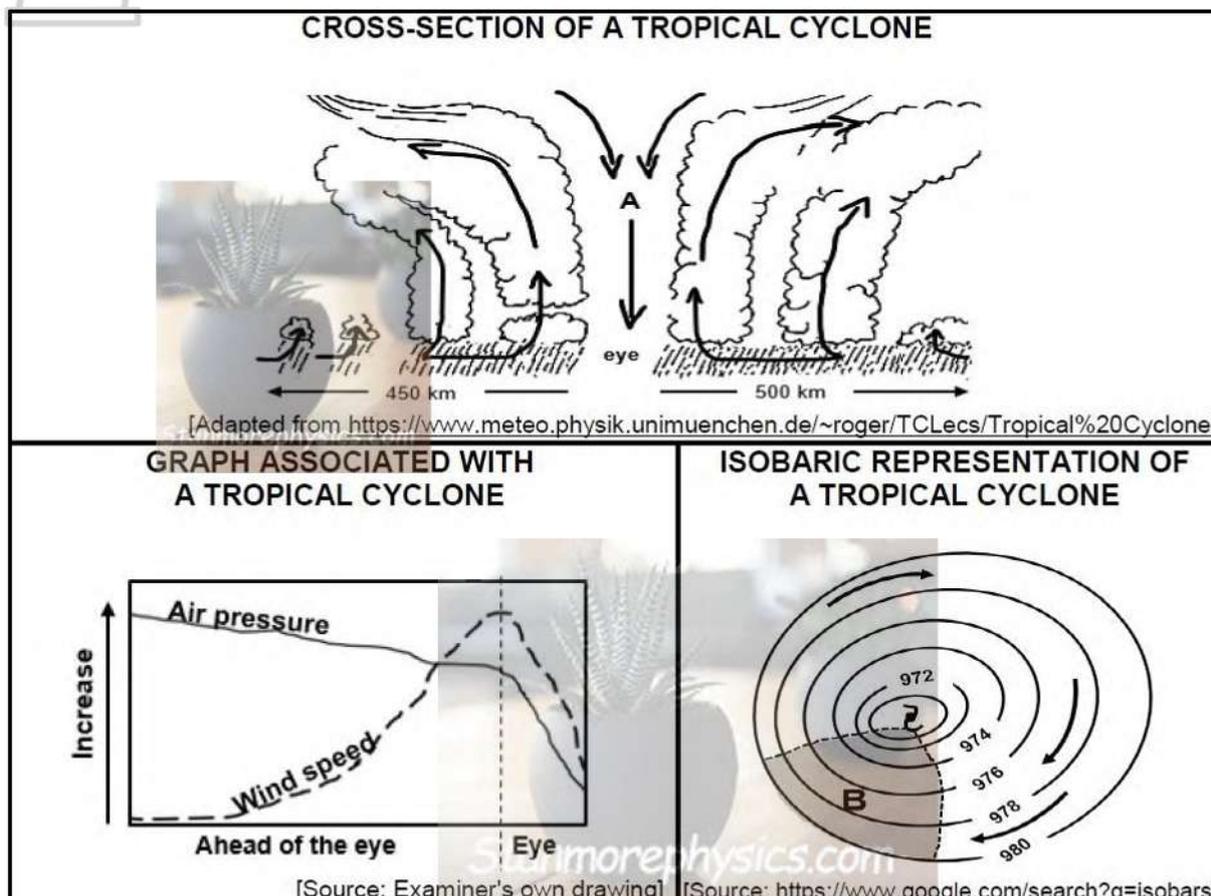
- 1.4.1. According to the infographic, what was the lifespan of Tropical cyclone Freddy? (1x1) (1)
- 1.4.2. Quote an example of infrastructural damage caused by tropical cyclone Freddy, as mentioned in the article. (1x1) (1)
- 1.4.3. Describe the rotation of winds as depicted (shown) in the satellite image. (1x1) (1)
- 1.4.4. Suggest ONE possible reasons why Tropical cyclone Freddy intensified from a category 3 to a category 5 cyclone between 11 February 2023 and 19 February 2023. (1x2) (2)

1.4.5. What could have caused the rapid weakening of Tropical cyclone Freddy when it made landfall near Mananjary? (1x2) (2)

1.4.6. In a paragraph of approximately Eight line, Suggest strategies that the local authorities in Mozambique could have implemented to prepare for the destruction caused by Tropical Cyclone Freddy. (4x2) (8)

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1.5. Refer to the infographic below on tropical cyclones.



