KZN - DEPARTMENT OF EDUCATION

GREENBURY SECONDARY SCHOOL

JUNE EXAMINATION 2017

GEOGRAPHY P2

pp10

GRADE: 11 **DATE:** 12/06/17
EXAMINER: D. RAMASAMI **TIME:** 1.5 HOURS
MODERATOR: R. RANGANATHAN **MARKS:** 75

NAME:

GRADE/ DIV:

EDUCATOR

QUESTION	CONTENT	MARKS
ONE	Multiple choice questions	15
TWO	Map calculations	20
THREE	Map and photo interpretation	25
FOUR	Geographical Information System	15

MARKS:

75

PTO: PAGE 2

INSTRUCTIONS AND INFORMATION

RESOURCE MATERIAL

1. An extract from topographical map 2729BD VOLKSRUST.
2. Orthophoto map 2729 BD 13 VOLKSRUST
3. **NOTE:** The resource material must be collected by schools for their own use.

INSTRUCTIONS AND INFORMATION

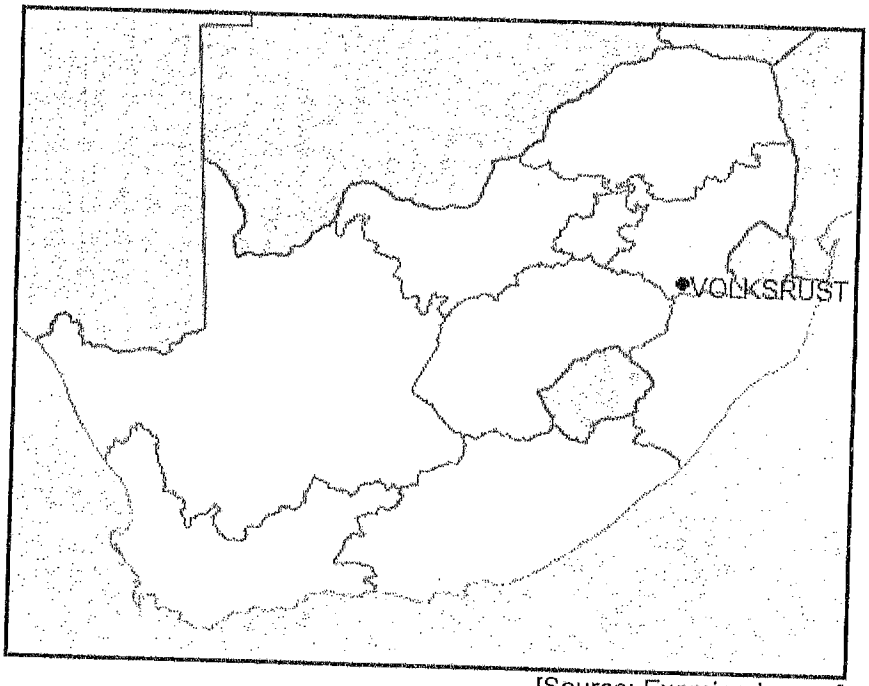
1. Write your name in full. and Educator's initials in the spaces on the cover page.
2. Answer ALL the questions in the spaces provided in this question paper.
3. You are provided with a 1 : 50 000 topographical map (2729BD VOLKSRUST) and an orthophoto map (2729 BD 13 VOLKSRUST) of a part of the mapped area.
4. You must hand the topographical map and the orthophoto map to the invigilator at the end of this examination session.
5. You may use the blank page at the end of this question paper for all rough work and calculations. Do NOT detach this page from the question paper.
6. Show ALL calculations and formulae, where applicable. Marks will be allocated for these.
7. Indicate the unit of measurement in the final answer of calculations.
8. You may use a non-programmable calculator.
9. The area demarcated in RED on the topographical map represents the area covered by the orthophoto map.
10. The following English terms and their Afrikaans translations are shown on the topographical map:

ENGLISH	AFRIKAANS
Aerodrome	Vliegveld
Diggings	Uitgrawings
Furrow	Voor
Golf Course	Gholfbaan
Rifle Range	Skietbaan
River	Rivier
Sawmills	Saagmeule
Sewerage Works	Rioolwerke
Silos	Graansuiers

PTO: PAGE 3

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

QUESTION ONE

MULTIPLE CHOICE QUESTIONS

The following questions are based on the 1:50 000 topographical map, as well as the orthophoto map. Various options are provided as possible answers to the following questions. Choose the answer and circle only the letter (A – D) of the correct answer.

