



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

NATIONAL
SENIOR CERTIFICATE.

GRADE 11

GEAGRAPHY MAPWORK TASK
MPHAHLELE CURCUIT
FEBRUARY 2025

MARKS: 60

DURATION: 1H 30

THIS QUESTION PAPER CONSIST OF 8 PAGES, ANSWER ALL QUESTIONS.

NAME:
SCHOOL:
GRADE:
DATE: 28 FEBRUARY 2025

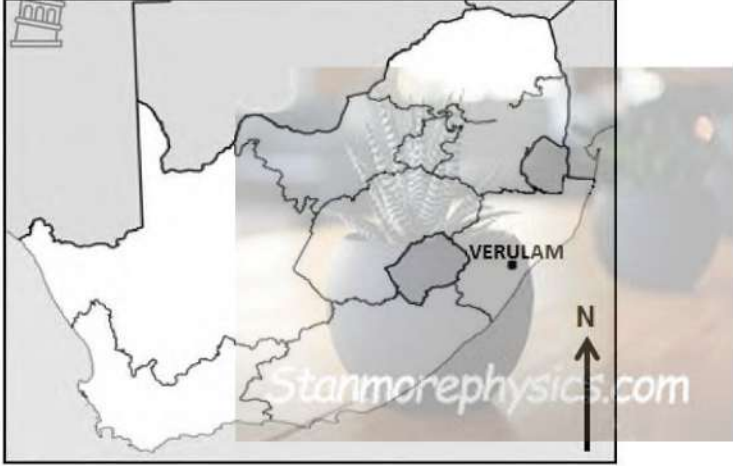
QUESTION	SUB-TOTAL	MARKER	DH/SMT	DISTRICT	PROVINCIAL
1	22				
2	20				
3	18				

TOTAL MARKS	MOD (FINAL)
60	60

QUESTION 1



GENERAL INFORMATION ON VERULAM



Coordinates: 29°35'S; 31°0'E

The town of Verulam is 170 years old and located to the north of Durban. It has a population of over 60 000 people. Verulam consists of densely populated residential and industrial areas like Canelands. On the outskirts are large farming areas where the main crop grown is sugar cane. There has been slow but steady progress in modernising the town by providing improved infrastructure to the rural areas.

The Hazelmere Dam, just a few kilometres north of Verulam, is the main source of water for the area and is used for a variety of activities, such as watersports and fishing. One of the main rivers that flows through Verulam is the Mdloti River in which the Hazelmere Dam has been built. An interesting fact is that Verulam is the only town in the world where the main street (Wick Street) ends in a river.

[Adapted from <https://www.google.com/search?q=map+of+verulam>]

The following English terms and their Afrikaans translations are shown on the topographic map:

ENGLISH

International airport
River
Bridge
Furrow

AFRIKAANS

Internasionale lughawe
Rivier
Brug
Voor



1.1 VERULUM is situated in the ...



- A Western Cape.
- B Eastern Cape.
- C Northern Cape.
- D Free State.

1.2 The numbers **2931** in the map index refers to ...

- A 31' latitude and 29' longitude.
- B 29' latitude and 31' longitude.
- C 29° latitude and 31° longitude.
- D 31° latitude and 29° longitude.

1.3 The Contour Interval of the topographic map is

- A. 10
- B. 20
- C. 30.
- D. 40

1.4 The height indicator in block **C4** on the Orthophoto map.....

- I. Contour line
- II. Trigonometrical station
- III. Spot height
- IV. Bench mark

- A (I) and (III)
- B (II) and (IV)
- C (I) and (III)
- D (III) and (IV)

1.5 Lines joining places of the same pressure are.....

- A. Isotherm
- B. Isohytes
- C. Contour lines
- D. Isobars

MAP CALCULATION

1.6. Determine the true bearing of the Spot height 161 marked **I** between Block A2 and A3 on the Topographical map to the Spot height 132 marked **H**. (2x1) (2)

1.7. Calculate the magnetic declination of the current year.

Difference in years: _____

Mean annual change: _____

Total change: _____

Current Magnetic declination: _____

(4 x 1) (5)

1.8. Calculate the area of demarcation area on the topographical map in m². Show ALL calculations. Marks will be awarded for calculations.

