Province of the
EASTERN CAPE
EDUCATION

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Provinsie van die Oos Kaap: Department van Onderwys
Porafensie Ya Kapa Botjahabela: Lefapha la Thuto

# NATIONAL SENIOR CERTIFICATE

## GRADE 12

## JUNE 2026

# GEOGRAPHY

**MARKS:** **150**

**TIME:** **3 hours**

This question paper consists of 21 pages.

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## INSTRUCTIONS AND INFORMATION

1. This question paper consists of TWO SECTIONS.

   SECTION A:
   QUESTION 1: CLIMATE AND WEATHER (40)
   QUESTION 2: GEOMORPHOLOGY (40)
   QUESTION 3: RURAL AND URBAN SETTLEMENTS (40)

   SECTION B:
   QUESTION 4: GEOGRAPHICAL SKILLS AND TECHNIQUES (30)

2. Answer all FOUR questions.

3. ALL diagrams are included in the QUESTION PAPER.

4. Leave a line between subsections of questions answered.

5. Start EACH question at the top of a NEW page.

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

7. Do NOT write in the margins of the ANSWER BOOK.

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

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

10. Units of measurement MUST be indicated in your final answer, for example 1 020 hPa, 14 °C and 45 m.

11. You may use a non-programmable calculator.

12. You may use a magnifying glass.

13. Write neatly and legibly.

## SPECIFIC INSTRUCTIONS AND INFORMATION FOR SECTION B

14. A 1 : 50 000 topographical map 3319AD CERES and a 1 : 10 000 orthophoto map 3319 AD 12 CERES are provided.

15. The area demarcated in RED/BLACK on the topographic map represents the area covered by the orthophoto map.

16. Show ALL calculations. Marks will be allocated for steps in calculations.

17. You must hand in the topographical and the orthophoto map to the invigilator at the end of this examination session.

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## SECTION A

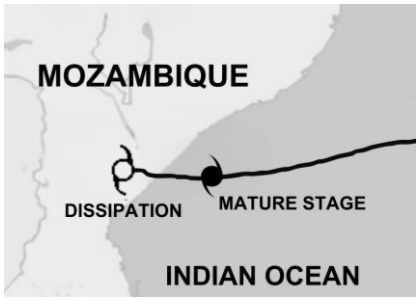
## QUESTION 1: CLIMATE AND WEATHER

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 1.1.5) in the ANSWER BOOK, e.g. 1.1.6 D.

**SOUTH-WEST INDIAN OCEAN REGION (2025 SEASON)**

| STORM NAME | PEAK WIND SPEED (km/h) | CLASSIFICATION |
|---|---|---|
| Garance | 194 | Intense Tropical Cyclone |
| Honde | 130 | Tropical Cyclone |
| Ivone | 90 | Severe Tropical Storm |
| Faida | 79 | Moderate Tropical Storm |

**PATH OF FAIDA**




[Adapted from https://www.gdacs.org/Cyclones/report.]

1.1.1 Tropical Cyclone … occurred first in the 2025 season.

A Garance
B Honde
C Ivone
D Faida

1.1.2 Tropical Cyclone … was classified as the most intense (strongest).

A Garance
B Honde
C Ivone
D Faida

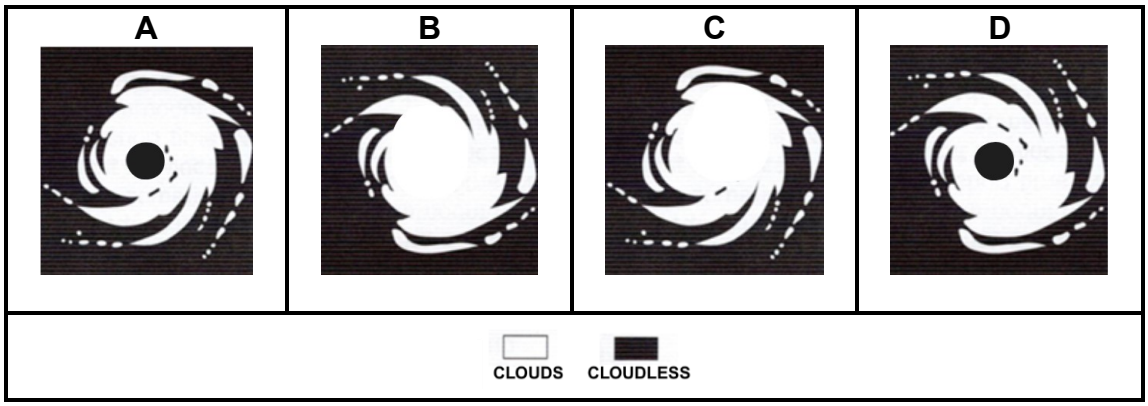
1.1.3 Tropical cyclones intensify over the Indian Ocean mainly because of the …

A absorption of latent heat.
B convergence and uplift of warm, moist air.
C absence of the Coriolis force.
D the influence of the westerly wind belt.

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1.1.4 Identify the mature stage of Tropical Cyclone Faida:



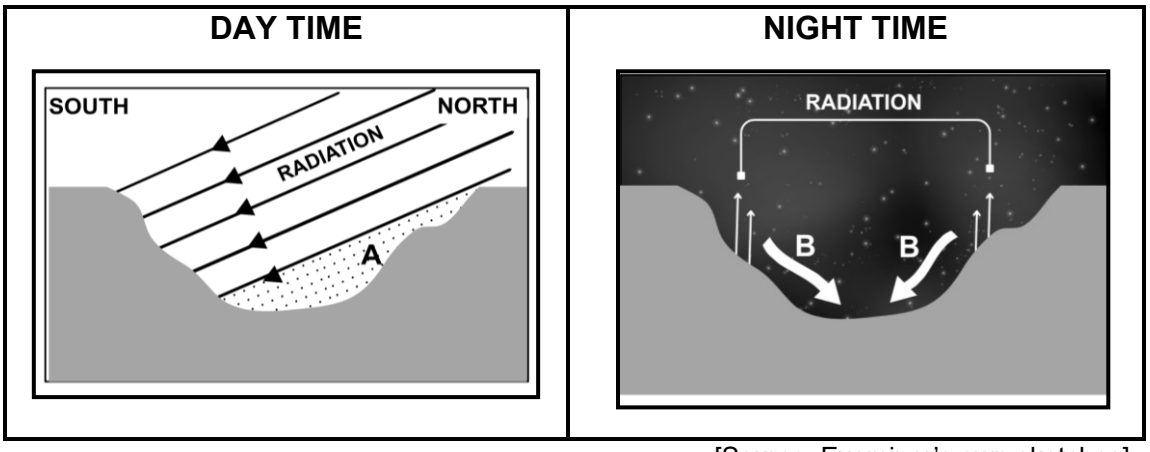

[Source: Examiner's own sketches]

1.1.5 The factors that caused Tropical Cyclone Faida to dissipate:

(i) Friction over land surface
(ii) Movement into the subtropics
(iii) Passage through an approaching cold front
(iv) Drier air entered the system

A (i) and (iii)
B (ii) and (iv)
C (i) and (iv)
D (ii) and (iii) (5 x 1) (5)

1.2 The sketches show the same valley at different times of the day. Select the CORRECT option from the brackets to complete each statement.




