education

Department of Education
FREE STATE PROVINCE




# GRADE 12

# GEOGRAPHY




# JUNE EXAMINATION 2025

## MARKS: 150

## TIME: 3 HOURS

**This question paper consists of 14 pages.**

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**INSTRUCTIONS AND INFORMATION**

1. This question paper consists of THREE questions.
   QUESTION 1: CLIMATE AND WEATHER (60)
   QUESTION 2: GEOMORPHOLOGY (60)
   QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES (30)

2. Answer ALL the questions.

3. Answer the paragraph style questions as follows:

   Discuss ideas in detail.
   Write in the form of a paragraph.

4. ALL diagrams are included in the QUESTION PAPER.

5. Leave a line between subsections of questions answered.

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

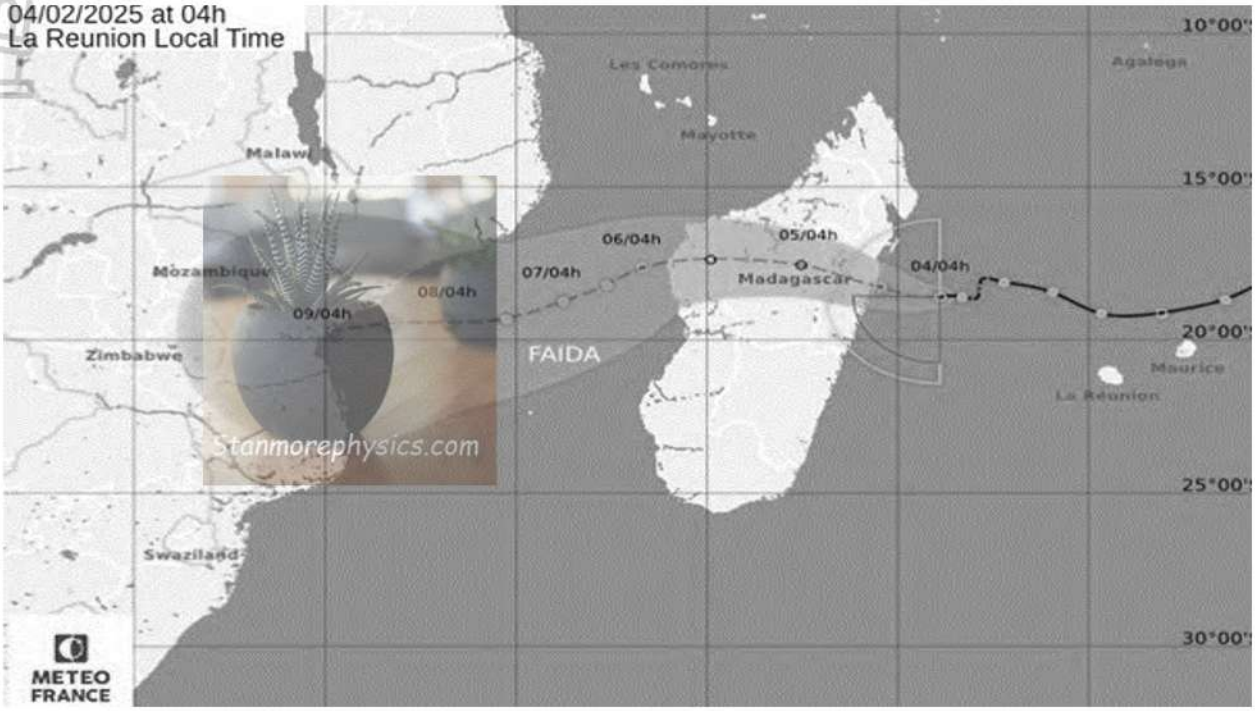
7. Where possible, illustrate your answers with labelled diagrams.

8. Write clearly and legibly.

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## QUESTION 1

:cyclone Faida. Complete the statements in COLUMN A with the options in COLUMN B. Write only **Y** or **Z** next to the question numbers (1.1.1 to 1.1.7) in the ANSWER BOOK, e.g. 1.1.8 Y.

