KZN - DEPARTMENT OF EDUCATION

GREENBURY SECONDARY SCHOOL

JUNE EXAMINATION 2018

GEOGRAPHY P2 pp10

GRADE: 11 **DATE:** 05/06/18
EXAMINER: D. RAMASAMI **TIME:** 1.5 HOURS
MODERATOR: F. PARUK **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

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INSTRUCTIONS AND INFORMATION

RESOURCE MATERIAL

1. An extract from topographical map 2627CD PARYS
2. Orthophoto map 2627 CD 19 PARYS
3. **NOTE:** The resource material must be collected by schools for their own use.

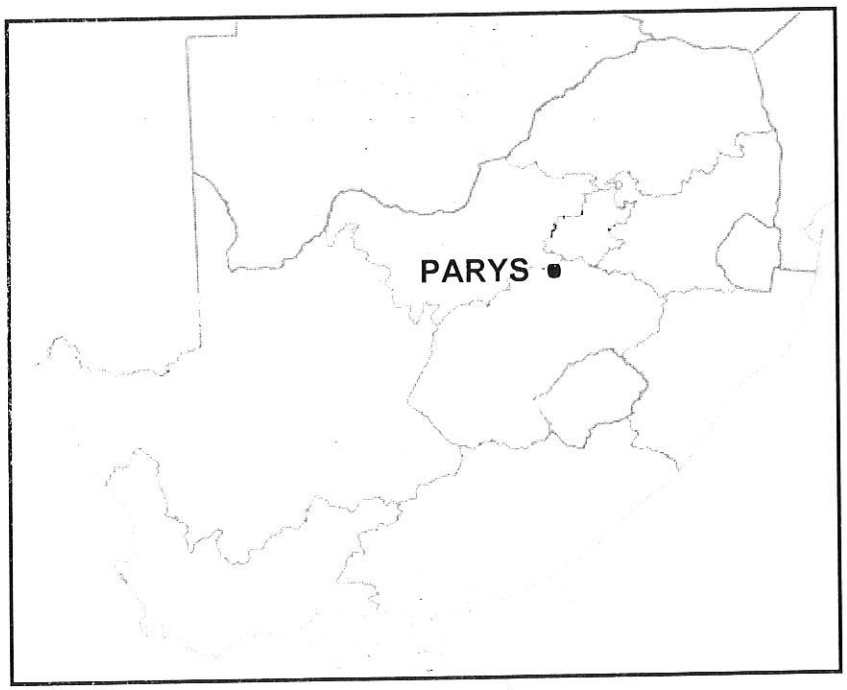
INSTRUCTIONS AND INFORMATION

1. Write your NAME and REG NUMBER 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 (2627CD PARYS) and an orthophoto map (2627 CD 19 PARYS) 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 back of this question paper for all rough work and calculations. Do NOT detach this page from the question paper.
6. Show ALL calculations and use supplied formulae, where applicable. Marks will be allocated for these.
7. Indicate the correct unit of measurement in the final answer of calculations. NO marks will be allocated for answers with incorrect units.
8. You may use a non-programmable calculator and a magnifying glass.
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
Caravan Park	Karavaanpark
Diggings	Uitgrawings
Golf Course	Gholfbaan
Gap	Poort
Holiday Resort	Vakansieoord
Island	Eiland
Purification Plant	Watersuiweringsaanleg
River	Rivier
Sewage Works	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]

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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 TOPOGRAPHIC 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 height of the trignometrical station in J6 is ...

A) 31m
B) 1456,4m
C) 31 + 1456,4m is
D) 1456,4 – 31m

_____

1.4. The feature at 26° 49' 48"S and 27° 21' 54"E

A) Hiking trail
B) Perennial water
C) Cultivated land
D) Secondary road

_____

1.5. Parys is found in

A) Gauteng
B) Free State
C) Northwest Province
D) Western Cape

_____

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1.6. One of the functions of the Vaal River is to

A) separate two provinces
B) Separate the farms and the residential areas
C) Prevent people from attacking people of Parys
D) Non of the above

_____

1.7. Feature 10 on the Orthophoto map is evidence of.....

A) farming
B) mining
C) forestry
D) fishing

_____

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 K from S on the topographic map is ...

A) SW
B) NE
C) WSW
D) SSW

_____

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1.13. The main primary activity at Q on the topographic map is ...

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

_____

1.14. The longitudinal position in the reference 2627 is ..

A) 26° S
B) 26° E
C) 27° S
D) 27° E

_____

1.15. the road 3 on the orthophoto map is ....

A) Another road
B) Arterial road
C) Secondary road
D) Main road

_____

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

QUESTION TWO

MAP CALCULATIONS

2.1. Calculate the distance in metres, between point 8 and point 12 on the orthophoto map map.

_____
_____
_____
_____ (3)

2.2.1. Calculate the average gradient between point 6 and spot height 1383 (SW of 3) on the Orthophoto map.

_____
_____
_____
_____
_____
_____
_____
_____(4)

2.2.2. Interpret the gradient calculated in 2.2.1.

_____

_____ (2)

2.3. Calculate the true bearing of spot height 1514 (E4) from spot height 1493 (D5)

_____ (3)

2.4. Calculate the magnetic bearing of the points in question 2.3 for 2011.

_____

_____

_____ (2)

2.5. Calculate the vertical exaggeration of a cross section drawn from the orthophoto map with a vertical scale of 2cm represents 50m.