[Source: Examiner's own sketches]

1.2.1 The valley is in the (southern / northern) hemisphere.

1.2.2 In the valley, slope **A** is will be (cooler and moist / warmer and drier).

1.2.3 The winds at **B** are called (anabatic / katabatic) winds.

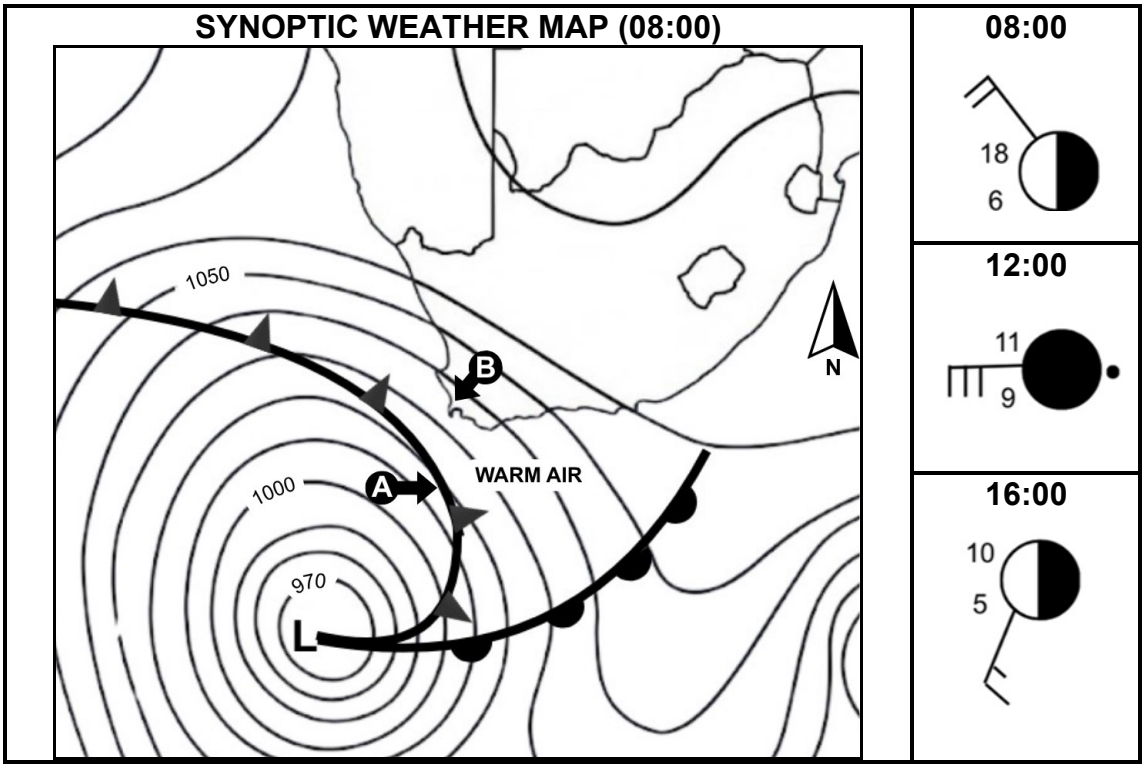
1.2.4 One of the main conditions for the formation of wind **B** is (solar / terrestrial) radiation.

1.2.5 (Pressure / Gravity) is the force primarily responsible for the movement of air at **B**. (5 x 1) (5)

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1.3 Refer the synoptic weather map and station models based on the conditions experienced at **B** as it is influenced by the mid-latitude cyclone.




[Adapted from www.imperical.ac.uk/grantham/research/climate]

1.3.1 Identify the type of front at **A.** (1 x 1) (1)

1.3.2 Give TWO pieces of evidence from the synoptic weather map to show that the mid-latitude cyclone is in its mature stage. (2 x 1) (2)

1.3.3 Describe the expected changes in temperature and humidity at **B** from 08:00 to 12:00. (2 x 1) (2)

1.3.4 How does the front at **A** lead to rainfall at **B** at 12:00? (2 x 2) (4)

1.3.5 How is the backing of the wind shown in the station models? (1 x 2) (2)

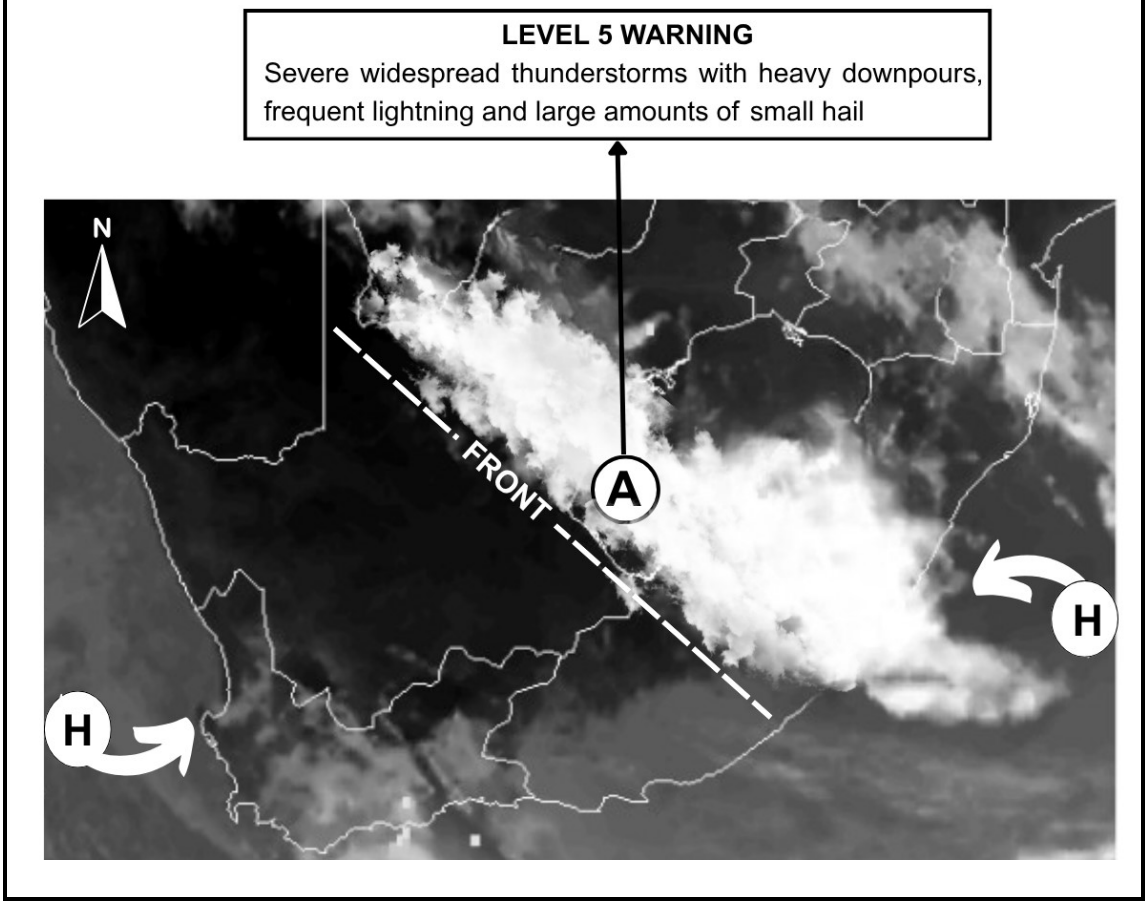
1.3.6 Explain why the winds at **B** back as the front at **A** moves over the area. (2 x 2) (4)

