

HILLCREST HIGH SCHOOL

GRADE 12
GEOGRAPHY PAPER II
MAY 2019

TIME : 90 minutes
EXAMINER : CM Girvin Esq.

MARKS : 75

NAME _____

RESOURCE MATERIAL

1. An extract from the topographical map 262CD PARYS
2. Orthophoto map 2627CD 19 PARYS

INSTRUCTIONS AND INFORMATION

1. **WRITE YOUR NAME IN THE SPACE AT THE TOP OF THIS PAGE**
2. Answer all the questions in the spaces provided in the question paper
3. **SHOW ALL CALCULATIONS AND FORMULAE**, where applicable. Marks have been allocated for these
4. Indicate the unit of measurement in the final answer of calculations
5. You may use a non - programmable calculator
6. The following English terms and their Afrikaans translations are shown on the topographical map

ENGLISH

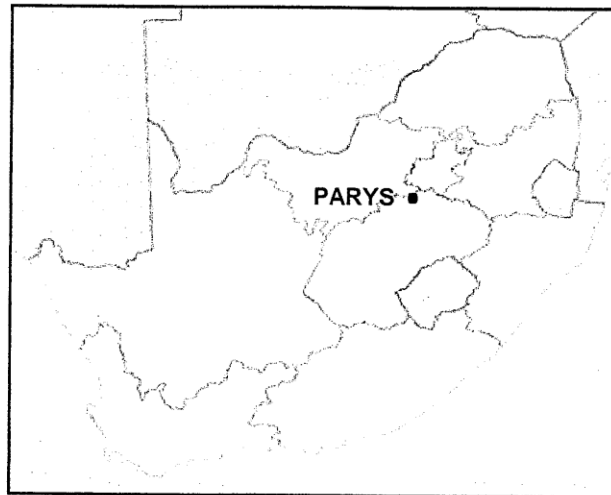
Aerodrome
Caravan Park
Diggings
Golf Course
Gap
Holiday Resort
Island
Purification Plant
River
Sewage Works

AFRIKAANS

Vliegveld
Karavaanpark
Uitgrawings
Gholfbaan
Poort
Vakansieoord
Eiland
Watersuiweringsaanleg
Rivier
Rioolwerke

GENERAL INFORMATION ON PARYS

Parys is a town in the Free State in South Africa. It is located on the banks of the Vaal River approximately 115 km south of Johannesburg. The completion of the railway line to Parys in 1905 suddenly made Parys more accessible to the public and this, in turn, led to the growth of the town as a holiday resort and industrial centre. Many artists have settled in the town and the variety of new, interesting shops and attractions make it the ideal breakaway from Gauteng and other big centres. Parys lies within the Vredefort Dome World Heritage Site. The Vredefort Crater is the largest verified impact crater on Earth. The Vredefort Dome was added to the list of UNESCO World Heritage Sites for its geological interest.



Coordinates: 26°54'S 27°27'E

[Adapted from http://en.wikipedia.org/wiki/Parys,_South_Africa,_Freestate]

1. MULTIPLE CHOICE QUESTIONS

In the questions below, you only need to **CIRCLE** the most correct answer from the options given

- 1.1 The major industrial region that is closest to Parys is the _____ region
A Port Elizabeth – Uitenhage B Durban – Pinetown
C Western Cape D Pretoria – Witwatersrand
- 1.2 The topographical map northwest of Parys is situated between the following lines of Latitude
A 27° 00'S and 27° 15'S B 26° 30'S and 26° 45'S
C 26° 00'S and 27° 00'S D 26° 15'S and 26° 30'S
- 1.3 The height of the index (bold) contour line in block D5 is _____ m
A 1 500 B 1 400
C 1 600 D 1 530
- 1.4 A human factor limiting further expansion of Parys in a NW direction is the
A permanent river B international boundary
C provincial boundary D steep gradient
- 1.5 The wind pump K in block I 2 is situated next to the river because the area has a _____ water table
A high dry season B high wet season
C low dry season D low wet season
- 1.6 The feature at 26° 49' 48"S and 27° 21' 54"E / 26° 49,8'S and 27° 21,9'E is
A a hiking trail B perennial water
C cultivated land D a secondary road
- 1.7 The location of the woodlands in block ^{A9}~~D9~~ was influenced by the
A katabatic flow B anabatic flow
C thermal belt D aspect of the slope
- 1.8 The section of the Vaal River shown on the map demonstrates characteristics of the
A middle and lower courses B upper course only
C upper and lower courses D lower course only
- 1.9 The landform at line 4 on the orthophoto map is a
A spur B valley
C ridge D gap/ poort
- 1.10 The plots of land in block F9 have a long and narrow (elongated) shape. The most important reason for this shape is to have access to
A water B fertile soil
C flat land D fuel