_____

_____

_____

_____

_____

_____

_____ (4)

2.6. Give one importance of calculating vertical exaggeration.

_____

_____ (2)

[20]

QUESTION 3

MAP AND PHOTO INTERPRETATION

3.1.1. Identify two factors that restrict farming in C6

a) _____

_____

b) _____

_____ (4)

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

3.2.1. Name three things that has stimulated the growth of Parys

a) _____

b) _____

c) _____ (3)

3.2.2. State the main purpose of the feature at X (J8)

_____

_____ (2)

3.2.3. Name the following land uses/ feature

1 _____

5 _____

O _____

K _____

P _____ (10)

3.3.1. Identify the type of slope at 4 on the orthophoto map

_____ (2)

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

_____ (2)

3.3.3. State two services that may be found at T.

_____

_____ (2)

[25]

QUESTION 4

GEOGRAPHICAL INFORMATION SYSTEM

4.1. Define the term GIS.

_____ (2)

4.2. Give two advantages of remote sensing.

a)_____

_____

b)_____

_____ (4)

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

Spatial resolution _____

_____ (2)

Passive remote sensing_____

_____ (2)

Raster Data _____

_____ (2)

Vector Data _____

_____ (2)

4.4. Name the device used in remote sensing.

_____ (1)

[15]

TOTAL = 75

GOOD LUCK

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ROUGH WORK

R Ramasami
HOD - HSS
D. RAMASAMI 01/01/18

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

C

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

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

A

1.3. The height of the trignometrical station in J6 is ...

A) 31m
B) 1456,4m
C) 31 + 1456,4m is
D) 1456,4 -- 31m

B

1.4. The feature at 26° 49' 48"S and 27° 21' 54"E

A) Hiking trail
B) Perennial water
C) Cultivated land
D) Secondary road

B

1.5. Parys is found in

A) Gauteng
B) Free State
C) Northwest Province
D) Western Cape

B

1.6. One of the functions of the Vaal River is to

A) separate two provinces
B) Separate the farms and the residential areas
C) Prevent people from attacking people of Parys
D) Non of the above

A

1.7. Feature 10 on the Orthophoto map is evidence of.....

A) farming
B) mining
C) forestry
D) fishing

B

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

A

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

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

A

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

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

B

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

A

1.12. The direction of K from S on the topographic map is ...

A) SW
B) NE
C) WSW
D) SSW

C

1.13. The main primary activity at Q on the ~~orthophoto~~ topographic map is …

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

A

1.14. The longitudinal position in the reference 2627 is ..

A) 26° S
B) 26° E
C) 27°
D) ~~E~~° S
E) ~~27~~° E

A

1.15. the road 3 on the orthophoto map is ….

A) Another road
B) Arterial road
C) Secondary road
D) Main road

C

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

QUESTION TWO

MAP CALCULATIONS

2.1. Calculate the distance in metres, between point 8 and point 12 on the orthophoto map map.

MD = 10,5 cm ✓ (10,4 - 10,6)
G = 10,5 ÷ 2
= 5,25 km ✓ (5,2 - 5,3)
= 5250 m ✓ (5200 - 5300) (3)

2.2.1. Calculate the average gradient between point 6 and spot height 1383 (sw of 3) on the Orthophoto map.

G = VI : HE ✓
= 1400 - 1383 m : 14,7 x 0,1
= 17 m ✓ : 1,47 km
: 1470 m ✓
= 17/17 : 1470/17
= 1 : 86,47 ✓

(4)

2.2.2. Interpret the gradient calculated in 2.2.1.

We have to walk 86,17 m to rise 1m from the point we started.

(2)

2.3. Calculate the true bearing of spot height 1514 (E4) from spot height 1493 (D5)

180° + 48° = 228° (226° - 230°) (3)

2.4. Calculate the magnetic bearing of the points in question 2.3 for 2011.

MB = TB ± MD

= 226° (226° - 230°) + 18° 52' ✓

= 244° 52' (244° 52' - 248° 52' ✓

(2)

2.5. Calculate the vertical exaggeration of a cross section drawn from the orthophoto map with a vertical scale of 2cm represents 50m.

VE = VS/HS ✓

= 2cm rep 50m ✓
1 : 10 000

= 1cm rep 25m
1 : 10 000

= 1 : 2500 ✓ = 10 000 / 2 500 = 4 times ✓
1 : 10 000

(4)

2.6. Give one importance of calculating vertical exaggeration.

Identify features / get true idea of reality

(2)

[20]

QUESTION 3

MAP AND PHOTO INTERPRETATION

3.1.1. Identify two factors that restrict farming in C6

a) Steep slopes

b) Lack of water

(4)

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

3.2.1. Name three things that has stimulated the growth of Parys

a) Holiday resort

b) World Heritage Site

c) Industries (3)

3.2.2. State the main purpose of the feature at X (J8)

Store water

(2)

3.2.3. Name the following land uses/ feature

1 Cemetery

5 Farming

O Buildings / Ruins

K Windpump

P Built up area (10)

3.3.1. Identify the type of slope at 4 on the orthophoto map

Gentle (2)

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

Dover (2)

3.3.3. State two services that may be found at T.

Shop

Hospital (2)

[25]

QUESTION 4

GEOGRAPHICAL INFORMATION SYSTEM

4.1. Define the term GIS.

Computer tech. used to study Geog. info. (2)

4.2. Give two advantages of remote sensing.

a) Covers large area

b) Covers inaccessible areas (4)

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

Spatial resolution Clarity in terms of shape & location (2)

Passive remote sensing Creating an image by picking up radiation of the Earth (2)

Raster Data Information represented by pixels or grid cells. (2)

Vector Data Information represented by points, lines and polygons. (2)

4.4. Name the device used in remote sensing.

Satellite (1)

[15]

TOTAL = 75

GOOD LUCK

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ROUGH WORK