Formula: **area = length (L) x breadth (B)**

(4 x 1) (4)

1.9. Calculate the average gradient between **G** in block **B5** and **F** in block **C5**. Show ALL calculations. Marks will be awarded for calculations.

Formula: **gradient = $\frac{\text{vertical interval (VI)}}{\text{Horizontal equivalent (HE)}}$**

(4 x 1) (4)

1.10 (a) Determine if the gradient between (F to G) is steeper or gentler than (H to I).

_____ (1 x 1) (1)

(b) Give a reason for your answer in 1.10 (a).

_____ (2 x 1) (2)

[22]

QUESTION 2

MAP INTERPRETATION

2.1 The polygon feature in Block E3 (shown by K) on the topographical map is a/an

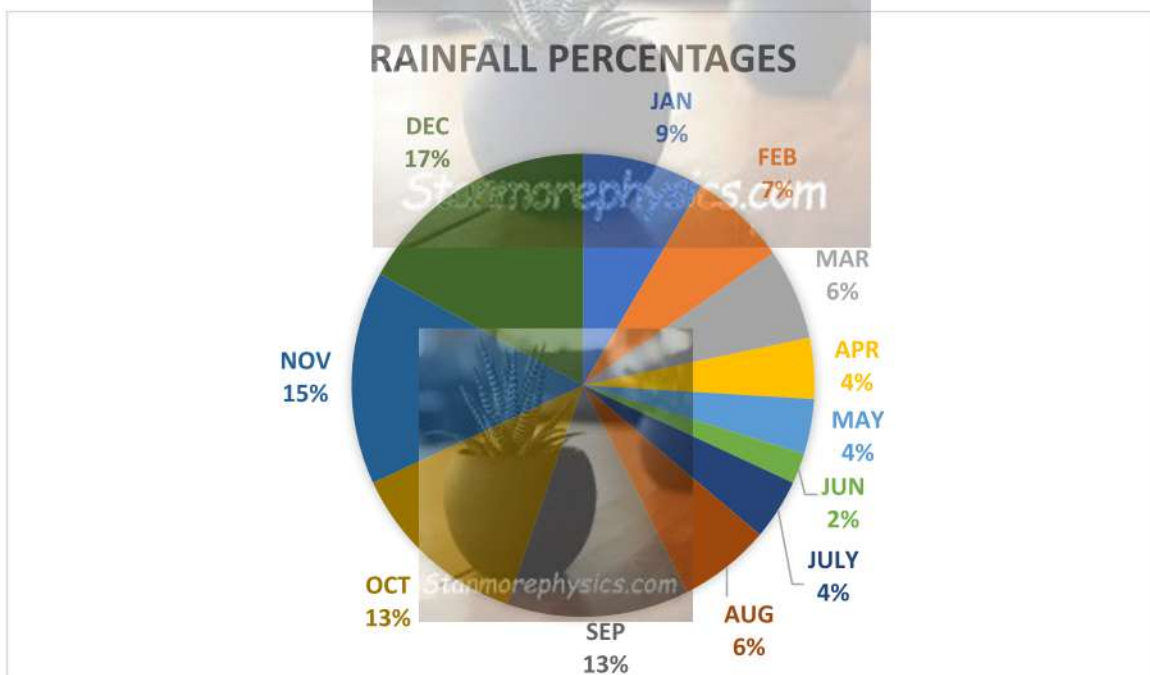


- A School
- B Build up area
- C Railway station.
- D Industries.



(1 x 1) (1)

2.2. Refer to the seasonal rainfall Pie Chart and answer the questions.



2.2. (a) Which season has the lowest rainfall in Verulam?

_____ (1 x 1) (1)

(b) What is the maximum amount of rainfall that was recorded in December?

_____ (1 x 1) (1)

2.3 Explain two importance of the Rows of trees in Block C1.

_____ (2 x 1) (2)

2.4 Verulam receive more rainfall. Yes or No.

Give two evidence from the Topographical map that substantiate the statement.