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1.4 Refer to the satellite image of South Africa and the associated travelling disturbance.

**SATELLITE IMAGE: 23 FEBRUARY 2026**




[Adapted from snowreport.co.za/south-africa-weather-forecast-23-february-2026]

1.4.1 Name the front shown in the satellite image. (1 x 1) (1)

1.4.2 In which season do line thunderstorms develop? (1 x 1) (1)

1.4.3 Name the type of clouds to the east of the front. (1 x 1) (1)

1.4.4 Explain how the interaction between the South Atlantic and South Indian high-pressure cells leads to the formation of these clouds (answer to QUESTION 1.4.3). (2 x 2) (4)

1.4.5 In a paragraph of approximately EIGHT lines, explain the destructive nature of line thunderstorms on the physical (natural) environment at **A**. (4 x 2) (8)

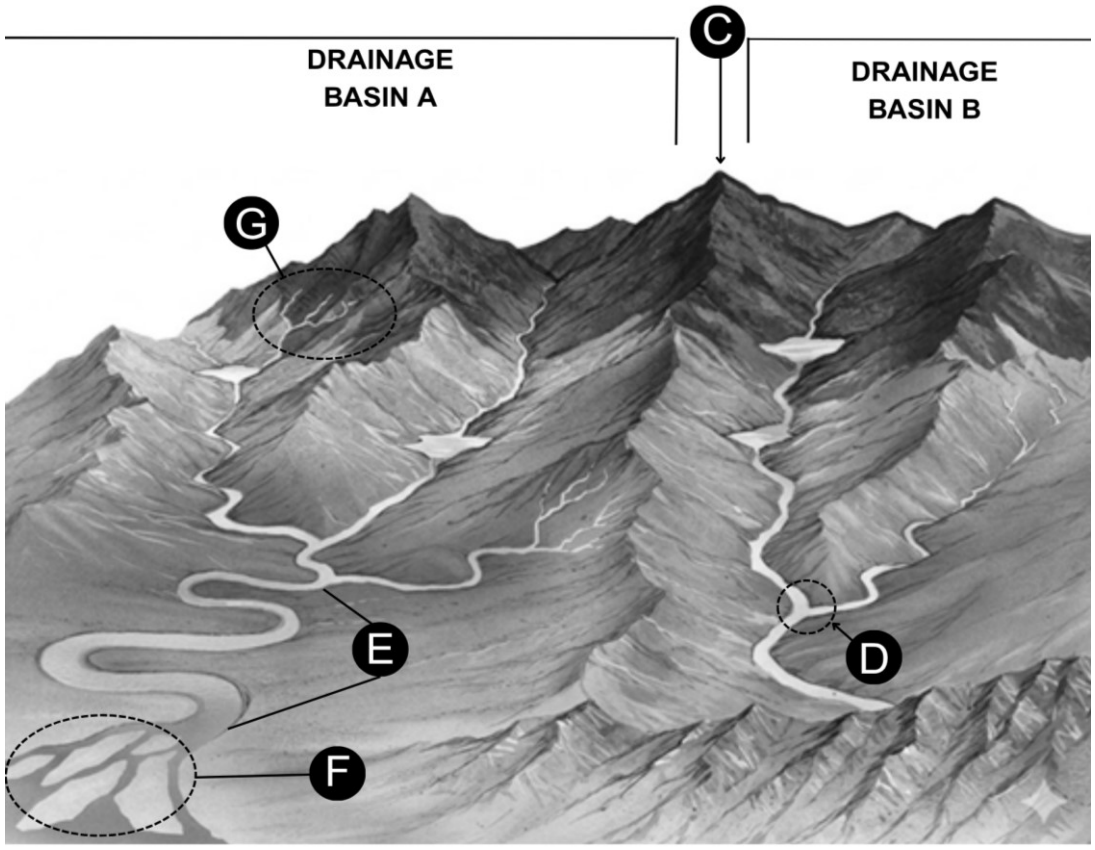
**[40]**

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## QUESTION 2: GEOMORPHOLOGY

2.1 Refer to the sketch based on drainage basins. Complete the statements in COLUMN A with the options in COLUMN B. Write only **Y** or **Z** next to the question numbers (2.1.1 to 2.1.5) in the ANSWER BOOK, e.g. 2.1.6 Y.




