

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

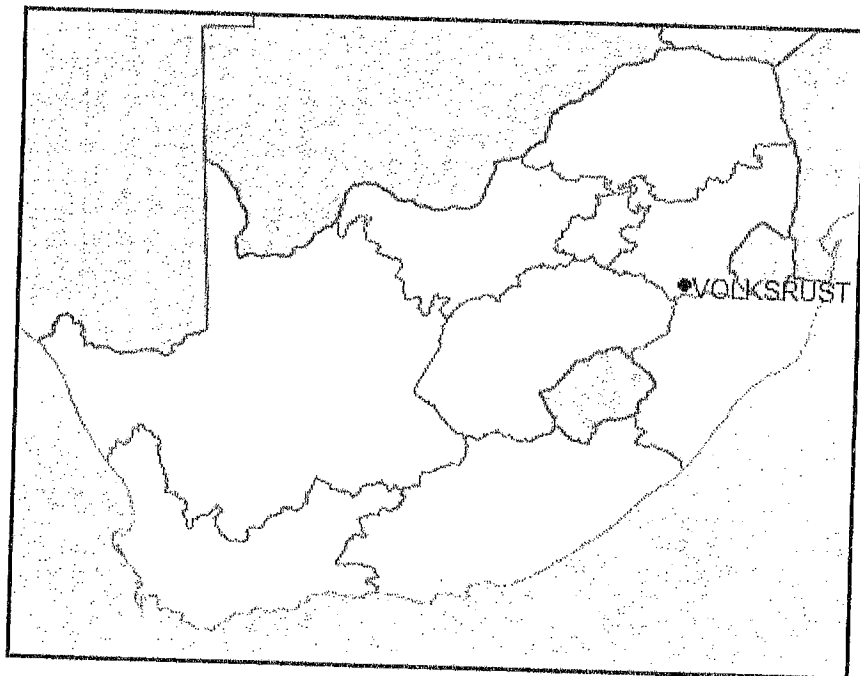
Aerodrome
Diggings
Furrow
Golf Course
Rifle Range
River
Sawmills
Sewerage Works
Silos

AFRIKAANS

Vliegveld
Uitgrawings
Voor
Gholfbaan
Skietbaan
Rivier
Saagmeule
Rioolwerke
Graansuiers

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) Trigonometrical station
 - D) Bbenchmark
-

1.5. Slope at Y on the topographic map is

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

- 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 _____

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)

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) _____
_____ (4)
b) _____
_____ (4)
- 4.3. Define the following and give an example of each:
Spatial resolution _____ (2)
_____ (2)
Active remote sensing _____ (2)
_____ (2)
Raster Data _____ (2)
_____ (2)
Vector Data _____ (2)
_____ (2)
- 4.4. Name the device used in remote sensing.
_____ (1)

[15]

TOTAL = 75

GOOD LUCK

ROUGH WORK

GREENBURY SECONDARY SCHOOL



DEPARTMENT OF HSS
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Ramasami

08/06/17

GEOG P2 - Q211

- 11. A
- 12. A
- 13. C
- 14. A
- 15. D
- 16. D
- 17. A
- 18. A
- 19. A
- 11.10. B
- 11.11. A
- 11.12. (NE / ENE) B
- 11.13. A
- 11.14. C
- 11.15. D

21. Map Distance = 7cm ✓ (6,8 - 7,2)

Ground Distance = 7 ÷ 2 km ✓

= 3,5 km × 1000m (3,4 - 3,6)

= 3500m ✓ (3400 - 3600)

22.1. Gradient	=	VI	:	HE	✓
	=	1885,5 - 1606 m	:	16,4 ÷ 2	(16,2 - 16,6)
	=	279,5 m ✓	:	8,2 km	(8,1 - 8,3)
	=	$\frac{279,5}{279,5}$:	8200 m	(8100 - 8300) ✓
	=	1	:	$\frac{8200}{279,5}$	
	=		:	29,34	(28,98 - 29,70) ✓

22.2. To rise one m from the starting point we have to walk 29,34 m. (accept interpretation based on answer for 22.1)

23. $180^\circ + 60^\circ = 240^\circ$ ✓ (238° - 242°)

24. $240^\circ + 20^\circ 37' = 260^\circ 37'$ ✓
(258° 37' - 262° 37')

25. Vertical Exaggeration = $\frac{\text{Vertical Scale}}{\text{Horizontal Scale}}$ ✓
= $\frac{0,5 \text{ CM rep } 50 \text{ M}}{1 \text{ cm rep } 100 \text{ M}}$ ✓
= $1:50000$
= $1:50000$
= $1:10000$ ✓
= $1:50000$
= $\frac{50000}{10000}$
= 5 times ✓

26 // to identify special features and have a clear understanding of the real feature //

- 311. a) Mountainous
- b) Many non perennial rivers.

321. Beef, dairy, maize, sorghum, wool, sunflower seed.

322. Recreation ✓
Water ✓

- 323. 9 - Power line //
- 7 - Golf course //
- 0 - Power Railway station / Siding //
- L - Residential area / Built up area //
- u - Row of trees //

- 331. Steep //
- 332. Wakkerstroom //
- 333. People work in the mills / forests //

41. Durable, stores a lot of information //

42. a) Identify the nature & extent of damage. //

b) Identify alternate routes to get to victims //

43. • Clarity in terms of size and shape //

• Sending out a signal and capturing the reflection //

• Data captured in form of pixels. //

• Data captured by means of points, lines and polygons. //

44. Satellite ✓