_____ (2 x 1) (2)

_____ (2 x 1) (2)

2.5 (a) What is the direction of the river marked **J** on the Topographical Map.

_____ (1 x 1) (1)

b. Give a reason to support your answer in 2.4 (a.)

_____ (2 x 1) (2)

c. Explain what can the people of Verulam use the water source in 2.4 (a) for:

_____ (2 x 1) (2)

2.6 Provide **Two** pieces of evidence from the map that represent agriculture in Verulam.

_____ (2 x 1) (2)

2.7 The pesticides from the cultivated lands can pollute the water in the River, what can be done or used to protect the water quality? (**stop the pollution?**)

_____ (2x 2) (4)

[20]

Question 3

3.1. Define the concept Geographic information system (GIS)

_____ (2×1) (2)

3.2. List any 2 components of GIS.

_____ (2×1) (2)

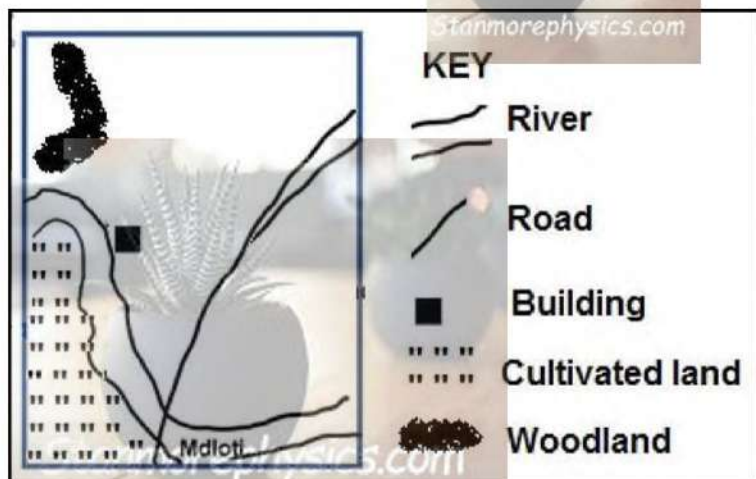
3.3. Explain the term remote sensing.

_____ (2×1) (2)

3.4. Explain how the Local municipality will use Remote sensing to monitor the negative impact or disasters in areas around their municipality.

_____ (2×2) (4)

3.5. Refer to the block below representing D5 on the Topographical map.



3.5.1. Identify the following:

- a. Man-made polygon (area) feature (1×1) (1)
- b. Natural line feature. (1×1) (1)