[Source: Examiner's own sketch]

| COLUMN A | COLUMN B |
|---|---|
| 2.1.1 The area of high land at **C** | **Y** interfluve<br>**Z** watershed |
| 2.1.2 The meeting point at **D** | **Y** tributary<br>**Z** confluence |
| 2.1.3 A braided stream pattern | **Y** F<br>**Z** E |
| 2.1.4 **G** shows the … of the river | **Y** mouth<br>**Z** source |
| 2.1.5 The gradient is steeper … of **D** | **Y** upstream<br>**Z** downstream |

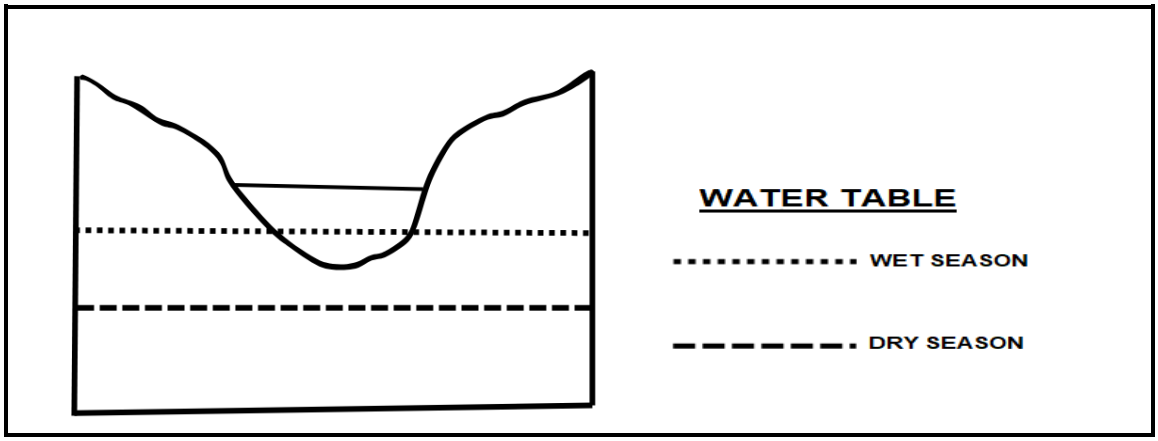
(5 x 1) (5)



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2.2 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 (2.2.1 to 2.2.5) in the ANSWER BOOK, e.g. 2.2.6 D.

Refer to the sketch below to answer QUESTION 2.2.1 and 2.2.2.




[Source: Examiner's own sketch]

2.2.1 The type of river:

A Permanent
B Periodic
C Episodic
D Exotic

2.2.2 Base flow increases …

A when the water table drops.
B during the wet season.
C when there is a decrease in infiltration.
D during the dry season.

Refer to the photograph to answer QUESTIONS 2.2.3 to 2.2.5



[Source:https://www.shutterstock.com/image-photo/turbulent-flow]

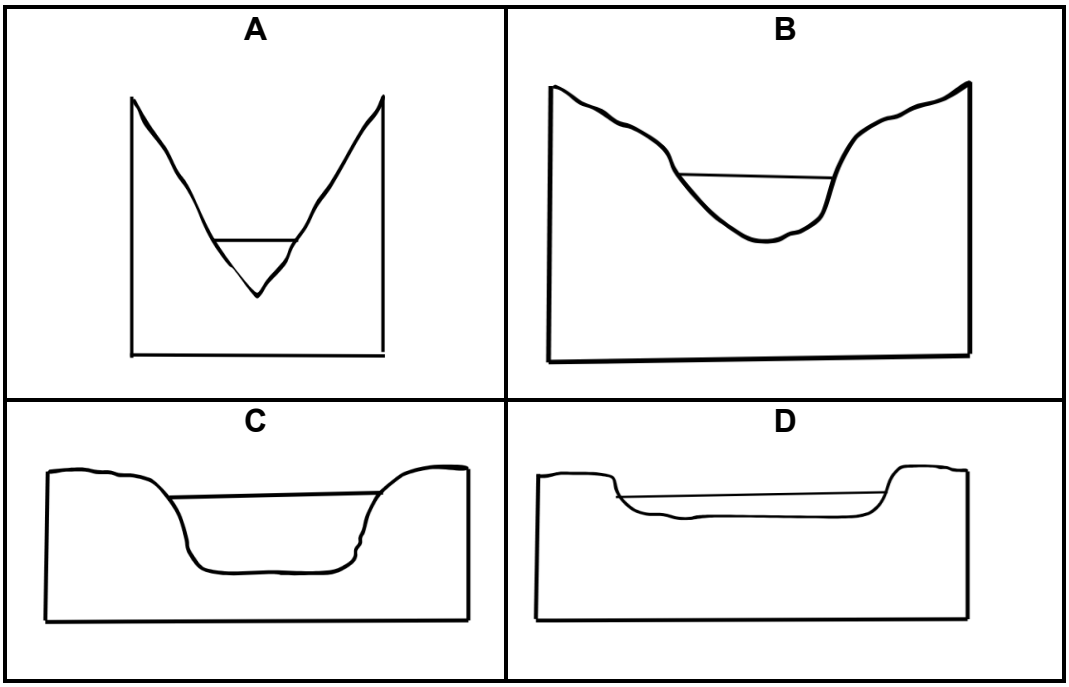


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2.2.3 The stream flow (discharge) of the river is ...

A turbulent.
B laminar.
C smooth.
D layered.

2.2.4 The shape of the valley in the upper course where this stream flows:




[Source: Examiner's own sketches]

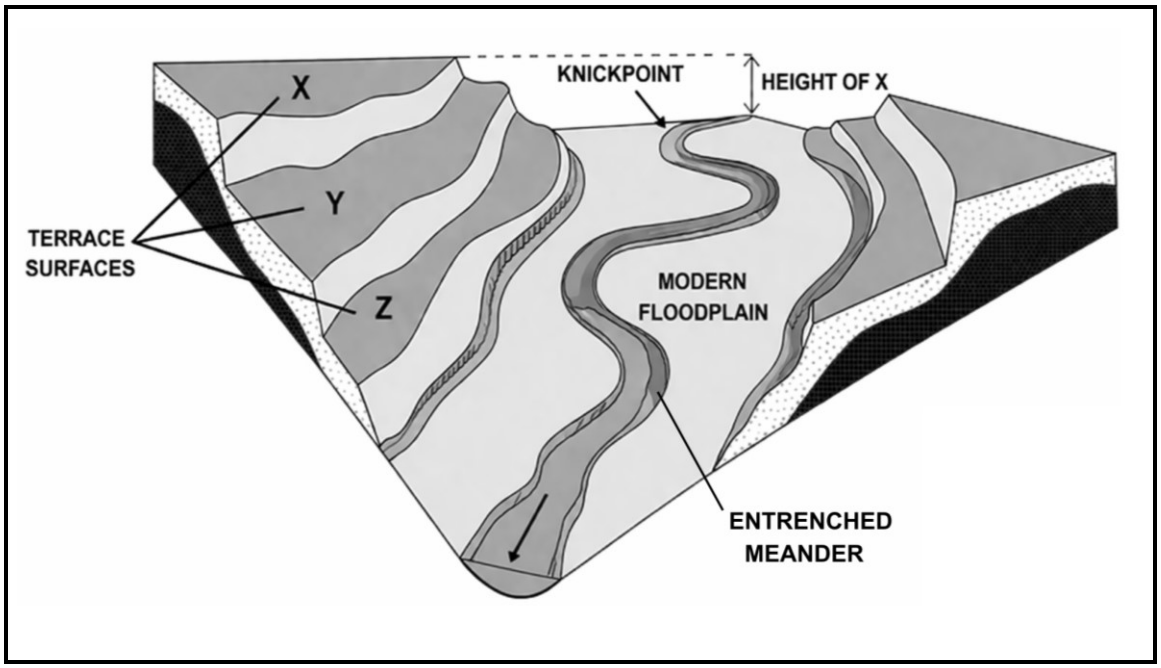
2.2.5 The fluvial process associated with the stream flow (discharge) is …

A undercutting.
B headward erosion.
C lateral erosion.
D vertical erosion. (5 x 1) (5)



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2.3 Refer to the sketch below on river rejuvenation.