1.5.1. What evidence indicates that the tropical cyclone developed in the southern Hemisphere? (1x1) (1)

1.5.2. Give TWO reasons from the infographic to indicate that the tropical cyclone is in its mature stage. (2x1) (2)

1.5.3. How will the descending air at A influence the cloud cover in the eye? (1x2) (2)

1.5.4. Give a reason for your answer to Question 1.5.3. (1x2) (2)

1.5.5. What is the relationship between the wind speed and air pressure as indicated on the graph?

(a) Ahead of the eye. (1x2) (2)

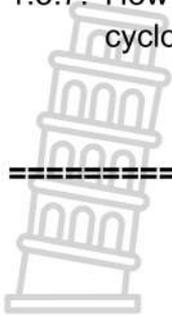
(b) Within the eye. (1x2) (2)

1.5.6. Why is area B on the sketch of the isobaric representation referred to as the leading left quadrant (dangerous semicircle)? (1x2) (2)

1.5.7. How does the leading left quadrant (dangerous semicircle) develop in tropical cyclones? (1x2) (2)

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=====60 marks=====



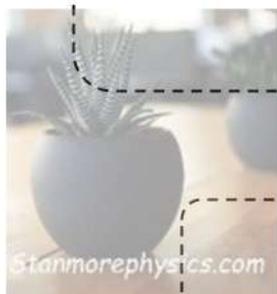


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Topic Test No.2

Marking Guideline

Marks

: 60

1.1. Match columns

- 1.1.1. E
- 1.1.2. F
- 1.1.3. G
- 1.1.4. A
- 1.1.5. C
- 1.1.6. I
- 1.1.7. D
- 1.1.8. B (7)

1.2. Tropical cyclone Edouard

- 1.2.1. B
- 1.2.2. B
- 1.2.3. C
- 1.2.4. A
- 1.2.5. B
- 1.2.6. D
- 1.2.7. D (7)



1.3. Tropical cyclone Filipo

- 1.3.1. 12 march 2024 / 12/10H (2)
- 1.3.2. On the 11th filipo move westwards (1)

On the 12th filipo moved southwards(1), then on the 13th south easterly (1)
(2x1) (2)

- 1.3.3. Gaza (1)

Mbabane (1)

Maputo (1)

Sofala (1) (ANY TWO)

- 1.3.4. 25 455 people (1)

- 1.3.5. Education (1)

Water (1)

- 1.3.6. Health centres (1)

Roads (1)

Electric poles (1)

- 1.3.7. Ensure that there is a disaster management plan (2)

Monitor the path of the cyclone and its development using remote sensors on satellite. (2)

Prepare evacuation plans (2)

Building strong shelters where people can gather before a storm arrives (2)

Upgrade technology (2)

Ensure infrastructure is of good quality (2)

1.4. Tropical cyclone Freddy

1.4.1. More than 5 weeks. (1)

1.4.2. "damaging many homes"

"power grid was crippled"

"hydroelectric dam rendered inoperable" (1) (ANY ONE)

1.4.3. Clockwise (1)

1.4.4. Warm ocean surface temperatures in the Indian ocean (more than 26.5 degrees) (2)

LP intensified because of warm ocean temperature. (2)

Increased evaporation (over the Indian ocean) (2)

Increase in latent heat. (2)

Sufficient distance away from the equator for Coriolis force to take effect. (2)

Limited friction on the water surface. (2) (ANY ONE)

1.4.5. Lack of moisture (source) (2)

Frictional drag with the land surface. (2)

Reduced latent heat (2) (ANY ONE)

1.4.6. Upgrading of their early warning systems/tracking/communication systems. (2)

Evacuation of inhabitants from coastal region (2)

Mobilise emergency personnel (2)

Prepare health facilities (2)

Stockpile food and drinking water (2)

Ensure a supply of medicines (2)

Prepare community shelters (2)

Tide breakers/sea walls to prevent flooding/damage of houses. (2)

Flood prevention methods (accept examples) (2)

Request assistance from neighbouring countries/international community (2)

Community awareness programmes to educate residents on impact of tropical cyclones. (2) (ANY FOUR)

1.5. Tropical cyclone cross-section

1.5.1. Clockwise movement of air

Position of the leading left quadrant

Wind direction shown by the symbol of the eye (ANY ONE) (1)

1.5.2. Pressure in the centre is significantly below 1000 hPa.

Well developed eye

The area covered by the tropical cyclone is large (450km-950km)

The leading left quadrant (dangerous semicircle) is visible.

Isobars are closely spaced/pressure gradient is very steep. (ANY TWO) (2x1)
(2)

1.5.3. There will be no cloud cover/clear skies. (2)

1.5.4. Descending air heats up resulting in no condensation

Adiabatic heating reduces moisture/becomes dry. (ANY ONE) (2)

1.5.5. (a) air pressure decrease and wind speed increases.(2)

(b) Both air pressure and wind speed decreases (2)

1.5.6. It experiences the most intense weather conditions (accept examples of severe weather conditions) (2)

1.5.7. When the forward movement combines with the rotation of the system. (2)