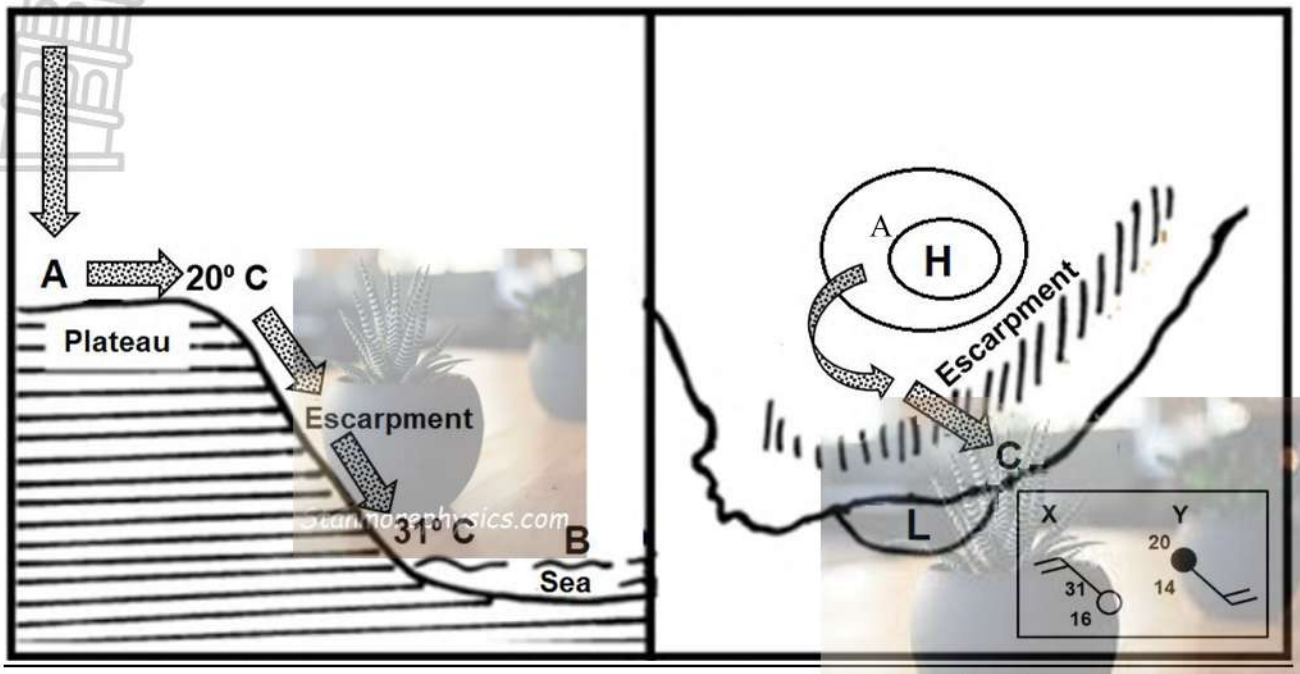



[Source: Meteo France]

| COLUMN A | COLUMN B |
|---|---|
| 1.1.1 The type of cyclone represented is a… | **Y** mid-latitude cyclone<br>**Z** tropical cyclone |
| 1.1.2 In which season does this cyclone occur? | **Y** Winter<br>**Z** Summer |
| 1.1.3 The prevailing winds that drive this cyclone are… | **Y** westerlies<br>**Z** tropical easterlies |
| 1.1.4 How many cyclones have been experienced before Faida in this region during this season. | **Y** 5<br>**Z** 6 |
| 1.1.5 This cyclone is in the … hemisphere. | **Y** southern<br>**Z** northern |
| 1.1.6 One of the conditions that may have led to the development of this cyclone is… | **Y** upper air convergence<br>**Z** upper air divergence |
| 1.1.7 On the 9th cyclone Faida reached the … stage. | **Y** mature<br>**Z** dissipating |

(7x1) (7)

1.2 Refer to the sketch below. Various options are given 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 – 1.2.8) in the ANSWER BOOK, for example 1.2.9 B.




[Adapted from https://fotisedu.com/]

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1.2.1 The pressure cell at **A** is…

A South Atlantic High.
B South Indian High.
C Kalahari High.
D Thermal High

1.2.2 The pressure cell at **A**…

A rotates clockwise.
B is more dominant in the interior during winter.
C results in unstable weather conditions in the interior
D moves in a northerly position during summer

1.2.3 The pressure cell at **B** is…

A Thermal Low.
B Coastal Low.
C Equatorial Low.
D Cut-off Low.

1.2.4 The season depicted in the sketch is…

A summer.
B autumn
C winter.
D spring.

1.2.5 … will occur at **C**.

A Berg winds
B Line-thunderstorms
C Floods
D Heavy rainfall

1.2.6 The temperature change from **A** to **B** is due to…

A temperature being warmer above the plateau.
B low-pressure cell that feeds warm moist air from the interior.
C temperature of air that decreases by 1˚C per 100 m as it ascends.
D temperature of air that increases by 1˚C per 100 m as it descends.