[Adapted from www.researchgate.net/figure/fluvial landforms]

2.3.1 Identify evidence from the sketch to suggest that river rejuvenation has taken place. (2 x 1) (2)

2.3.2 What type of erosion is dominant during river rejuvenation? (1 x 1) (1)

2.3.3 Explain why this type of erosion (answer to QUESTION 2.3.2) is dominant during river rejuvenation. (2 x 2) (4)

2.3.4 In a paragraph of approximately EIGHT lines, explain the negative impact of rejuvenation on farming activities in the illustrated landscape. (4 x 2) (8)

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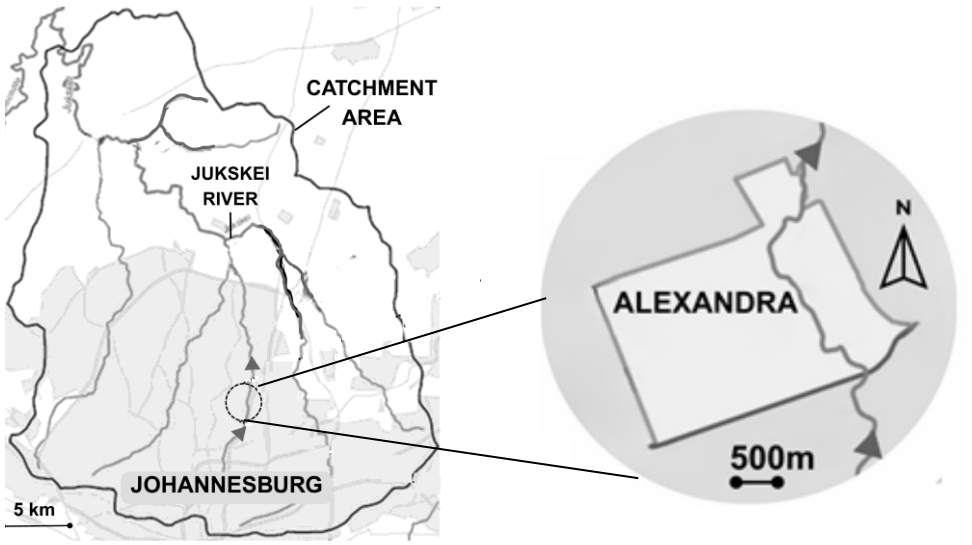
2.4 Refer to the infographic below based on catchment and river management in an urban area.

**JUKSKEI RIVER FLOWING THROUGH ALEXANDRA**



The Jukskei River forms part of the highly urbanised Johannesburg metropolitan catchment, which covers approximately 760 km² and includes residential, industrial and commercial land uses.

As the river flows through the densely populated township of Alexandra, it is heavily impacted by human activities. As a result, downstream, after passing through Alexandra, there is severe decrease in the water quality of the Jukskei River.




[Adapted from www.researchgate.net/figure/Sampling-sites-along--Jukskei-River]

2.4.1 According to the sketch, what is an *urbanised catchment area*? (1 x 2) (2)

2.4.2 By referring to the photograph, what urban land use impacts negatively on the Jukskei River? (1 x 1) (1)

2.4.3 Give TWO ways in which this urban land use (answer to QUESTION 2.4.2) can impact on the water quality of the Jukskei River. (2 x 1) (2)

2.4.4 How does poor water quality affect the natural (physical) environment downstream of Alexandra? (2 x 2) (4)

2.4.5 Suggest THREE sustainable strategies that the municipality of Johannesburg could implement to protect the urbanised catchment area of the Jukskei River. (3 x 2) (6)

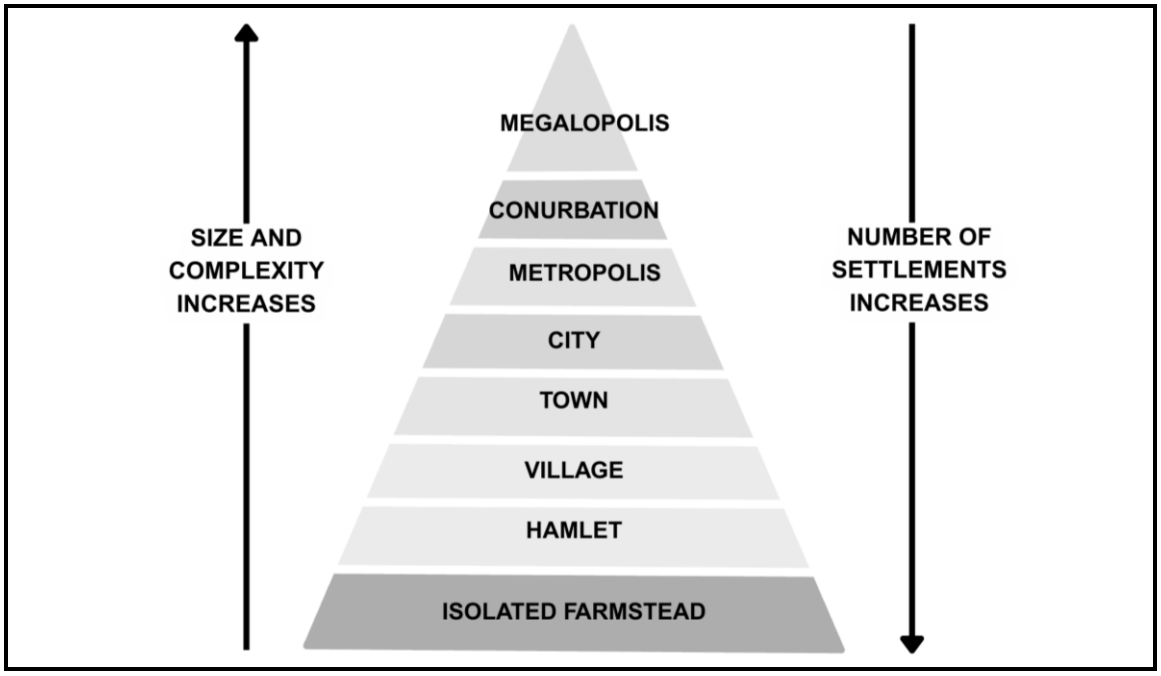
**[40]**

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## QUESTION 3: RURAL AND URBAN SETTLEMENTS

3.1 Refer to the sketch below showing the hierarchy of settlements. Complete the statements in COLUMN A with the options in COLUMN B. Write only **Y** or **Z** next to the question numbers (3.1.1 to 3.1.5) in the ANSWER BOOK, for example 3.1.6 Y.