3.5.2. The two features from 3.5.1 represent (vector/raster) data. (2×1) (2)

3.6. Explain the difference between spatial data and Attribute data.



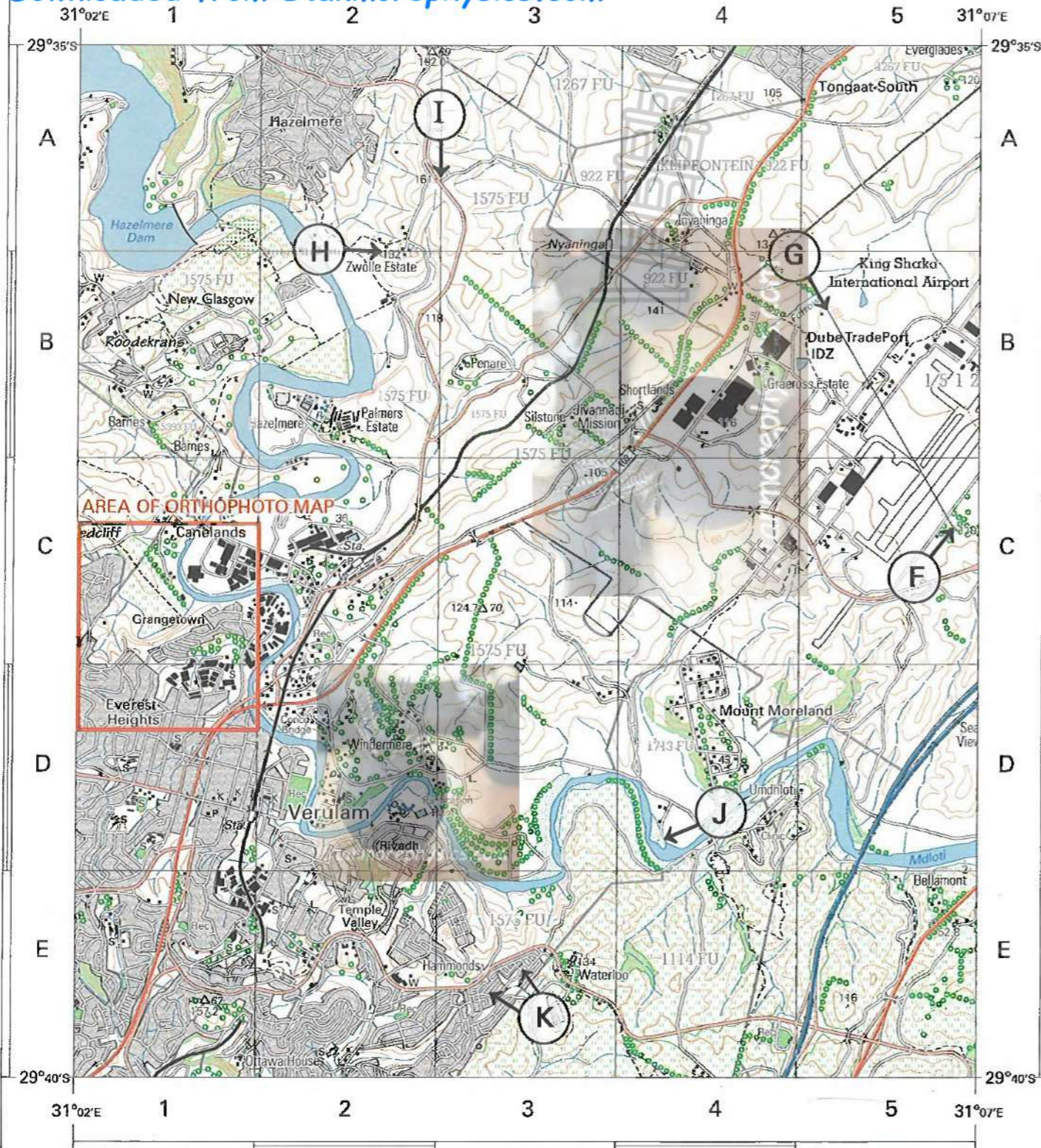
(2×2) (4)

[18]

TOTAL MARKS [60]



Downloaded from Stanmorephysics.com



Gemiddelde magnetiese daling 25°04' West van Ware Noord (Mei 2016).
 Gemiddelde jaarlikse verandering 9' Westwaarts (Mei 2016 - April 2017).