1.2.7 The air temperature at **C** is…

A. 31°C
B 16°C.
C 20°C.
D 14°C

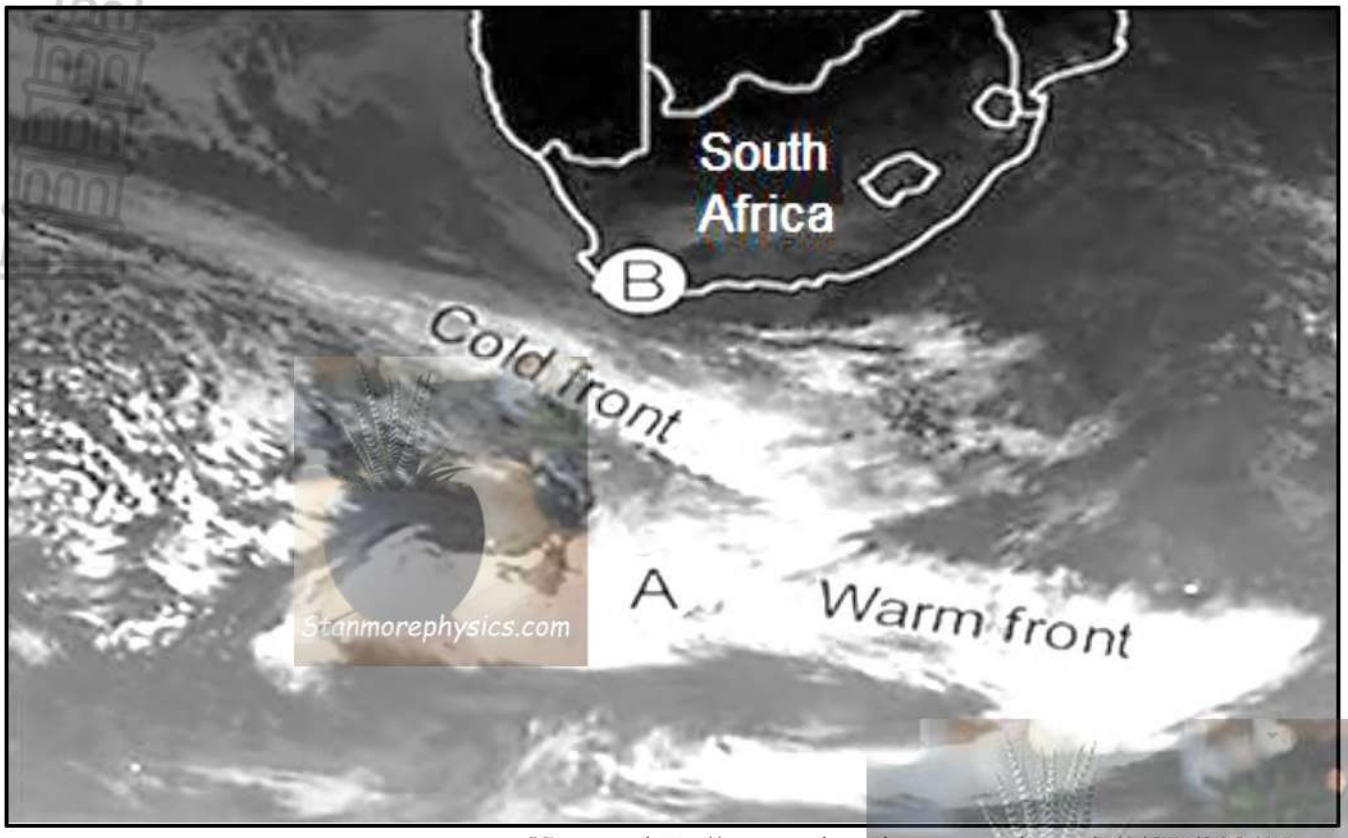
1.2.8 Refer to the weather station at **X**. The reason for the clear skies is…

A. moisture evaporating when air cools adiabatically
B the small difference between air temperature and dew point temperature therefore air is moist.
C relative humidity being high
D subsiding air creating stable conditions

(8x1) (8)

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1.3 Refer below to the satellite image of a Mid-latitude cyclone.