[Source: Examiner's own sketch]

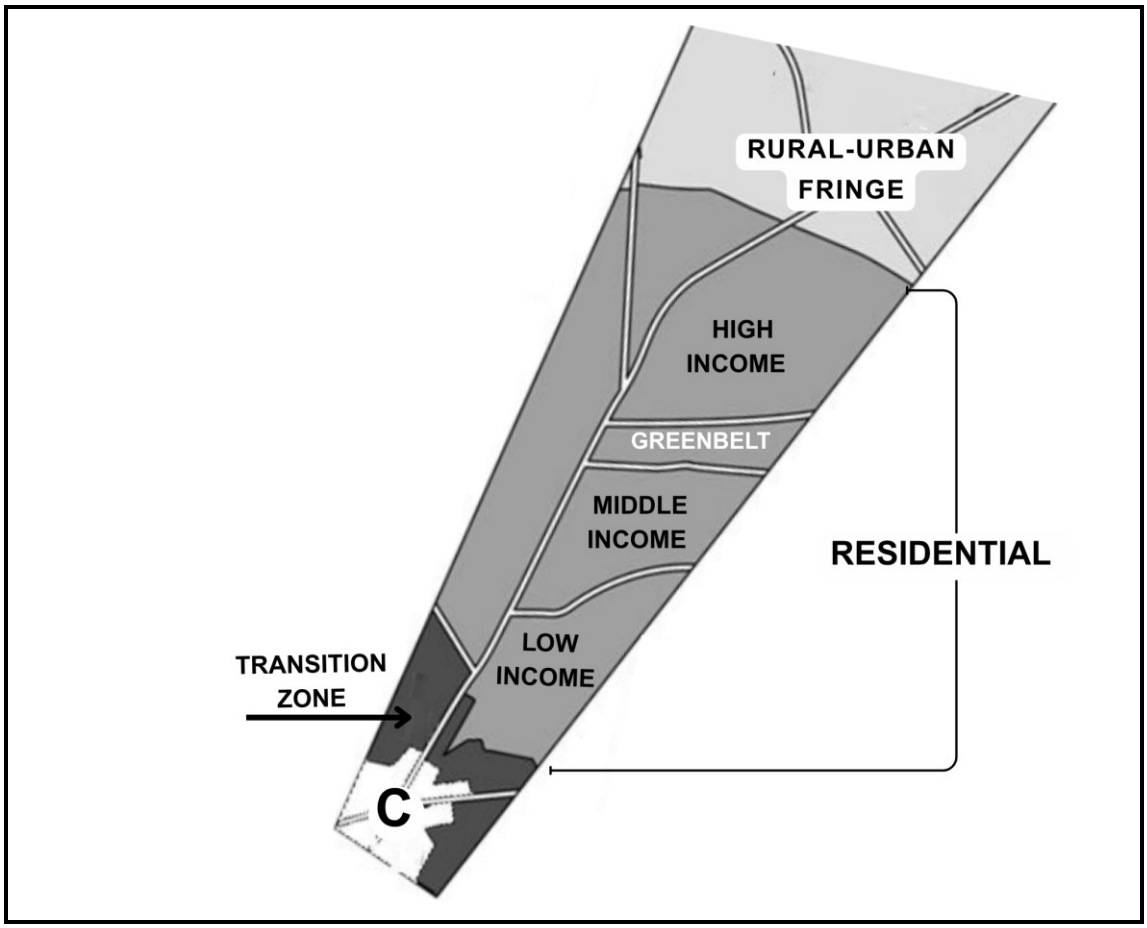
| COLUMN A | COLUMN B |
|---|---|
| 3.1.1 The criterion used to rank settlements | **Y** function<br>**Z** population size |
| 3.1.2 A … is the highest ranked rural settlement | **Y** hamlet<br>**Z** village |
| 3.1.3 The largest and most complex type of settlement in South Africa | **Y** metropolis<br>**Z** conurbation |
| 3.1.4 In a given area, there are … cities than towns | **Y** fewer<br>**Z** more |
| 3.1.5 A megalopolis consists of… urban areas | **Y** isolated<br>**Z** interconnected |

(5 x 1) (5)

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3.2 Refer to the diagram below showing urban land-use zones. Various options are presented as possible answers to the following questions. Choose the answer and write only the letter (A–D) next to the question numbers (3.2.1 to 3.2.5) in the answer book e.g 3.2.6 C.




[Source: Examiner's own sketch]

3.2.1 Land-use **C** which is characterised by a high degree of accessibility:

A Outlying Business District
B Heavy industrial zone
C Light industrial zone
D Central Business District

3.2.2 The high-income residential area is in close proximity to the:

(i) Transition zone
(ii) Rural-urban fringe
(iii) Green belt
(iv) Low-income residential area

A (i) and (iii)
B (ii) and (iii)
C (i) and (iv)
D (ii) and (iv)



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3.2.3 The main purpose (benefit) of a green belt:

A Controls urban sprawl
B Promotes invasion and succession
C Facilitates commercial decentralisation
D Ensures compatibility of land uses

3.2.4 The land-use zone that occupies the most amount of land:

A Transition zone
B Rural-urban fringe
C Residential zone
D Green belt

3.2.5 The land-use zones that are both zones of change:

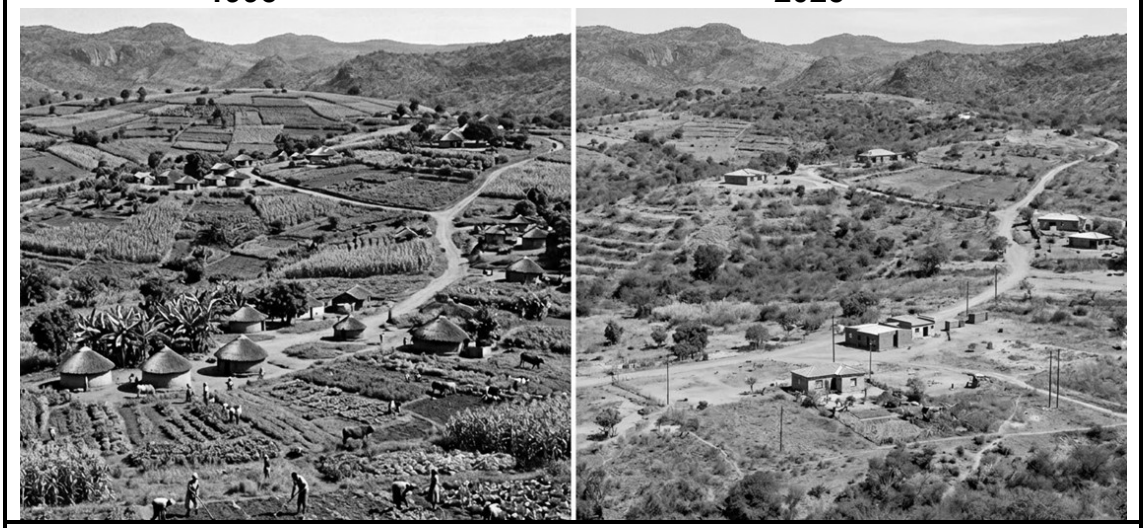
(i) Residential
(ii) Rural-urban fringe
(iii) Central Business District
(iv) Transition zone

