

HILLCREST HIGH SCHOOL
GRADE 10
GEOGRAPHY PAPER II
DECEMBER 2017

TIME : 90 minutes

MARKS : 100

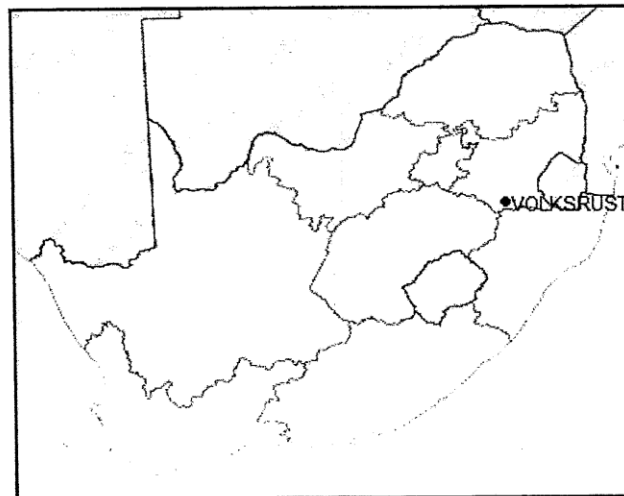
EXAMINER : Mr CM Girvin

INSTRUCTIONS

1. Answer all the questions in the spaces provided in this question paper
 2. All the questions are based on the topographical map **2729BD VOLKSRUST** and the orthophoto of a part of the mapped area
 3. Show all calculations as marks are allocated for these
-

GENERAL INFORMATION ON VOLKSRUST

Volksrust is a town in Mpumalanga on the border of KwaZulu-Natal. It is located 240 km southeast of Johannesburg. The town has important beef, dairy, maize, sorghum, wool and sunflower seed industries. Volksrust has an average annual rainfall of 648 mm, with the lowest rainfall (1 mm) in July and the highest rainfall (117 mm) in January. Most of the rain falls in the summer. The average midday temperatures for Volksrust range from 15,9 °C in June to 24,3 °C in January. June is the coldest period when the mercury can drop to an average of 0,5 °C during the night.



[Source: Examiner's map]

FIGURE 1

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

ENGLISH

Aerodrome
Diggings
Furrow
Golf Course
Rifle Range
River
Sawmills
Sewerage Works
Silos

AFRIKAANS

Vliegveld
Uitgrawings
Voor
Gholfbaan
Skietbaan
Rivier
Saagmeule
Rioolwerke
Graansuiers

QUESTION 1 : MULTIPLE CHOICE

Various options are provided as possible answers to the questions below. Choose the correct answer and **CIRCLE IT CLEARLY**

- 1.1 The map reference of the topographical map east of Volksrust is
 A 2729BB B 2730AC
 C 2729DB D 2930AB
- 1.2 The height of the dam wall in block H8 is approximately _____ m
 A 1 630 B 1 640
 C 1 650 D 1 660
- 1.3 The Slang River that flows across the map is a/an _____ river
 A perennial/ permanent B non - perennial/ periodic
 C episodic D exotic
- 1.4 The slope from spot height 1606 (M in block I6) to N in block I7 on the topographical map is a _____ slope
 A convex B terrace
 C gentle D concave
- 1.5 The feature at 4 on the orthophoto map is a/an
 A rugby field B tennis court
 C purification plant D open parking area
- 1.6 If you follow the N11 in a southerly direction, you will cross the provincial border into
 A KwaZulu - Natal B Limpopo
 C Gauteng D the Free State

- 1.7 The feature causing environmental problems at 3 on the orthophoto map is
A agriculture B river erosion
C excavations D industrialisation
- 1.8 The type of farming at $27^{\circ} 24' 30''\text{S}$ $29^{\circ} 53' 30''\text{E}$ is
A plantation B crop
C dairy D fruit
- 1.9 The true bearing of 2 in the centre of the sewage works from trigonometrical Station 152 at point 1 on the orthophotograph is
A 127° B 242°
C 50° D 66°
- 1.10 An aerial photograph which shows contour lines, spot heights, trigonometrical stations and other labelled features is a/an
A oblique aerial photograph B topographical map
C orthophoto map D vertical aerial photograph
- 10 X 2 = [20]

QUESTION 2 : MAP SKILLS

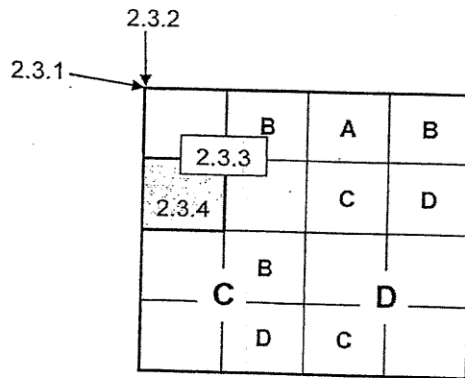
- 2.1 Refer to the topographical map. Calculate the area of the space that is labelled 'Area of Orthophoto Map' in km^2 . **SHOW ALL YOUR CALCULATIONS**

(4)

2.2 Calculate the gradient of the slope from .1927 in block H7 to .1634 in block H6.
SHOW ALL YOUR CALCULATIONS

(6)