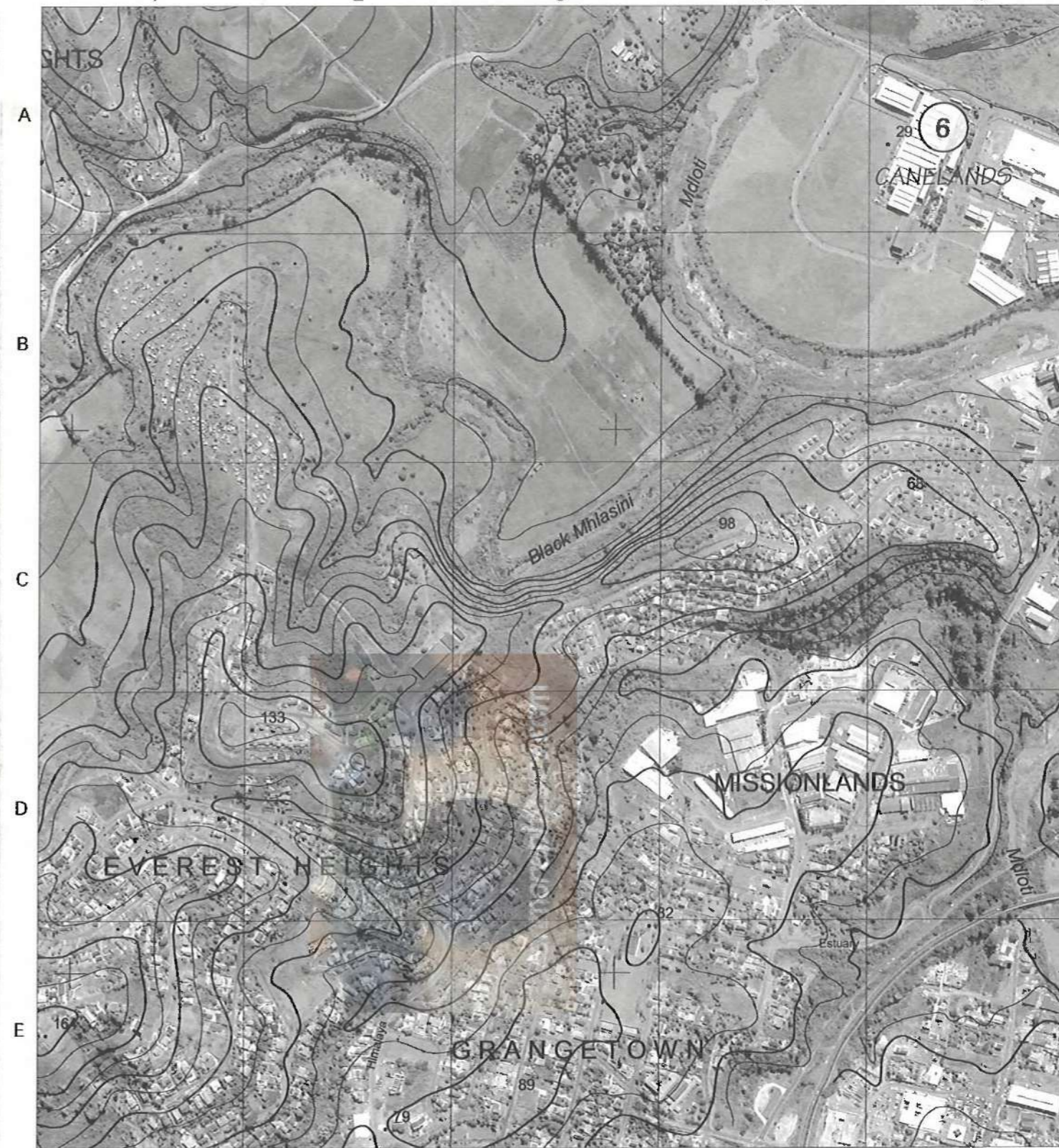


Mean magnetic declination 25°04' West of True North (May 2016).
 Mean annual change 9' Westwards (May 2016 - April 2017).

CONTOUR INTERVAL 20 METRES / KONTOERTUSSENRUIMTE 20 METER

REFERENCE

National Freeway; National Route	International Boundary and Beacon	Fence; Wall
Arterial Route	Provincial Boundary	Windpomp; Monument
Main Road	Protected Area	Communication Tower
Secondary Road; Bench Mark	Perennial River	Mine Dump; Excavation
Other Road; Bridge	Perennial Water	Trigonometrical Station; Marine Beacon
Track and Hiking Trail	Non-perennial River	Lighthouse and Marine Light
Railway; Station or Siding	Non-Perennial Water	Cemetery; Grave
Other Railway; Tunnel	Dry Water Course	Erosion; Sand
Embankment; Cutting	Dry Pan	Woodland
Power Line	Marsh and Vlei	Cultivated Land
Built-up Area (High, Low Density)	Pipeline (above ground)	Orchard or Vineyard
Buildings; Ruin	Water Tower; Reservoir; Water Point	Recreation Ground
Post Office; Police Station; Store	Coastal Rocks	Row of Trees
Place of Worship; School; Hotel	Prominent Rock Outcrop	Original Farms