1.1. The contour interval of the ORTHOPHOTO MAP map is …

A) 5M
B) 10M
C) 20M
D) 15M

_____

1.2. The map projection used on the topographical map is …

A) Gauss Conform Projection
B) Lamberts Projection
C) Mercator
D) Universal Transverse.

_____

1.3. The scale of the TOPOGRAPHIC map means that 1 cm on the map represents ..

A) 0,1 Km
B) 10 Km
C) 0,5 Km
D) 50 Km

_____

1.4. The method used to show height at X is a/an

A) Contour
B) Spot height
C) Trignometrical station
D) Bbenchmark

_____

1.5. Slope at Y on the topographic map is …..

A) Steep
B) Concave
C) Convex
D) Vertical

_____

PTO: PAGE 5

1.6. The transport route used to exit the town in a northerly direction is a/an ...

A) main road
B) arterial route
C) other road
D) national road

_____

1.7. Feature 1 on the orthophoto map is a/an

A) hill
B) mesa
C) plateau
D) basin

_____

1.8. The scale of the topographic map is ... than the scale of the orthophoto map

A) 5 times smaller
B) 5 times larger
C) 50 times smaller
D) 10 times larger

_____

1.9. The orthophoto map is an example of a/an ...aerial photograph.

A) Vertical
C) Oblique
C) High oblique
D) Low oblique

_____

1.10. The magnetic declination in 2017 will be ...

A) Smaller
B) Bigger
C) Same
D) None of the above .

_____

1.11. The magnetic bearing compared to the true bearing will be ...than the given magnetic declination

A) Greater
B) Smaller
C) Same
D) None of the above

_____

1.12. The direction of Y from P is ...

A) SW
B) NE
C) NW
D) SE

_____

PTO: PAGE 6

1.13. The main primary activity at P is …

A) Farming
B) Forestry
C) Mining
D) Orchards _____

1.14. The latitudinal position in the reference 2729 is ..

A) 29° S
B) 29° E
C) 27° S
D) 27° E _____

1.15. Volksrust is found in ….

A) Eastern Cape
B) Gauteng
C) Western Cape
D) Mpumalanga _____

(15 x 1) **[15]**

QUESTION TWO

MAP CALCULATIONS

2.1. Calculate the distance in metres, between Q (E7) and R (D9) on the topographic map.

_____
_____
_____
_____ (3)

2.2.1. Calculate the average gradient between M (I6) and trig beacon 241 in(G10).

_____
_____
_____
_____
_____
_____
_____
_____ (4)

PTO: PAGE 7

2.2.2. Interpret the gradient calculated in 2.2.1.

_____

_____ (2)

2.3. Calculate the true bearing of Q (E7) from R (D9).

_____ (3)

2.4. Calculate the magnetic bearing of the points in question 2.3 for 2010.

_____

_____

_____ (2)

2.5. Calculate the vertical exaggeration of a cross section drawn from the topographic map with a vertical scale of 0,5 cm represents 50m.