[Source: http://www.education.gov.za/Portals/0/CD/2024May-June%20papers/Geography%20P1%20May-June%202024%20Eng.pdf?ver=2024-11-20-124645-410]

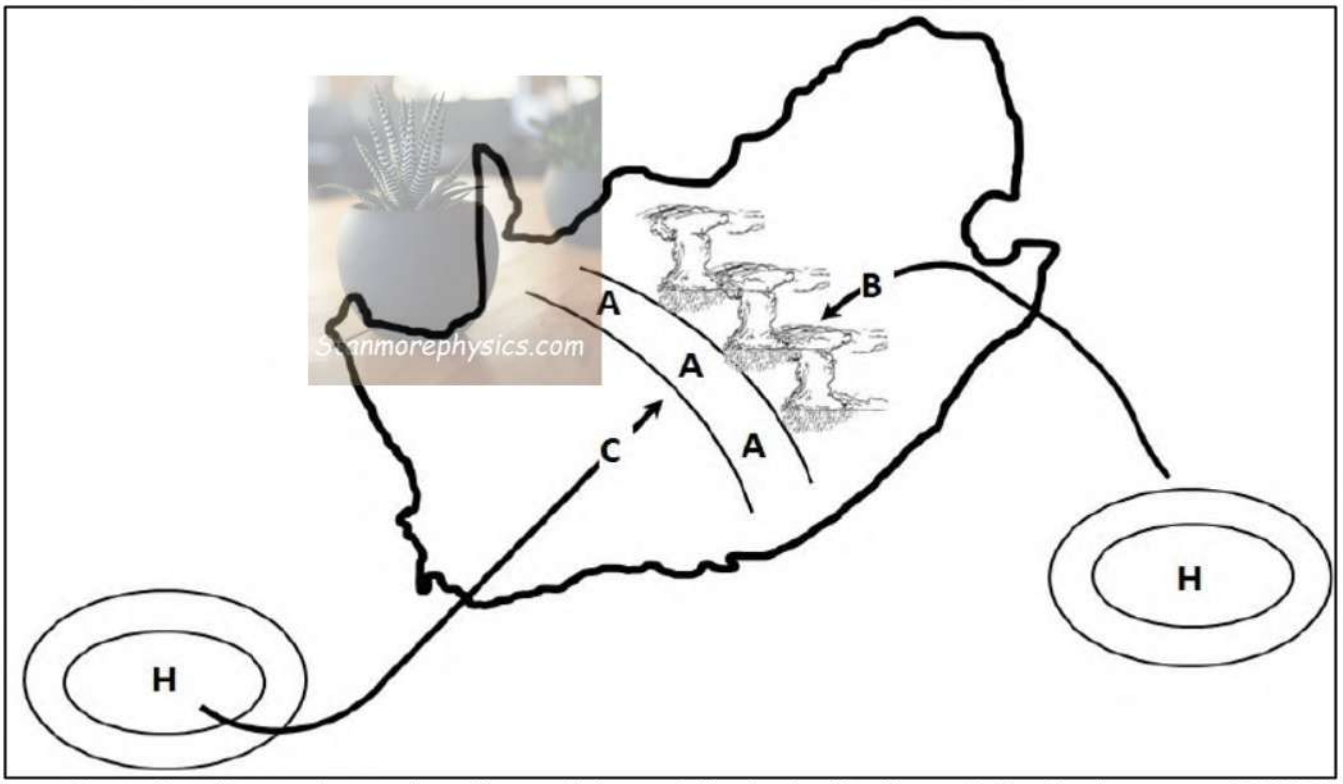
| | | | |
|---|---|---|---|
| 1.3.1 | The pressure at **A** is (low/high) pressure | (1x1) | (1) |
| 1.3.2 | Give evidence from the satellite image for your answer to QUESTION 1.3.1 | (1x2) | (2) |
| 1.3.3 | Draw a labelled cross-section of a cold front associated with this weather system. | (4x1) | (4) |
| 1.3.4 | In a paragraph of approximately EIGHT lines, explain how the approaching cold front changes the cloud cover and winds experienced at area **B**. | (4x2) | (8) |
| | | | [15] |

1.4 Refer to the source below based on line thunderstorms.

**LINE THUNDERSTORMS HIT PARTS SOUTH AFRICA**

Monday, 7 April 2025.

Eastern and north-eastern parts of the South Africa experienced line thunderstorms. These thunderstorms damaged crops, destroyed houses and damaged roads in these areas. The line thunderstorms are a huge threat to the farming activities.




