

Grade 10 Mapwork Task



education

Department of  
Education  
FREE STATE PROVINCE

## GEOGRAPHY

### PRACTICAL TASK



**GRADE 10**

**MARKS: 60**

**TIME: 1 HOUR**

**LEARNER'S NAME:** \_\_\_\_\_

MARK SCORED	Q1	Q2	Q3		TOTAL
MARKER					
MODERATOR					
TOTAL	20	24	16		60

This MAP WORK TASK consists of 8 pages.

## RESOURCE MATERIAL

1. An extract of an ALL INCLUSIVE topographical map and orthophoto map (2527CA RUSTENBURG WEST; 2527 CA 15 TLABANE)  
NOTE: The resource material must be collected by the schools for their own use.

## INSTRUCTIONS AND INFORMATION

1. Fill in your SURNAME AND INITIALS in the spaces provided on the cover page.
2. Answer ALL the questions in the spaces provided in this question paper.
3. You are supplied with an ALL INCLUSIVE topographical map and orthophoto
4. map of a part of the mapped area.
5. You must hand in the map to the invigilator at the end of this examination session.
6. Show ALL calculations. Marks will be allocated for calculations.
7. You may use a non-programmable calculator.



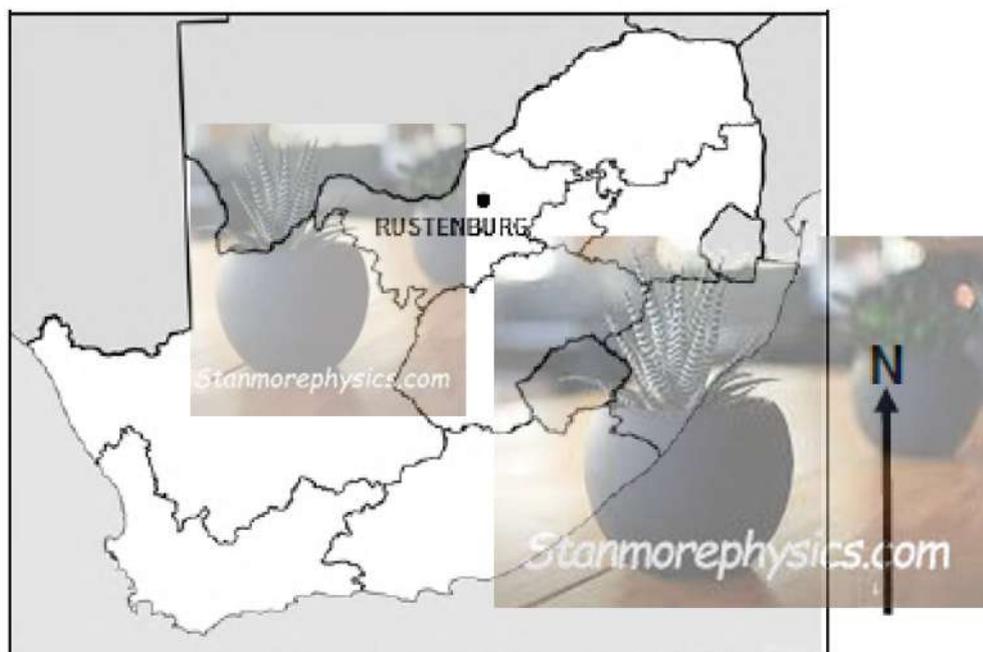
### GENERAL INFORMATION ON RUSTENBURG

Rustenburg was established in 1851 as a central place town to support a fertile farming area producing citrus fruit, tobacco, peanuts, sunflower seeds, maize, wheat and cattle. The area became a primary agricultural region with vast citrus estates due to the favourable climate.

Rustenburg is home to the two largest platinum mines in the world and the world's largest platinum refinery, which processes around 70% of the world's platinum.

Lately, the vast citrus estates in the region have been in constant decline due to pollution from increased smelting and beneficiating processes by the mines. (Beneficiation is when value is added to the raw materials.)

Rustenburg has a temperate climate. It has very warm summers and mild winters. Due to the altitude, summers are not quite as hot as one might expect. Precipitation occurs mainly in summer.



[Source: <http://en.wikipedia.org/wiki/rustenburg>]

#### QUESTION 1: MAP SKILLS AND CALCULATIONS:

1.1 The questions below are based on the 1:50 000 topographical map 2527CA, as well as the orthophoto map 2527 CA 15 as part of the mapped area. Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A–D) in the block next to each question.