CONTOUR INTERVAL 5 METRES - KONTOERTUSSENRUIMTE 5 METER

VERKLARING

Nasionale Deurpad; Nasionale Roete	Internasionale Grens en Baken	Draadheining; Muur
Hoofkeersroete	Provinsiale Grens	Windpomp; Monument
Hoofpad	Bewarings Gebied	Kommunikasietoring
Sekondêre Pad; Hoogtemark	Standhoudende Rivier	Myahoop; Uitgraving
Ander Pad; Brug	Standhoudende Water	Peilbaken; Seevaartbaken
Downwe Pad en Voetslaanpad	Nie-standhoudende Rivier	Vuurtoring en Seevaartig
Spoorweg; Stasie of Silyn	Nie-standhoudende Water	Begraafplaas; Graf
Ander Spoorweg; Tonnell	Droë Loop	Erosie; Sand
Opvulling; Deurgrawing	Droë Pan	Beboste Gebied
Kraglyn	Moeras en Vlei	Bewerkte Land
Beboude Gebied (Hoë, Laë Digtheid)	Pyplyn (bo die grond)	Boord of Wingerd
Geboue; Murasie	Wateroring; Reservoir; Waterpunt	Ontspanningsterrein
Poskantoor; Polisieostasie; Winkel	Kuslynrotse	Rye Bome
Plek van Aanbidding; Skool; Hotel	Prominente Klipbank	Oorspronklike Plaas



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QUESTION 1



GENERAL INFORMATION ON VERULAM



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Voor



1.1 VERULUM is situated in the ...



- A. Western Cape.
- B. Eastern Cape.
- C. Northern Cape.
- D. KwaZulu - Natal.

D

1.2 The numbers **2931** in the map index refers to ...

- A. 31' latitude and 29' longitude.
- B. 29' latitude and 31' longitude.
- C. 29° latitude and 31° longitude.
- D. 31° latitude and 29° longitude.

C

1.3 The Contour Interval of the topographic map is

- A. 10
- B. 20
- C. 30.
- D. 40

B

1.4 The height indicator in block **C4** on the Orthophoto map.....

- I. Contour line
- II. Trigonometrical station
- III. Spot height
- IV. Bench mark

- A. (I) and (III)
- B. (II) and (IV)
- C. (I) and (III)
- D. (III) and (IV)

C

1.5 Lines joining places of the same pressure are.....

- A. Isotherm
- B. Isohytes
- C. Contour lines
- D. Isobars

D

MAP CALCULATION

1.6. Determine the true bearing of the Spot height 161 marked **I** between Block A2 and A3 on the Topographical map to the Spot height 132 marked **H**. 210° (2×1) (2)

1.7. Calculate the magnetic declination of the current year.

Difference in years: 2025- 2016=9

Mean annual change: 9' W

Total change 9×9= 81 W

Current Magnetic declination: 25°04' W + 81' W

25° 85' W
26° 25' W OF TN (4 x 1) (4)

1.8. Calculate the area of demarcation area on the topographical map in m². Show ALL calculations. Marks will be awarded for calculations.

Formula: **area = length (L) x breadth (B)**

L = 3,7CM x 500= 1850m

B = 3,2CM x500= 1600m

A= 1850 m x1600 m

A= 2960000 m² (4 x 1) (4)

1.9. Calculate the average gradient between **G** in block **B5** and **F** in block **C5**. Show ALL calculations. Marks will be awarded for calculations.

Formula: **gradient = vertical interval (VI) / Horizontal equivalent (HE)**

HE =4, 5 cm x 500 = 2250 m

VI = 119m -80 m =39 m

= 39/2250

= 1: 57, 69 (4 x 1) (4)

1.10 (a) Determine if the gradient between (F to G) is steeper or gentler than (H to I).

More steeper (1 x 1) (1)

(b) Give a reason for your answer in 1.10 (a).