[Source: https://www.studocu.com/en-za/document/holy-cross-high-school-maitland/geography/line-thunderstorms-test/117600185]

1.4.1 Identify the front at **A**. (1x1) (1)

1.4.2 What type of clouds forms on the eastern side of the front at **A**? (1x1) (1)

1.4.3 Name the TWO high pressure systems responsible for the advection of wind into the interior in summer. (2x1) (2)

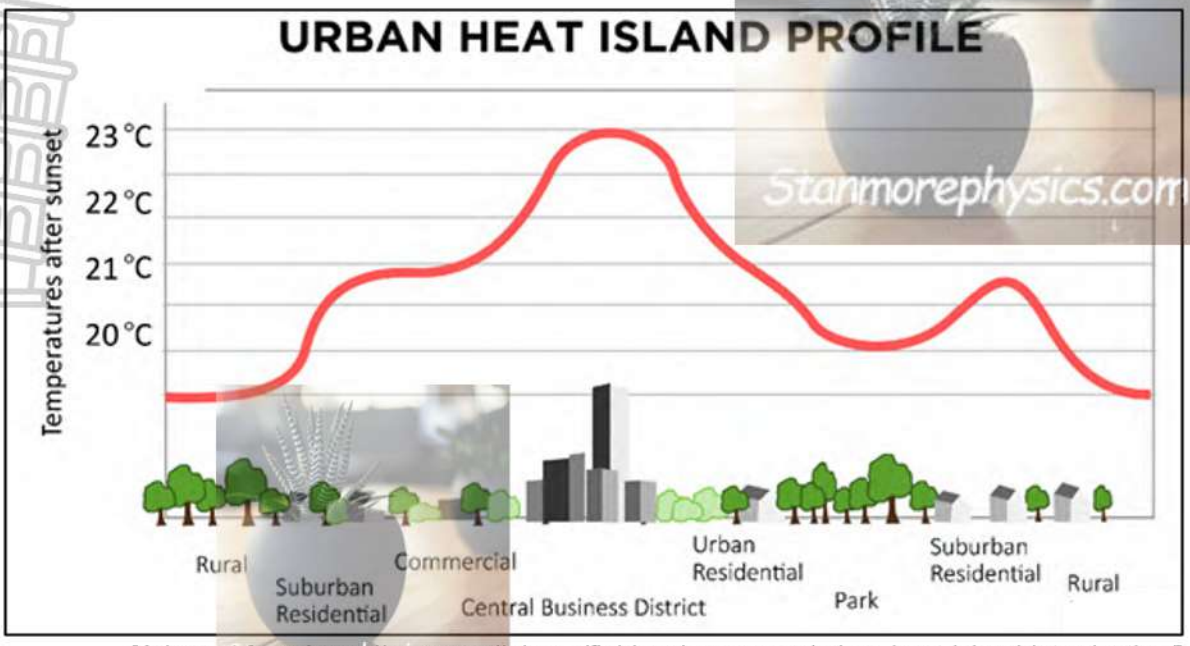
1.4.4 List three negative results of line thunderstorms mentioned in the extract) (3x1) (3)

1.4.5 Distinguish between the temperature and moisture content of the winds at **B** and **C**. (2x2) (4)

1.4.6 Discuss strategies that can be implemented by farmers to reduce the negative impact of the line thunderstorms to humans. (2x2) (4)

[15]

1.5 Study the FIGURE below which is based on urban heat island.



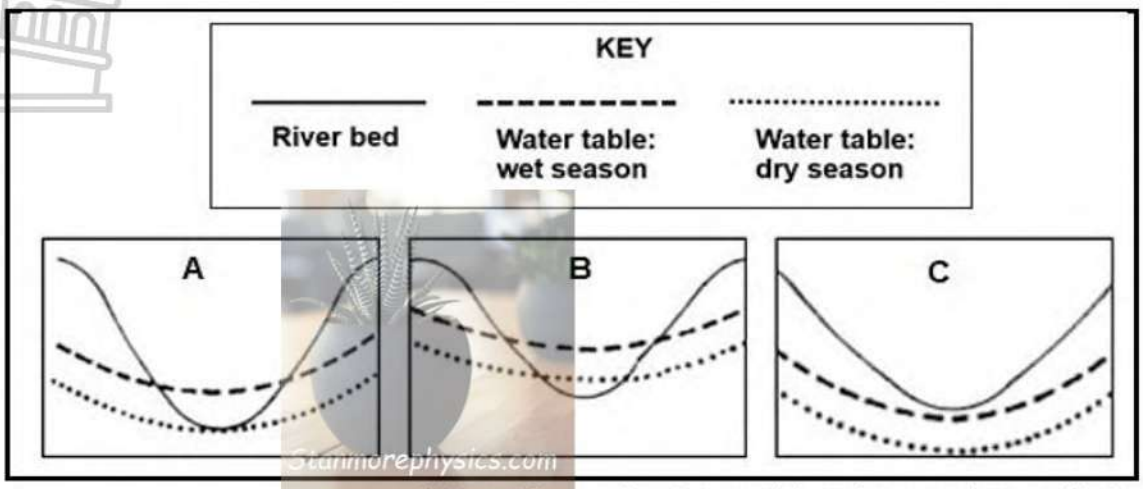

[Adapted from https://www.metlink.org/fieldwork-resource/urban-heat-island-introduction/]

