LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

CAPRICORN NORTH
DISTRICT

GRADE 10

**GEOGRAPHY: PRE MAPWORK TASK
QUESTION PAPER
FEBRUARY 2025**

Learner's names:	
Class	

This Question paper consists of 07 pages including the cover page.

Resource material
- An extract from topographic map 2930CA Merrivale
- Orthophoto map 2930 CA 5 Merivale

Instructions and information

- Answer all questions in the spaces provided on this question paper.
- You are provided with 1:50 000 topographic map and an orthophoto map of a part of the mapped area.
- Show all calculations and use the formulae provided, where applicable. Marks will be allocated for these.
- Indicate the unit of measurement in the final answer of calculations e.g. 10km; 2.1m;West of True North.
- You may use a non-programmable calculator.
- You may a magnifying glass.
- The area demarcated in RED on the topographic map represents the area covered by the orthophoto map or the mapped area.

GENERAL INFORMATION ON MERRIVALE

Coordinates: 29°31'S; 30°14'E

Merrivale is a town in the Umgungundlovu District Municipality in KwaZulu-Natal. It is 145 km north-west of Durban and 5 km south-east of Howick.

Merrivale experiences warm wet summers and dry winter seasons. The temperatures between winter and summer range from 5 °C to 32 °C. The topography within the surroundings of Merrivale varies in elevation from 1 018 metres to 2 308,8 metres above sea level.

[Adapted from https://en.wikipedia.org/wiki/Merrivale]

1. Map skills and techniques.

1.1. Multiple choice questions

1.1.1. The contour interval of the orthophoto map is............. metres.

A. 5
B. 10
C. 15
D. 20

1.1.2. Distance between number 6 and 7 on the orthophoto map is…….....metres using a line scale.

A. 200
B. 400
C. 600
D. 800

1.1.3. The name of the contour line marked G in block D3 on the topographic map is…………….

A. Contour interval
B. Contour index
C. Benchmark
D. Spot height

1.1.4. The type of scales evident on the topographic map of Merrivale.

(i) Ratio
(ii) Word
(iii) Fraction
(iv) Line

A. (i) and (iii)
B. (i) and (iv)
C. (ii) and (iii)
D. (ii) and (iv)   (4x1) (4)

1.2. Find the co-ordinates of a reservoir in block B3 on the topographic map.

(a) 29^0 32'_____" S   (1x1) (1)
(b) 30^0 _____' 23" E   (1x1) (1)

1.3. Identify the feature found in following co-ordinates $29^034'11"$ S and $30^013'32"$ E.

_____(1x2) (2)

1.4. Refer to letter H in block B1 and letter F in block D2 and answer the questions that follows.

1.4.1. Find the true bearing of Letter F from Letter H.

_____(1x2) (2)

Please turn over

4

1.4.2. Find the current magnetic declination of Merrivale topographic map.
Given: Difference in years= 2024-2016=8years
Mean annual change= 9' westwards

_____
_____
_____(3x1) (3)

1.4.3. Using the information for question 1.4.1. and 1.4.2 calculate the present magnetic bearing between Letter F and H on the topographic map.

_____
_____
_____(2x1) (2)

1.5.   Calculate the gradient between spot height 1388 in block D4 and spot height 1152 in block D5.

_____
_____
_____
_____
_____
_____(5x1) (5)

[20]

2. Map interpretation.

2.1.   Multiple choice

2.1.1. The type of river labelled H in block B1 on the topographic map is…..river.
A. Non-perennial
B. Exotic
C. Seasons
D. Perennial

2.1.2. The feature used to pump water from underground in block B4 on the topographic map.
A. Communication tower
B. Furrow
C. Windpump
D. Monument

2.1.3. The type of road that passes through blocks C1 to Block A5 on the topographic map is……
A. National freeway
B. Mian road
C. Arterial road
D. Secondary road

Please turn over

5

2.1.4. How many kilometres to Pietermaritzburg using the national freeway in Block A5 in kilometres.

A. 14
B. 15
C. 16
D. 17

(4x1) (4)

2.2. Refer to Block C4 on topographic map.
2.2.1. In which general direction is the river flowing to?

_____(1x2) (2)

2.2.2. Give a reason for your answer in QUESTION 2.2.1.

_____
_____(1x2) (2)

2.3. Refer to the orthophoto map.
2.3.1. Provide ONE piece of evidence from the orthophoto map to prove that agriculture is taking place in the area.