FOR EVERY 1 VERTICAL UNIT, YOU ONLY MOVE 57.69 UNITS HORIZONTAL. (2x 1) (2)

[22]

QUESTION 2

MAP INTERPRETATION

2.1 The polygon feature in Block E3 (shown by K) on the topographical map is a/an

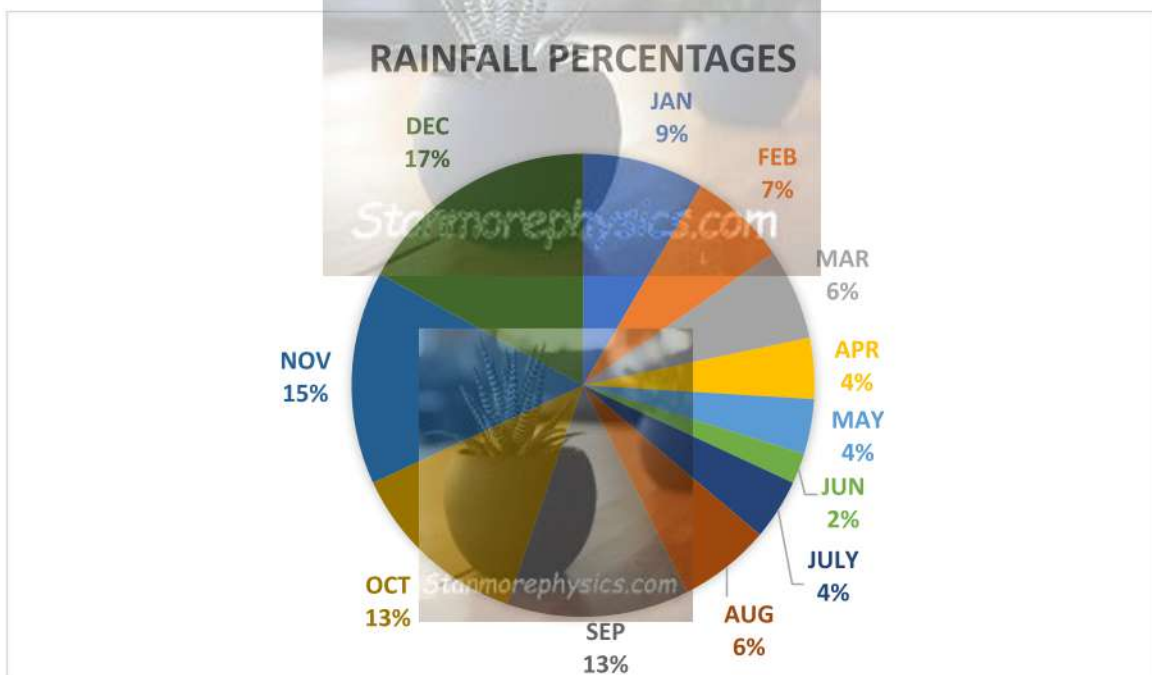


- A School
- B Build up area
- C Railway station.
- D Industries.

B

(1 x 1) (1)

2.2. Refer to the seasonal rainfall Pie Chart and answer the questions.



2.2. (a) Which season has the lowest rainfall in Verulam?

_____ JUNE _____ (1 x 1) (1)

(b) What is the maximum amount of rainfall that was recorded in December?

_____ 17% _____ (1 x 1) (1)

2.3 Explain two importance of the Rows of trees in Block C1.

- BLOCK THE WIND
- TO MINIMISE EROSION
- IT WORKS AS A BARRIER FOR FARM ANIMALS. (2 x 1) (2)

2.4 Verulam receive more rainfall. Yes or No.

Give two evidence from the Topographical map that substantiate the statement.

- NO. THE AREA IS ASSOCIATED WITH NON PERENIAL RIVERS. (2 x 1) (2)

- NO BECAUSE THERE ARE HAS LITTLE PROVE OF FARMING OR CULTIVATION. (2 x 1) (2)

2.5 (a) What is the direction of the river marked J on the Topographical Map.

NORTH WEASTERLY (1 x 1) (1)

b. Give a reason to support your answer in 2.4 (a.)