A (i) and (ii)
B (ii) and (iii)
C (ii) and (iv)
D (iii) and (iv) (5 x 1) (5)

3.3 Refer to the photographs and extract below based on rural depopulation.

**RURAL SETTLEMENTS IN THE THULAMELA LOCAL MUNICIPALITY**

**1995** **2025**



In the Thulamela Local Municipality in Limpopo, there has been a steady decline in the number of rural households actively engaged in agriculture, along with shrinking plot sizes and increasing land abandonment. Between 1995 and 2025, cultivated agricultural land in the area has declined by approximately 73%. This decline is partly linked to the dispersed settlement pattern in the area. As a result, infrastructure development, such as roads, irrigation systems, electrical and storage facilities are limited. As farming becomes less viable, rural communities face increased cycles of poverty.

[Adapted from https://www.researchgate.net/publication/360263899]



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3.3.1 What is *rural depopulation?* (1 x 2) (2)

3.3.2 How is rural depopulation depicted in the two photographs? (1 x 2) (2)

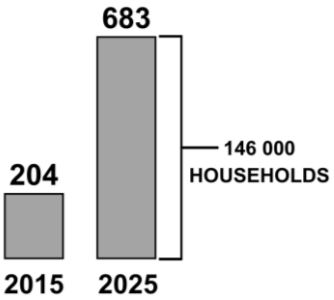
3.3.3 From the extract identify ONE type of transport infrastructure that is limited in the area. (1 x 1) (1)

3.3.4 How would the lack of this transport infrastructure (answer to QUESTION 3.3.3) increase the cycle of poverty in the area? (2 x 2) (4)

3.3.5 What strategies could the Thumela Local Municipality implement to increase economic growth through agriculture in the area? (3 x 2) (6)

3.4 Refer to the infographic based on informal settlements in Cape Town.

**NUMBER OF INFORMAL SETTLEMENTS IN CAPE TOWN**




Residents in the informal settlement of Mfuleni typically face challenges such as limited access to basic services and inadequate infrastructure. Recognising that informality cannot be entirely eliminated (removed), the City of Cape Town adopted an approach focused on upgrading existing infrastructure and services. The Garden City project (R22 million) aims to address these challenges by formalising the informal settlement through the provision of improved infrastructure and services, as evident in the photograph below.

**UPGRADES IN THE INFORMAL SETTLEMENT OF MFULENI**




[Adapted from https://resource.capetown.gov.za/]

3.4.1 Provide evidence from the graph that the number of informal settlements in Cape Town has increased over time. (1 x 2) (2)

3.4.2 In 2025, how many households were situated in informal settlements? (1 x 1) (1)



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3.4.3 Provide TWO economic factors that influence the high number of households (answer to QUESTION 3.4.2) living in informal settlements. (2 x 1) (2)

3.4.4 From the photograph, identify TWO upgrades that have been made to the Mfuleni informal settlement. (2 x 1) (2)

3.4.5 In a paragraph of approximately EIGHT lines, explain how the upgrades (answer to QUESTION 3.4.4) can have a positive social impact for people living in the Mfuleni informal settlement. (4 x 2) (8)

**[40]**

**TOTAL SECTION A: 120**

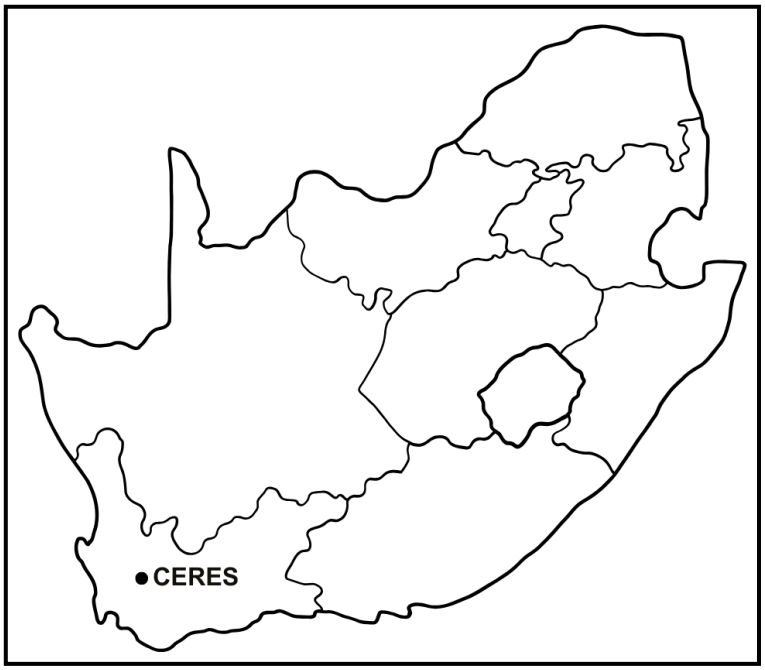


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## SECTION B

## QUESTION 4: GEOGRAPHICAL SKILLS AND TECHNIQUES

### GENERAL INFORMATION ON CERES




**Co-ordinates:** 33.37° S; 19.31° E

Ceres is a small town located in a mountainous valley in the Western Cape. It lies in a region characterised by a winter rainfall climate. The surrounding mountains influence both the climate and accessibility of the area. The town is closely associated with river systems, with rivers flowing through the valley and contributing to fertile soils. These conditions support extensive fruit farming, particularly deciduous fruit. Transport is significant in Ceres due to the presence of mountain passes. One of the key routes is Michell's Pass, which links the town to surrounding regions. The pass allows road access through the mountains and follows the natural valley created by erosion.