- 1.11 The road at 3 on the orthophoto map is
 A another road
 B an arterial route
 C a secondary road
 D a main road
- 1.12 The cultivated land at 5 on the orthophoto map can be identified by its
 A darker tone
 B smooth texture
 C shadow
 D shape
- 1.13 Refer to the area surrounding 15 on the orthophoto map. The vertical aerial photograph used to produce the orthophoto map was taken between
 A 12h00 and 14h00
 B 14h00 and 16h00
 C 10h00 and 12h00
 D 08h00 and 10h00
- 1.14 The settlement pattern at L in block D2 is
 A circular
 B linear
 C clustered
 D dispersed
- 1.15 The natural water purification feature in blocks J2 and J3 is a
 A wind pump
 B cultivated land
 C marsh and vlei
 D excavation

[15]

2. MAP CALCULATIONS AND TECHNIQUES

- 2.1.1 Refer to blocks D3 and E3. Calculate the gradient between M and spot height 1395. Use the formula

$$\text{GRADIENT} = \frac{\text{VERTICAL DIFFERENCE IN HEIGHT (VD) (VERTICAL INTERVAL VI)}}{\text{HORIZONTAL DISTANCE (HD) (HORIZONTAL EQUIVALENT (HE))}}$$

(5)

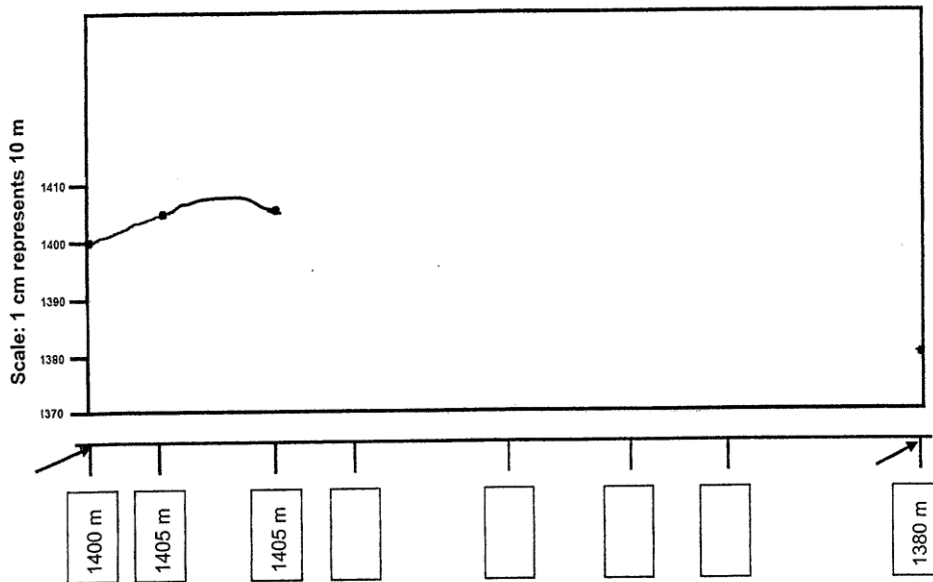
- 2.1.2 Would the gradient you calculated in 2.1.1 result in a high or low stream velocity? Give a reason for your answer

Answer _____

Reason _____

(2)

2.2 Refer to the line between 6 and 7 on the orthophoto map



2.2.1 Use the marked off points below the horizontal axis of the cross – section to complete the cross section between 6 and 7. Some heights have been included to assist you (4)

2.2.2 Indicate the position of the farmstead on the farm Pelgrimsrus on your completed cross – section (1)

2.2.3 Calculate the vertical exaggeration of the cross – section you drew in 2.2.1. Use the Formula

$$\text{VERTICAL EXAGGERATION} = \text{VERTICAL SCALE (VS)} / \text{HORIZONTAL SCALE (HS)}$$

(4)

2.3.1 Calculate the magnetic declination for this map in 2019

(3)