_____

_____

_____

_____

_____

_____

_____ (4)

2.6. Give one importance of calculating vertical exaggeration.

_____

_____ (2)

[20]

QUESTION 3

MAP AND PHOTO INTERPRETATION

3.1.1. Quote two pieces of evidence from the topographic map which suggests that Volksrust is not a good area for crop cultivation.

a)_____

b)_____ (4)

3.2. Refer to the topographic map and orthophoto map to answer the following questions:

3.2.1. State three agricultural products that Volksrust is famous for,

a) _____

b) _____

c) _____ (3)

3.2.2. Name two uses of the Mahamane dam in A5 and B5.

_____

_____ (2)

3.2.3. Name the following land uses/ feature

9 _____

7 _____

O _____

L _____

U _____ (10)

3.3.1. Identify the type of slope at N

_____ (2)

3.3.2. State the nearest town you will reach using rail transport in an easterly direction.

_____ (2)

3.3.3. Give a possible reason why people are living at T

_____

_____ (2)

[25]

QUESTION 4

GEOGRAPHICAL INFORMATION SYSTEM

4.1. State one advantage of GIS maps over normal paper maps?

_____ (2)

4.2. State two uses of GIS for management of natural disasters.

a)_____

_____

b)_____

_____ (4)

4.3. Define the following and give an example of each:

Spatial resolution _____

_____ (2)

Active remote sensing_____

_____ (2)

Raster Data _____

_____ (2)

Vector Data _____

_____ (2)

4.4. Name the device used in remote sensing.

_____ (1)

[15]

TOTAL = 75

GOOD LUCK

PTO: PAGE 10

ROUGH WORK

GREENBURY SECONDARY SCHOOL
DEPARTMENT OF HSS
H.O.D. MR D RAMASAMI
Ramasami
08/06/17

Geog P2 — Gr:11

1.1. A
1.2. A
1.3. C
1.4. A
1.5. D
1.6. D
1.7. A
1.8 A
1.9. A
1.10. B
1.11. A
1.12. (NE / ENE) B
1.13. A
1.14. C
1.15. D

2.1. Map Distance = 7cm ✓ (6,8 - 7,2)

Ground Distance = 7 ÷ 2km ✓

= 3,5km x 100cm (3,4 - 3,6)

= 3500m ✓ (3400 - 3600)

2.2.1. Gradient = VI : HE ✓

= 1885,5 - 1606 m : 16,4 ÷ 2 (16,2 - 16,6)

= 279,5 m ✓ : 8,2 km (8,1 - 8,3)

: 8200 m (8100 - 8300) ✓

= $\frac{279,5}{279,5}$: $\frac{8200}{279,5}$

= 1 : 29,34 (28,98 - 29,70) ✓

2.2.2. To rise one m from the starting point we have to walk 29,34 m. (accept interpretation based on answer for 2.2.1)

2.3. $180° + 60°$ ✓ = $240°$ ✓ (238° - 242°)

2.4. $240° + 20° 37'$ ✓

$260° 37'$ ✓ ($258° 37' - 262° 37'$)

2.5. Vertical Exaggeration = $\frac{\text{Vertical Scale}}{\text{Horizontal Scale}}$ ✓

$= \frac{0{,}5 \text{ cm rep } 50 \text{ m}}{1 : 50\,000}$ ✓

$= \frac{1 \text{ cm rep } 100 \text{ m}}{1 : 50\,000}$

$= \frac{1 : 10\,000}{1 : 50\,000}$ ✓

$= \frac{50\,000}{10\,000}$

= 5 times ✓

2.6 To identify special features and have a clear understanding of the real feature. //

3.1.1. a) Mountainous

b) Many non perennial rivers.

3.2.1. Beef ✓, dairy ✓, maize ✓, sorghum, wool, sunflower seed.

3.2.2. Recreation ✓

Water ✓

3.2.3. 4 - Power line //

7 - Golf course //

0 - ~~Powe~~ Railway Station / Siding //

L - Residential area / Built up area //

U - Row of trees //

3.3.1. Steep //

3.3.2. Wakkerstroom //

3.3.3. People work in the mills / forests //

4.1. Durable, stores a lot of information ✓

4.2 a) Identify the nature & extent of damage. ✓

b) Identify alternate routes to get to victims ✓

4.3. • Clarity in terms of size and shape ✓

• Sending out a signal and capturing the reflection ✓

• Data captured in form of pixels. ✓

• Datak captured by means of points, lines and polygons. ✓

4.4. Satellite ✓