_____
_____(1x2) (2)

2.3.2. Describe TWO factors that favours agriculture on the area covered by the orthophoto.

_____
_____
_____
_____(2x2) (4)

2.3.3. Discuss TWO impacts of global warming on agriculture on the area covered by the orthophoto map.

_____
_____
_____
_____(2x2) (4)

2.3.4. What role does the row of trees play in this area covered by orthophoto (Farm).

_____
_____
_____(1x2) (2)

2.4. Block B3 and B4 on the topographic map is gentle area. Give ONE piece of evidence from the map to support this statement.

_____
_____(1x2) (2)

2.5. Describe the main factor that affects the temperature of Merrivale.

_____
_____(1x2) (2)

[24]

Please turn over

3. Geographical information System

3.1. Refer to the diagram below on components of GIS.

3.1.1. Define the concept *GIS*.

_____

_____(1x2) (2)

3.1.2. State ONE use of *GIS*.

_____(1x1) (1)

3.1.3. State the role played by people on *GIS*.

_____(1x1) (1)

3.1.4. Describe TWO reasons why *GIS* was developed.

_____

_____

_____

_____

_____(2x2) (4)

3.2.   Refer to the photograph below and answer the questions that follow.

3.2.1. Identify the remote sensing device in the photograph.

_____(1x1) (1)

3.2.2. Where do we find the remote sensing device mentioned in QUESTION 3.2.1.

_____(1x1) (1)

3.2.3. Define the term *remote sensing*.

_____

_____(1x2) (2)

3.2.4. Discuss TWO advantages of remote sensing when collecting Data.

_____

_____

_____

_____

_____(2x2) (4)

[16]

The end.

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GRADE 10

GEOGRAPHY: PRE MAPWORK

TASK MARKING

This Marking guideline consists of 07 pages including the cover page.

2

Resource material

- An extract from topographic map 2930CA Merrivale
- Orthophoto map 2930 CA 5 Merivale

Instructions and information

- Answer all questions in the spaces provided on this question paper.
- You are provided with 1:50 000 topographic map and an orthophoto map of a part of the mapped area.
- Show all calculations and use the formulae provided, where applicable. Marks will be allocated for these.
- Indicate the unit of measurement in the final answer of calculations e.g. 10km; 2.1m;West of True North.
- You may use a non-programmable calculator.
- You may a magnifying glass.
- The area demarcated in RED on the topographic map represents the area covered by the orthophoto map or the mapped area.

3

1. Map skills and techniques.

1.1.   Multiple choice questions

1.1.1. The contour interval of the orthophoto map is............. metres.

A. 5

B. 10

C. 15

D. 20

A

1.1.2. Distance between number 6 and 7 on the orthophoto map is…......metres using a line scale.

A. 200

B. 400

C. 600

D. 800

D

1.1.3. The name of the contour line marked G in block D3 on the topographic map is…………….

A. Contour interval

B. Contour index

C. Benchmark

D. Spot height

B

1.1.4. The type of scales evident on the topographic map of Merrivale.

(i)   Ratio

(ii)   Word

(iii)   Fraction

(iv)   Line

A. (i) and (iii)

B. (i) and (iv)

C. (ii) and (iii)

D. (ii) and (iv)

B

(4x1) (4)

1.2.   Find the co-ordinates of a reservoir in block B3 on the topographic map.

(a) 29^0 32' **28"**✓ S   (1x1) (1)

(b) 30^0 **12'**✓ 23" E   (1x1) (1)

1.3.   Identify the feature found in following co-ordinates $29^034'11"$ S and $30^013'32"$ E.

   Dam wall/dam (1x2) (2)

1.4.   Refer to letter H in block B1 and letter F in block D2 and answer the questions that follows.

1.4.1. Find the true bearing of Letter F from Letter H.

   139^0 ✓ (1x2) (2)

4

1.4.2. Find the current magnetic declination of Merrivale topographic map.

Given: Difference in years= 2024-2016=8years
          Mean annual change= 9' westwards

Answers: total change= 8 x 9'w = 72' w = **1⁰ 12'**✓westwards

Current magnetic declination: 24^0 42' +✓ 1^0 12' = **25⁰ 54' WTN**✓ (3x1) (3)

1.4.3. Using the information for question 1.4.1. and 1.4.2 calculate the present magnetic bearing between Letter F and H on the topographic map.