1.1.1 Rustenburg is situated ...

- A Gauteng
- B Limpopo
- C The North west
- D The Free State

1.1.2 The contour interval on the orthophoto map is ... metres

- A 5
  - B 10
  - C 20
  - D 25
- 

1.1.3 The number **2527** on the topographic map represents...

- A Longitude and latitude
- B Latitude and longitude
- C Equator and longitude
- D Longitude and meridian

1.1.4 What type of scale is 1: 10 000

- A Line scale
- B Word scale
- C Ratio scale
- D Time scale

(1x4) (4)

1.2 Calculations:

Refer to the topographic map.



1.2.1 Map reference, draw a diagram to show the position of **2527CA**.

(4x1) (4)

1.2.2 The map index directly north-west of Rustenburg **2527CA**.

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(1x2) (2)

1.2.3 Determine the true bearing from point **M** in block **B5** to point **N** in block **A5**.

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(1x2) (2)

1.2.4 Determine the magnetic bearing for the current year from point **M** in block **B5** to point **N** in block **A5**, if the magnetic declination is 17°56' west of true north.

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(4x1) (4)

Refer to the topographic map, block **D6**.

1.2.5 Find the coordinates of the spot-height 1271.

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(1x2) (2)

1.2.6 Calculate the straight line distance of the secondary road in block **B9** in meters.

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(1x2) (2)

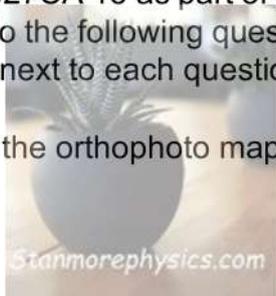
**[20]**

**QUESTION 2: MAP INTERPRETATION:**

2.1 The questions below are based on the 1:50 000 topographical map 2527CA, as well as the orthophoto map 2527CA 15 as part of the mapped area. Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A–D) in the block next to each question.

2.1.1 The feature at **2** on the orthophoto map is a/an ...

- A Industry
- B Mall
- C School
- D Station




2.1.2 The type of the river passing in block **J3** is ...

- A Pan
- B Perennial river
- C Lake
- D Non-perennial river

2.1.3 The contour interval on the topographic is ... meters.

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

2.1.4 The road passing in block **J10** is a ...

- A Main road
- B Secondary road

- C National route
- D Other road



2.2 Climate:



2.2.1 The climate of Rustenburg is mainly influenced by.

\_\_\_\_\_

(1X2) (2)

2.2.2 Which season mostly Rustenburg receive high volumes of rainfall?

\_\_\_\_\_

(1X2) (2)

2.2.3 What is the use of the dam in block C4?

\_\_\_\_\_

(1X2) (2)

2.2.4 Rustenburg receive seasonal rainfall, provide TWO pieces of evidence from the topographic map.

\_\_\_\_\_

(2X2) (4)  
[10]



2.3 Geomorphology:

Refer to the topographic map.

2.3.1 What is the height of the trigonometrical beacon 29 in block C7?

\_\_\_\_\_

(1x1) (1)

2.3.2 Choose one word from the bracket to make the statement correct.  
When contour lines are far away from each other the slope is (gentle/steep)

\_\_\_\_\_

(1x1) (1)

2.3.3 Provide TWO factors promoting crop farming in block D8.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(2x2) (4)

2.3.4 Identify TWO man made features in block F8

\_\_\_\_\_ (2x2)(4)

[10]  
[24]

**QUESTION 3: GEOGRAPHICAL INFORMATION SYSTEMS (GIS)**

3.1 Multiple choice questions:

3.1.1 Which of the below is an example of a vector data?

- A Topographic map
- B Orthophoto map
- C World map
- D Required map

3.1.2 ..... Is a component of GIS.

- A Data
- B People
- C Methods
- D All of the above



3.1.3 The abbreviation for **GIS** stand for .....

- A Geographical information system
- B Geographical informal service
- C Geographical in-service system
- D Geographical information service

(1x3) (3)

3.2 GIS Application and concepts:

3.2.1 Define the concept remote sensing.

\_\_\_\_\_  
\_\_\_\_\_ (1X1) (1)

3.2.2 State TWO advantage of remote sensing.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (2x2) (4)

3.2.3 Provide TWO reasons why GIS was developed.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(2x2) (4)

3.2.4 Refer to block **G2** on the topographic, state ONE of the following,

Line:

Point:

(2x2) (4)

[16]