2.3 Use the grid below to explain the index number **2729BD VOLKSRUST** on the topographical map (**NOTE THAT THE AREAS THE QUESTIONS REFER TO ARE LABELLED ON THE DIAGRAM**)



Identify each of the following in the grid above

2.3.1 The line of latitude _____

2.3.2 The line of longitude _____

2.3.3 The big block letter _____

2.3.4 The small block letter _____ (4)

2.4 In which general direction would you be travelling if you went from Volksrust to Wakkerstroom by train?

_____ (1)

2.5 Refer to the line of trees in blocks I2 and J2

2.5.1 Measure the approximate length of this line of trees in meters

_____ (2)

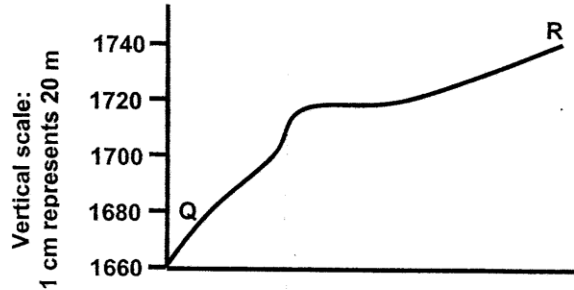
2.5.2 State the approximate difference in height between the southern and northern edges of this line of trees

_____ (2)

2.6 How long would it take a train travelling at 30km/h to travel from Volksrust station to Vooruitsig station (block A1)? **SHOW ALL YOUR CALCULATIONS**

_____ (3)

2.7 Refer to the cross – section from Q in block E7 to R in block D9 on the topographical map



2.7.1 Indicate the following features on the cross – section using the key indicated in brackets next to the feature
 (a) trigonometrical station 235 (T)
 (b) secondary road (S)
 (c) march and vlei (M) (3)

2.7.2 Give **ONE** reason why a person standing at Q will **NOT** be visible to a person standing at R

(1)

2.7.3 Calculate the vertical exaggeration of this cross section. **SHOW ALL YOUR CALCULATIONS.**

Formula : vertical exaggeration = vertical scale/ horizontal scale

(4)
[30]

3. INTERPRETATION

- 3.1 Give **TWO** pieces of evidence from the map to support the statement that Volksrust receives seasonal rainfall

2 X 2 = (4)

- 3.2 Identify and name

3.2.1 **TWO** economic activities in block H4 _____

(2)

3.2.2 a measure that has been taken to prevent the Slang River from flooding

(2)

- 3.3 Refer to the valley between spot height 1709 (block H9) and trigonometrical station 241 (block G10) on the topographical map. Why did the farmer select site V to grow his/ her crops?

(4)
[12]

4. PHOTOGRAPHS

- 4.1 State whether the following statements are **TRUE** or **FALSE**. If the statement is **FALSE**, you must **CORRECT IT**

4.1.1 Aerial photographs are only taken at midday

4.1.2 The scale of an orthophotograph is always constant

4.1.3 On a high oblique photograph, the horizon cannot be seen

4.1.4 An oblique photograph can also be regarded as a map

4.1.5 The contour interval on an orthophoto is 20m

2 X 5 = (10)

4.2 Refer to the photograph of a part of the Wild Coast below and then answer the questions



Figure 5.25 Much of the "Wild Coast" in Pondoland, Eastern Cape, is a marine protected area.

4.2.1 What **TYPE** of photograph is this?

_____ (2)

4.2.2 State **ONE ADVANTAGE OR ONE DISADVANTAGE** of this type of photograph

_____ (2)

4.2.3 State and explain **ONE** difference between this photograph and the orthophoto you have been given

_____ (4)
[18]

5. GEOGRAPHIC INFORMATION SYSTEMS (GIS)

5.1 Identify a polygon feature and a line feature in block I3 on the topographical map

Polygon feature _____

Line feature _____ (4)

5.2.1 Define the term **ATTRIBUTE DATA**

_____ (2)

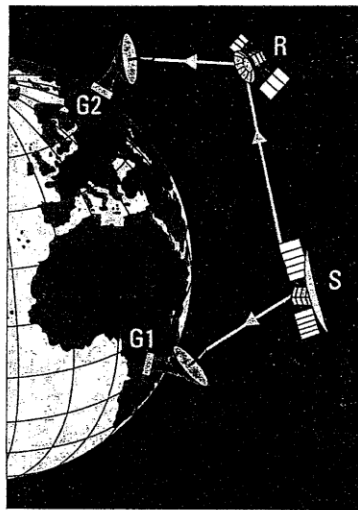
5.2.2 Name **ONE** attribute of the railway line in blocks C7 and C8

_____ (2)

- 5.3 GIS allows us to use thematic layers on maps. Refer to the topographical map and name **ONE** layer of information that was used when compiling the map of Volksrust

(2)

- 5.4 A lot of data in a GIS is obtained by using **REMOTE SENSING**. Refer to the diagram below and then answer the questions that follow



- 5.4.1 Provide suitable labels for the objects marked R/S and G1/G2

R/S _____

G1/G2 _____

(4)

5.4.2 The retrieval of data by R and S may be **ACTIVE** or **PASSIVE**. Explain the difference between these two methods of data retrieval

(4)

5.4.3 State **ONE** advantage of remote sensing as a method of obtaining data

(2)
[20]

TOTAL : 100