2.3.2 Why is it important for a hiker to correct the magnetic declination?

(1)
[20]

3. APPLICATION AND INTERPRETATION

3.1 Refer to blocks E4 and F3

3.1.1 Name the drainage pattern in this area

(1)

3.1.2 Refer to the topographical map and explain why this drainage pattern (3.1.1) developed

(2)

3.1.3 Is the drainage density of this area high or low? Give a reason for your answer

Drainage density _____

Reason _____

1 + 2 = (3)

- 3.2 Refer to the farmstead at O in block G2
- 3.2.1 Is the farmstead at O a wet – point settlement or a dry – point settlement?
Give a reason for your answer
- Answer _____
- Reason _____
- _____
- _____ 1 + 2 = (3)
- 3.2.2 Name and explain **ONE HUMAN** factor that influenced the choice of site for the farmstead
- Factor _____
- Explanation _____
- _____
- _____ 1 + 2 = (3)
- 3.3 The area on the outskirts of a settlement is called the rural – urban fringe because it marks the transition zone between an urban and a rural area. The rural – urban fringe of Parys is in blocks G9 and G10
- 3.3.1 Name **ONE** activity/ service in block G9 or G10 that is found on the rural – urban fringe
- _____ (1)
- 3.3.2 Explain why you think this activity/ service is located there
- _____
- _____ (2)
- 3.4 Although West End (W) in block H7 is situated close to the CBD, it experiences much lower average temperatures that one might expect
- 3.4.1 Why does West End experience these lower temperatures?
- _____ (1)

3.4.2 Explain why the factor you identified in 3.4.1 causes lower temperatures

(2)

3.4.3 Describe **ONE** climatological disadvantage for people living in West End

(2)

3.5 The mapped area receives seasonal rainfall. State **TWO** pieces of evidence from the topographical map to substantiate (support) this statement

(2)

3.6 Parys is a popular holiday resort

3.6.1 Give **ONE** reason why Parys has become a popular holiday destination

(1)

3.6.2 Explain the positive impact of Parys as a popular holiday destination on the local economy

(2)
[25]

4. GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

4.1 Parys is located in the Vredefort Crater, a geological feature of great significance. Geologists are conducting research and collecting data there on an ongoing basis

4.1.1 Is the data they are collecting considered to be primary or secondary data?

_____ (1)

4.1.2 Give a reason for your answer in 4.1.1

_____ (2)

4.1.3 Explain how remote sensing could further assist the geologists in their search

_____ 2 X 2 = (4)

4.2 Refer to block J8. Buffering plays an important role in protecting settlements from being flooded

4.2.1 Define the term **BUFFERING**

_____ (1)

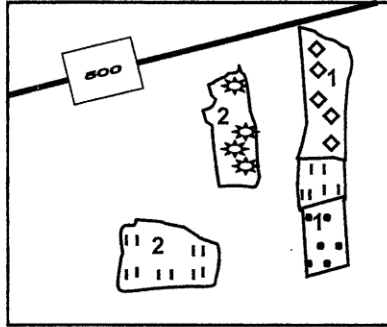
4.2.2 There is no evidence of buffering taking place between the Vaal River and Parys in blocks G7 and G8. Give a reason from the topographical map to support this statement

_____ (2)

4.2.3 Explain why no buffering takes place between the Vaal River and Parys in blocks G7 and G8

_____ (2)

- 4.3 Refer to the rough sketch below, an exaggerated version of block F8 on the topographical map. It is not drawn to scale!



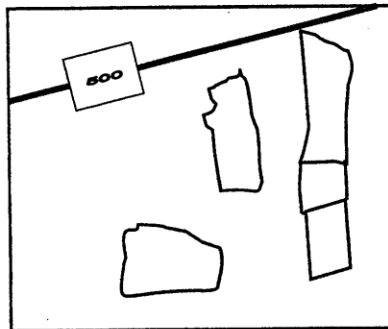
Reference:

- 1 – Orchards and vineyards
- 2 – Cultivated lands

- 4.3.1 Data standardisation is **NOT** taking place on this sketch. Give **ONE** reason to support this statement

(1)

- 4.3.2 Standardise the data shown on the previous sketch on the sketch below. Use the acceptable standardised conventional signs (map symbols) for a 1 : 50 000 topographical map to do so



(2)
[15]

TOTAL : 75