| | | | |
|---|---|---|---|
| 1.5.1 | What is an *urban heat island*. | (1x2) | (2) |
| 1.5.2 | According to the sketch above, which areas have the lowest and which areas have the highest temperatures respectively? | (2x1) | (2) |
| 1.5.3 | Calculate the temperature range between the areas mentioned in QUESTION 1.5.2. | (3x1) | (3) |
| 1.5.4 | What are the effects of the heat island on humans and the natural environment within the urban area. | (2x2) | (4) |
| 1.5.5 | Propose ways in which city authorities can reduce the effects of Urban Heat Island. | (2x2) | (4) |

[15]

## QUESTION 2

2.1 Match the descriptions in question 2.1.1 to 2.1.7 with the cross profiles of river type (A, B or C). Write only the letter (A, B or C) next to the question numbers (2.1.1 to 2.1.7) in your Answer Book, for example 2.1.8 B




[Adapted from nationalgeographic.org/resource/water-tables]

2.1.1 Which profile (**A, B or C**) shows an exotic river in its lower course?

2.1.2 Which river (**A, B or C**) flows throughout the year

2.1.3 Which river(**A, B or C**) flows for a short period of time

2.1.4 Which profile (**A, B or C**) originates in high rainfall areas?

2.1.5 In which profile (**A, B or C**) does the groundwater never contribute to stream flow?

2.1.6 In which profile (**A, B or C**) is the river bed always below the water table?

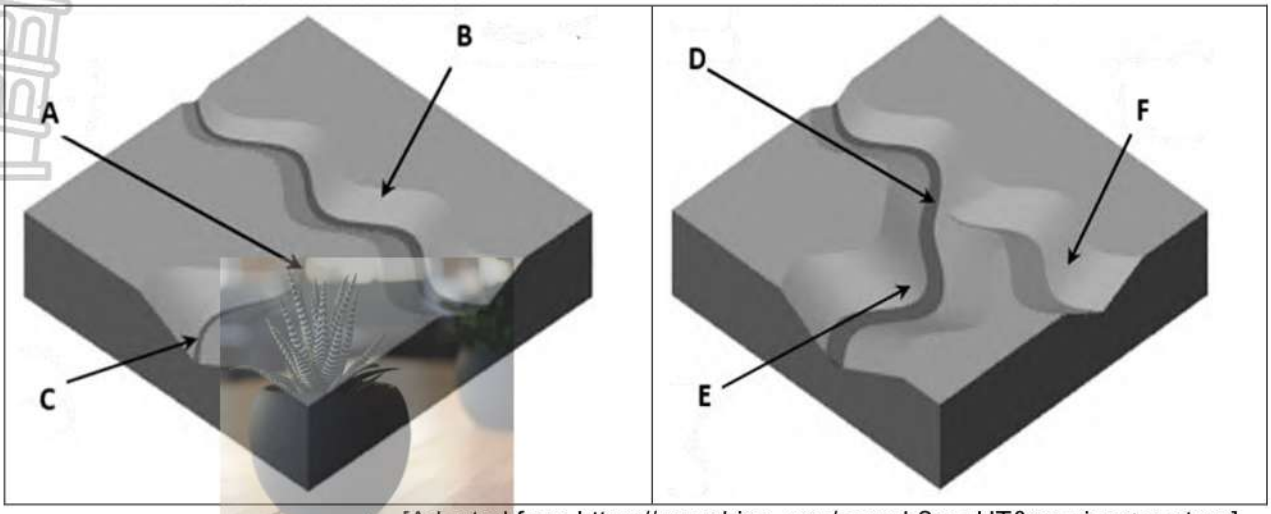
2.1.7 Which profile (**A, B or C**) represents a river that flows only during the rainy season?