MB= TB + MD

   = **139⁰ + 25⁰ 54'**✓

   = **164⁰ 54'**✓ (2x1) (2)

1.5. Calculate the gradient between spot height 1388 in block D4 and spot height 1152 in block D5.

H= 1388 – 1152 = 236✓ m

D= 4.7✓cm x 500= 2350✓m

Gradient = $\frac{236}{2350}$ ✓

   =1: 9.96✓ (5x1) (5)

                                                      [20]

2. Map interpretation.

2.1.   Multiple choice

2.1.1. The type of river labelled H in block B1 on the topographic map is…..river.
A. Non-perennial
B. Exotic | D |
C. Seasons
D. Perennial

2.1.2. The feature used to pump water from underground in block B4 on the topographic map.
A. Communication tower
B. Furrow | C |
C. Windpump
D. Monument

2.1.3. The type of road that passes through blocks C1 to Block A5 on the topographic map is……
A. National freeway
B. Mian road | B |
C. Arterial road
D. Secondary road

2.1.4. How many kilometres to Pietermaritzburg using the national freeway in Block A5 in kilometres.

A. 14
B. 15
C. 16
D. 17

A

(4x1) (4)

2.2. Refer to Block C4 on topographic map.

2.2.1. In which general direction is the river flowing to?
North (1x2) (2)

2.2.2. Give a reason for your answer in QUESTION 2.2.1.
Dam wall is facing north direction/height decrease towards north of the block./positioning of the dam wall.(1x2) (2)

2.3. Refer to the orthophoto map.

2.3.1. Provide ONE piece of evidence from the orthophoto map to prove that agriculture is taking place in the area.
Cultivated lands (1x2) (2)

2.3.2. Describe TWO factors that favours agriculture on the area covered by the orthophoto.
Gentle slopes
Availability of water (2x2) (4)

2.3.3. Discuss TWO impacts that global warming can have on agriculture on the area covered by the orthophoto map.
Global warming reduces yields because crops speed through their development, producing less grain in the process.
Higher temperature interfere with the ability of plants to get and use moisture.
Global warming accelerates evaporation from soil and plants increases transpiration that loose more moisture from their leaves.
(ANY TWO) (2x2) (4)

2.3.4. What role does the row of trees play in this area covered by orthophoto (Farm).
Act as a fence.
Helps to protect crops from strong prevailing winds. (1x2) (2)

2.4. Block B3 and B4 on the topographic map is gentle area. Give ONE piece of evidence from the map to support this statement.
Contour lines are far apart from each other. (1x2) (2)

2.5. Describe the main factor that affects the temperature of Merrivale.
Distance from the ocean/ocean currents (1x2) (2)

[24]

3. Geographical information System

3.1. Refer to the diagram below on components of GIS.

3.1.1. Define the concept *GIS*.
   Is a computer programme which allows users to work, manipulate and display geographical data in different ways. (concept) (1x2) (2)

3.1.2. State ONE use of *GIS*.
   It serves as a management tool that enables people to make better and informed decisions.
   Can be used to investigate complex data to identify trends, patterns and relationships. (1x1) (1)

3.1.3. State the role played by people on *GIS*.
   People collect the data/manipulate and process information/develop GIS programmes and capture data.(1x1) (1)

3.1.4. Describe TWO reasons why *GIS* was developed.
   To process geographical data
   To produce information that can be used for decision marking (2x2) (4)

3.2. Refer to the photograph below and answer the questions that follow.

Please turn over

3.2.1. Identify the remote sensing device in the photograph.
Satellite (1x1) (1)

3.2.2. Where do we find the remote sensing device mentioned in QUESTION 3.2.1.
Space (1x1) (1)

3.2.3. Define the term *remote sensing*.
Involves capturing data of objects on earth from a distance. (1x2) (2)

3.2.4. Discuss TWO advantages of remote sensing when collecting Data.
Data can be collected for dangerous and inaccessible areas.
Large areas can be captured as images.
Can be available at short notice especially in times of disaster management.
It can be used to track changes and development in an area over time. (ANY TWO)(2x2) (4)

[16]

The end……….