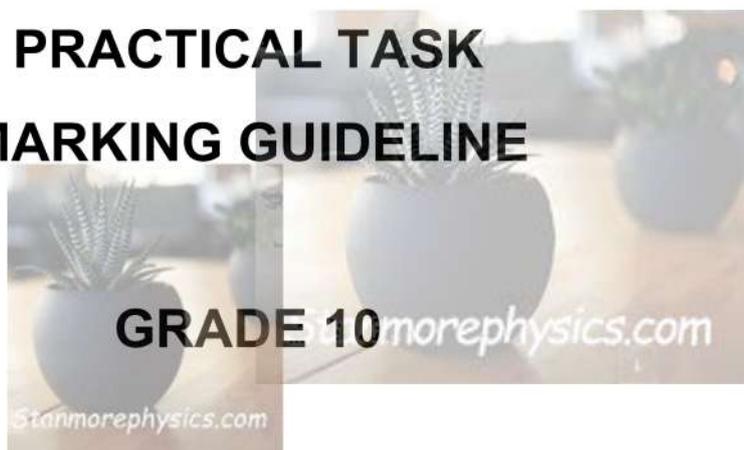
**TOTAL: 60**





## GEOGRAPHY

### PRACTICAL TASK MARKING GUIDELINE



**MARKS: 60**

**TIME: 1 HOUR**

## QUESTION 1: MAP SKILLS AND CALCULATIONS

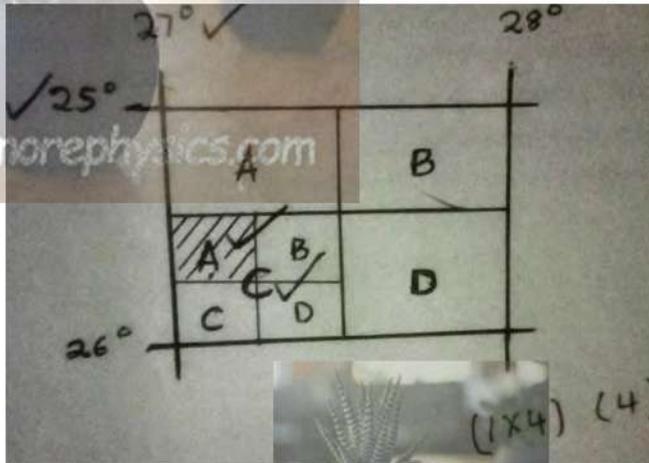
1.1.1 C✓

1.1.2 A✓

1.1.3 B✓

1.1.4 C✓

1.2.1



1.2.2 2526BD ✓✓

1.2.3 True bearing

$$= 180^\circ + 155^\circ \checkmark \text{ (Range } 151^\circ - 159^\circ)$$

$$= 335^\circ \checkmark$$

Range ( $331^\circ - 339^\circ$ )

1.2.4  $MB = TB + MD$

$$335^\circ \checkmark + 17^\circ 56' \checkmark$$

$$= 352^\circ 56' \checkmark \checkmark$$

1.2.5  $25^\circ 35' 36'' S \checkmark$   $27^\circ 10' 39'' E \checkmark$

1.2.6  $D = MDXMS$

$$4,2 \text{ cm} \times 500 \checkmark$$

$$= 2100 \text{ m} \checkmark$$

[20]

## QUESTION 2 :MAP INTERPRITATION

2.1.1 C ✓

2.1.2 D ✓

2.1.3 D ✓

2.1.4 C ✓

[4]

2.2.1 Altitude ✓ ✓

2.2.2 summer ✓ ✓

2.2.3 - To supply water to the surrounding settlement ✓ ✓

-To store during dry seasons ✓ ✓

{Any ONE}

2.2.4 - Many non-perennial rivers ✓ ✓

- Many reservoirs ✓ ✓

- Windpump ✓ ✓

- Many dams ✓ ✓

{Any TWO}



[10]

2.3.1 1233.5 m ✓

2.3.2 Gentle ✓

2.3.3 - Availability of water (dams, reservoir) ✓ ✓

- Cultivated land ✓ ✓

- Gentle slope /flat land ✓ ✓

{Any TWO}

2.3.4 - Power line ✓ ✓

- Built up area ✓ ✓

-Track and hiking trail ✓ ✓

- School ✓ ✓

- Reservoir ✓ ✓

{Any TWO}

[10]

Question 3: GIS

3.1.1 A ✓

3.1.2 D ✓

3.1.3 A ✓

3.2.1 Gathering of the information about the earth's surface without actual contact with it ✓

3.2.2 - Easy collection of data ✓ ✓

- Cheaper and fast method of collecting data ✓ ✓

- Can access inaccessible areas ✓ ✓

- Allows coverage of very large areas ✓ ✓

{Any TWO}

3.2.5 - It is easy to use ✓ ✓

- Captures, stores, analyse and manipulates information faster ✓ ✓

- It is cheaper ✓ ✓

- It is used for planning and development ✓ ✓

{Any TWO}

3.2.6 Line feature : road ✓ ✓ , contour lines ✓ ✓ , power line ✓ ✓ , hiking trail ✓ ✓

Point feature: reservoir ✓ ✓ , buildings ✓ ✓ , spot height 1241, ✓ ✓

{Any ONE}