[Adapted from https://southafrica.co.za/ceres]

The following English term and its translation are shown on the topographic map:

| ENGLISH | AFRIKAANS |
|---|---|
| Michell's Pass | Michell se pas |

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## 4.1 MAPWORK SKILLS AND CALCULATIONS

Various options are provided as possible answers to the following questions. Choose the correct answer and write only the letter (A–D) next to the question numbers (4.1.1 and 4.1.2) in the ANSWER BOOK e.g. 4.1.3 A.

4.1.1 The portion of the river at **F** on the topographical map in block **A1** is a … river flowing in a … direction.

(i) perennial
(ii) non-perennial
(iii) north-westerly
(iv) south-easterly

A (i) and (iv)
B (ii) and (iv)
C (i) and (iii)
D (ii) and (iv) (1 x 1) (1)

4.1.2 On the orthophoto map, the straight-line distance between the police station in block **B3** and the spot height 456 in block **B2** is …

A 6,7 m.
B 3 350 m.
C 6,7 km.
D 670 m. (1 x 1) (1)

Refer to the topographic map to answer QUESTIONS 4.1.3 and 4.1.4.

4.1.3 The mean magnetic declination for 2026 is 25°38' West of True North.

Determine the magnetic bearing between trigonometrical station 98 in block **D2 / C2** and spot height 622 in block **C3.** (3 x 1) (3)

4.1.4 Refer to the portion of the road (R46) in **D3** and **E3**.

(a) Name the type of road. (1 x 1) (1)

(b) Identify the height indicator (460.4) along the road in block **D3**. (1 x 1) (1)

(c) The road through Michell's Pass makes use of a natural (ridge / gap) in the Witzenberg Mountains. (1 x 1) (1)

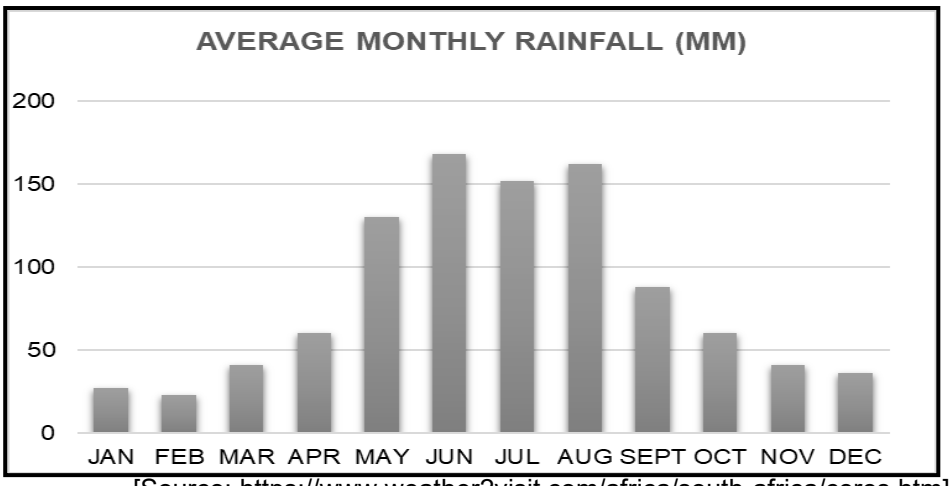
(d) Explain why the road follows the river course through Michell's Pass. (1 x 2) (2)

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## 4.2 MAP INTERPRETATION

4.2.1 Ceres receives a seasonal rainfall. Refer to the graph and topographical map to answer QUESTIONS 4.2.1 (a) and (b).

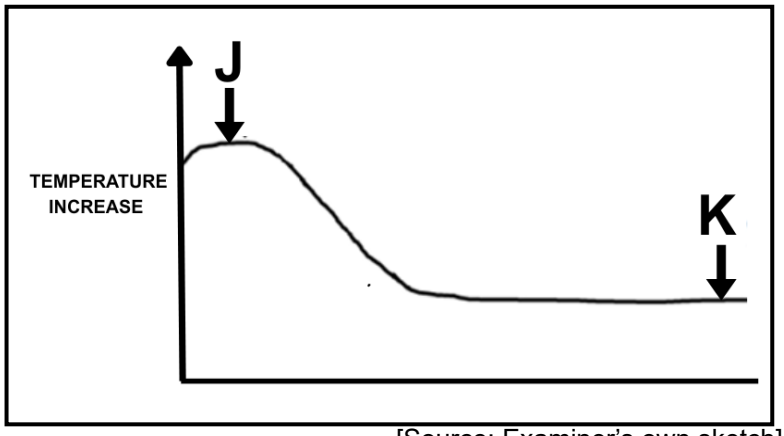



[Source: https://www.weather2visit.com/africa/south-africa/ceres.htm]

(a) Ceres rainfall pattern indicates that it receives a (summer/winter) rainfall. (1 x 1) (1)

(b) Provide evidence from block **D2** on the topographical map that indicates the area receives seasonal rainfall. (1 x 1) (1)

4.2.2 The temperature graph below illustrates the general change during the day from the industrial land-use zone (**J**) in block **C5** to **K** in block **A5** on the topographical map.




[Source: Examiner's own sketch]

(a) The general trend of the change in temperature from **J** to **K** is (increasing / decreasing). (1 x 1) (1)

(b) Give **TWO** reasons for the difference in temperature between **J** and **K.** (2 x 1) (2)



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Refer to the blocks **D3, E3** and **E4** on the topographical map.

4.2.3 Identify which area, **L** or **M**, has the higher drainage density. (1 x 1) (1)

4.2.4 Determine the stream order of the river at point **N.** (1 x 2) (2)

4.2.5 Explain how the stream order at point **N** could increase. (1 x 2) (2)

The photograph shows a commercial facility which is marked **Q** on the topographical and orthophoto maps.




[Source: https://www.google.com/maps]

4.2.6 The commercial facility at **Q** is classified as a(n):

A Isolated store
B Neighbourhood shopping centre
C Regional shopping centre
D Ribbon development (1 x 1) (1)

4.2.7 Give a reason for your answer to QUESTION 4.2.6. (1 x 1) (1)



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## 4.3 GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

Study the vertical aerial photograph of the area around Ceres Peak in block **C2** on the topographical map.




[Source: https://www.google.com/maps/place/Ceres+Peak]

4.3.1 What is *remote sensing*? (1 x 2) (2)

4.3.2 Name ONE device used to capture this image. (1 x 1) (1)

4.3.3 Explain why remote sensing is effective in this terrain. (1 x 2) (2)

4.3.4 The photograph represents data in its (raster/vector) format. (1 x 1) (1)

4.3.5 Explain how image resolution influences the visibility of steep slopes of Ceres Peak. (1 x 2) (2)

**[30]**

**TOTAL SECTION B: 30**
**GRAND TOTAL: 150**

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