(7x1) (7)

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2.2 Refer to the sketch below, which shows river capture. Complete the statement in COLUMN A with the option in COLUMN B. Write only **Y** or **Z** next to the question numbers (2.2.1 to 2.2.8) in the ANSWER BOOK.eg 2.2.9 **Z**

**BEFORE RIVER CAPTURE** **AFTER RIVER CAPTURE**



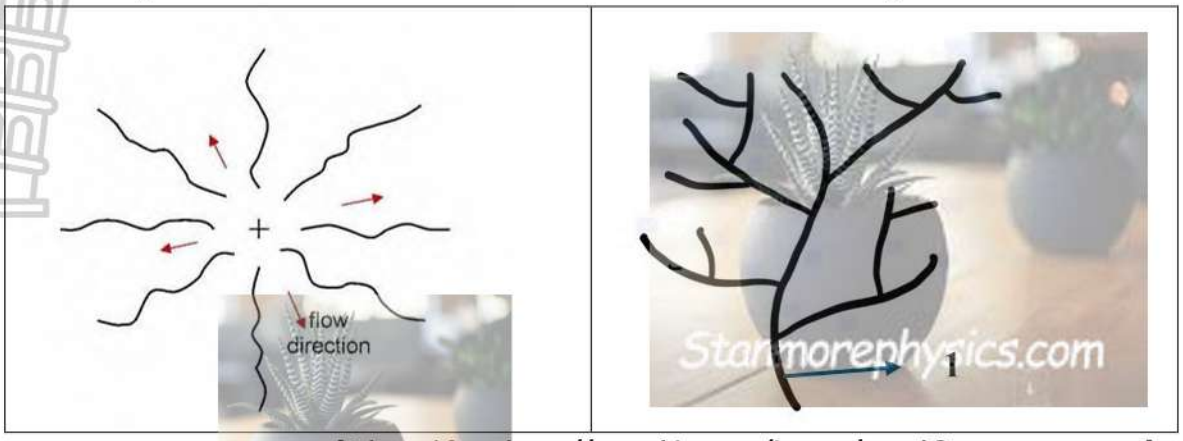

[Adapted from https://www.bing.com/search?qs=UT&pq=river+capture]

| COLUMN A | COLUMN B |
|---|---|
| 2.2.1 Erosion at **A** is responsible for the lengthening of the river | **Y** Vertical<br>**Z** Headward |
| 2.2.2 The landform caused by the type of erosion in QUESTION 2.2.1 | **Y** Spur<br>**Z** Gorge |
| 2.2.3 Feature **F** is referred to as | **Y** Captive<br>**Z** Misfit stream |
| 2.2.4 Feature a **D** is referred to as a/an.... | **Y** elbow of capture<br>**Z** wind gap |
| 2.2.5 River **C** will eventually capture River **B** because it flows on a…… gradient | **Y** steeper<br>**Z** gentler |
| 2.2.6 River **C** will eventually capture River **B** because the rock is .... | **Y** softer<br>**Z** harder |
| 2.2.7 River **B** is known as ..... stream | **Y** captured<br>**Z** captor |
| 2.2.8 The resultant fluvial landform of river capture at **E** is a/n .... | **Y** oxbow lake<br>**Z** waterfall |

(8x1) (8)