THE CONTOUR LINES ON THE EAST AND THE NORTH SHOWS THAT THE AREAS ARE STEEP. (2 x 1) (2)

c. Explain what can the people of Verulam use the water source in 2.4 (a) for:

CAN USE THE WATER IN THEIER HOMES FOR HOUSE CHORE, SWIMMING, AND FISHING. (2 x 1) (2)

2.6 Provide **Two** pieces of evidence to from map that represent agriculture in Verulam.

IT HAS WOODLANDS AND CULTIVATED LANDS. (2 x 1) (2)

2.7 The pesticides from the cultivated lands can pollute the water in the River, what can be done or used to protect the water quality?

- MAINTAIN BUFFER ZONES AROUND WATER RESOURCES TO FILTER RUNOFF.
- AVOID APPLYING PESTISIDES BEFORE A RAINFAL.
- IMPLEMATING COVER CROPPING TO REDUCE PESTICIDES TRANSPORTATION.
- USING CONTOUR FARMING TO REDUCE PESTICIDES TRANSPORTATION.

(2x2) (4)

[20]



Question 3

3.1. Define the concept Geographic information system (GIS)

IT IS A COMPUTER BASED TECHNOLOGY USED FOR COLLECTIN, ANALYSING, MANAGING AND PRESENTING GEOGRAPHIC DATA. (2×1) (2)

3.2. List any 2 components of GIS.

- SOFT WARE
- HARDWARE
- PEOPLE
- METHOD
- DATA (2×1) (2)

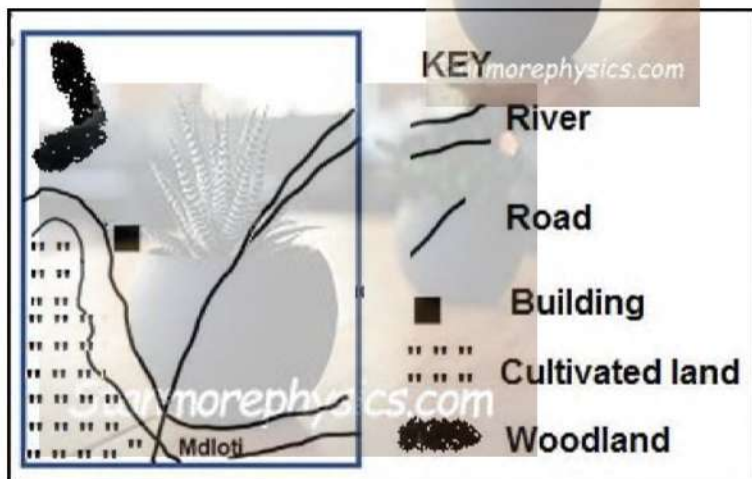
3.3. Explain the term remote sensing.

THE COLLECTION OF DATA FROM THE EARTH'S SURFACE WITHOUT BEING IN CONTACT WITH IT. (2×1) (2)

3.4. Explain how the Local municipality will use Remote sensing to monitor the negative impact or disasters in areas around their municipality.

- SATELLITES WILL CONTINUOSLY TAKE PHOTOS OF THE AFFECTED AREA AT DIFFERENT TIMES.
- PHOTOS FROM THE SATELLITES CAN BE USED TO ANALYS THE IMPACT OF THE AFFECTED AREA. (2×2) (4)

3.5. Refer to the block below representing D5 on the Topographical map.



3.5.1. Identify the following:

a. Man-made polygon (area) feature. (CULTIVATED LAND) (1×1) (1)

b. Natural line feature. (RIVER) (1×1) (1)

3.5.2. The two features from 3.5.1 represent (vector/raster) data and why? (2×1) (2)

VECTOR BECAUSE THEY USE POINTS, LINES AND POLYGONS TO REPRESENT THE REAL WORLD.

3.6. Explain the difference between spatial data and Attribute data.

SPATIAL DATA CAN BE SPECIFIED BY REFERRING TO GEOGRAPHIC LOCATION AND ATTRIBUTE DATA IS DESCRIBED IN WORDS, NUMBERS AND PICTURES. (2×2) (4)

[18]



TOTAL MARKS [60]