2.3 Refer to the diagrams below showing drainage patterns.

**A** **B**

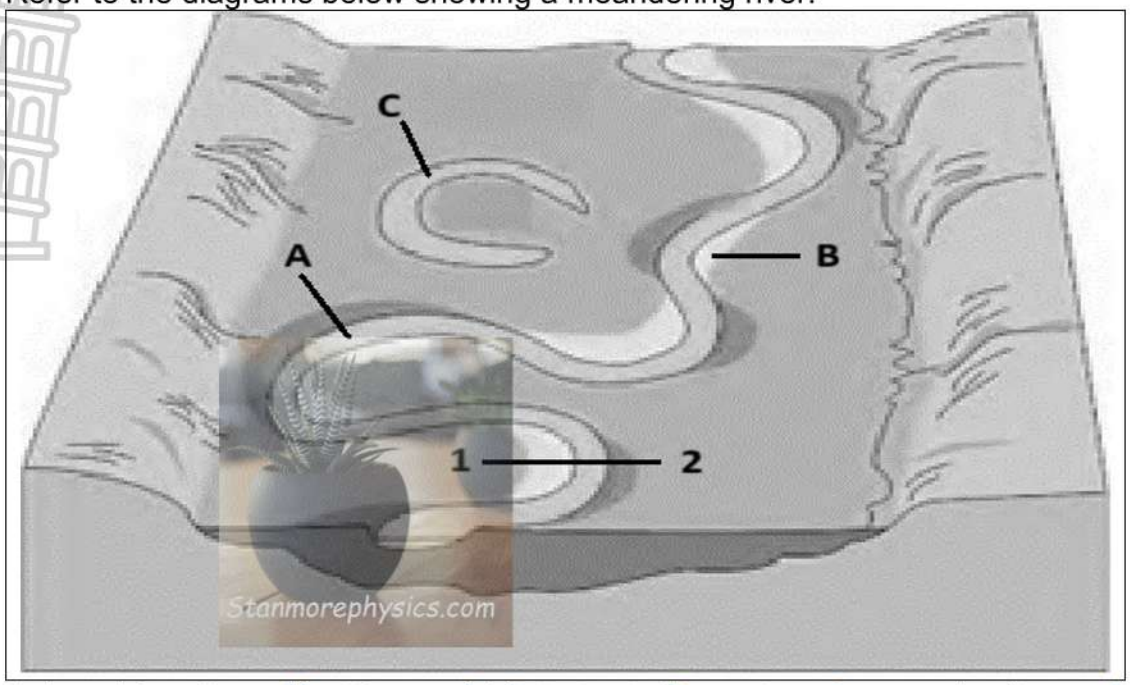



[Adapted from https://www.bing.com/images/search?q=stream-pattern]

| | | | |
|---|---|---|---|
| 2.3.1 | What is a drainage pattern? | (1x2) | (2) |
| 2.3.2 | Identify the drainage pattern **A** and **B** | (2x1) | (2) |
| 2.3.3 | Give evidence from the diagrams to support your choices in QUESTION 2.3.2 | (2x2) | (4) |
| 2.3.4 | Determine the stream order at **1** | (1x2) | (2) |
| 2.3.5 | The drainage density in sketch **B** is (high/low) | (1x1) | (1) |
| 2.3.6 | Suggest the reasons why drainage pattern **B** is suitable for agriculture/farming. | (2x2) | (4) |

[15]

2.4 Refer to the diagrams below showing a meandering river.




[Adapted from https://quizlet.com/gb/363435181/formation-of-a-meander-diagram/]

| | | | |
|---|---|---|---|
| 2.4.1 | The fluvial landform above is a meander, define the term meandering. | (1x2) | (2) |
| 2.4.2 | Which course of the river does meandering occur? | (1x1) | (1) |
| 2.4.3 | Explain why the slip-off at **B** is gentle? | (1x2) | (2) |
| 2.4.4 | Draw a rough cross-section from **1** to **2** to show the area where the highest velocity (speed) occurs. | (2x1) | (2) |
| 2.4.5 | When **A** is cut off from the rest of the river it forms an oxbow lake **C,** in a paragraph of approximately EIGHT lines, explain how the oxbow lake become cut off from the mainstream. | (4x2) | (8) |

[15]

2.5 Refer to the case study on catchment and river management

**Toxic time bomb: Klip River pollution crisis demands action**



Decades of industrial waste and sewage spills have turned the Klip River into a health hazard – WaterCAN is calling for accountability before more lives are at risk.

The Water Community Action Network (WaterCAN), is demanding urgent action following a University of Johannesburg study confirming the long-term toxic pollution of the Klip River – a crisis WaterCAN has been warning about since 2023.

The Klip River feeds into the Vaal River, a critical water source for millions of South Africans. Yet, ongoing industrial and municipal pollution threatens ecosystems, public health, food security, and basic human rights, says Dr Ferrial Adam, Executive Manager for WaterCAN.

"In the Klip River into a sludge-filled, toxic stream.a water-scarce country like ours, such pollution is criminal. It's time to hold individuals accountable. Polluting water is a violation of basic rights, including the right to health," says Dr Adam.

Communities near the river face a slow, silent health disaster, according to Dr Adam. "Enough is enough. We cannot wait for studies to pile up while our rivers and our people get sicker. We need action, not more silence."WaterCAN is calling on the National Prosecuting Authority to act. "It's time environmental crimes are treated with the seriousness they deserve."

[source: Toxic time bomb: Klip River pollution crisis demands action - WaterCAN

| | | | |
|---|---|---|---|
| 2.5.1 | What does the abbreviation CAN in the article stand for? | (1x1) | (1) |
| 2.5.2 | Explain the importance of river management. | (1x2) | (2) |
| 2.5.3 | According to the extract, what initiated the Klip River crisis? | (1x2) | (2) |
| 2.5.4 | Quote, from the extract, the impact of river pollution on the people. | (1x2) | (2) |
| 2.5.5 | *" It's time to hold individuals accountable. Polluting water is a violation of basic rights, including the right to health," says Dr Adam.*<br><br>State ONE way in which individuals polluting the river can be held accountable. | (1x2) | (2) |
| 2.5.6 | Suggest **THREE** sustainable strategies that can be implemented in order to maintain the quality of water in Klip River. | (3x2) | (6) |
| | | | [15] |

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**[60]**

**TOTAL SECTION A: 120**