



# basic education

Department:  
Basic Education  
**REPUBLIC OF SOUTH AFRICA**

## NATIONAL SENIOR CERTIFICATE

### GRADE 12

#### GEOGRAPHY P2

FEBRUARY/MARCH 2018

**MARKS: 75**

**TIME: 1½ hours**

<b>EXAMINATION NUMBER:</b>																
<b>CENTRE NUMBER:</b>																

	M	In	SM	In	DM	In	CM	In	IM	In	MC	EA	EX	RM	In
Q1															
Q2															
Q3															
Q4															
TOT															

**This question paper consists of 12 pages and 1 page for rough work and calculations.**

**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 EXAMINATION NUMBER and CENTRE 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 topographic 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**

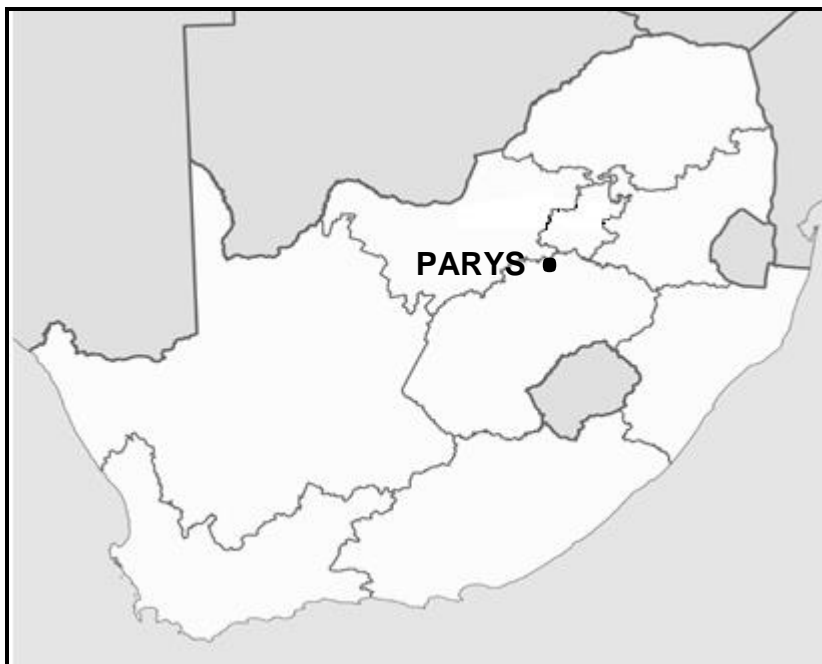
Aerodrome  
Caravan Park  
Diggings  
Golf Course  
Gap  
Holiday Resort  
Island  
Purification Plant  
River  
Sewage Works  
Woodlands

**AFRIKAANS**

Vliegveld  
Karavaanpark  
Uitgrawings  
Gholfbaan  
Poort  
Vakansieoord  
Eiland  
Watersuiweringsaanleg  
Rivier  
Rioolwerke  
Beboste Gebied

**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](http://en.wikipedia.org/wiki/Parys,_South_Africa,_Freestate)]

**QUESTION 1: MULTIPLE-CHOICE QUESTIONS**

The questions below are based on the 1 : 50 000 topographical map (2627CD PARYS), as well as the orthophoto map of a part of the mapped area. Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A–D) in the block next to each question.

1.1 The provincial border found on the topographical map separates the Free State and ...

- A Northern Cape.
- B Gauteng.
- C KwaZulu-Natal.
- D Mpumalanga.

1.2 The topographical map index south-east of Parys is ...

- A 2727AB.
- B 2727AD.
- C 2627DC.
- D 2727BA.

1.3 The difference in height between trigonometrical station 99 and spot height 1532 in block **B9** is ... metres.

- A 1 433
- B 1 685,3
- C 153,3
- D 1 532

1.4 The true bearing of the windpump in block **F4** from spot height 1474 in block **E6** is ...

- A 120°
- B 240°
- C 60°
- D 200°

1.5 The general direction in which the non-perennial stream flows in block **J8** is ...

- A south.
- B east.
- C north.
- D west.

1.6 The grid reference/coordinates of the excavations in block **J5** is ...

- A 26°56'42"E 27°24'30"S/26°56,7'E 27°24,5'S.
- B 26°56'30"S 27°24'42"E/26°56,5'S 27°24,7'E.
- C 26°56'42"S 27°24'30"E/26°56,7'S 27°24,5'E.
- D 26°56'30"E 27°24'42"S/26°56,5'E 27°24,7'S.

1.7 The area at **P** in block **H7** has a higher temperature than area **Q** in block **J3** due to the ...

- A artificial surfaces.
- B aspect of slope.
- C thermal belt.
- D river's influence.

1.8 The major primary activity in the mapped area is ...

- A mining.
- B forestry.
- C fishing.
- D farming.

1.9 The landform indicated by line **8** on the orthophoto map is a ...

- A gorge.
- B spur.
- C valley.
- D poort.

1.10 The national highway (N1) becomes ... Street where it passes through the town of Parys.

- A Sciffier
- B Allenby
- C Breë
- D Eike

1.11 The man-made feature at **10** on the orthophoto map is a/an ...

- A mine dump.
- B excavation.
- C dam.
- D quarry.

1.12 The main reason for the linear-shaped settlement at **S** in block **I5** is the ...

- A road.
- B fence.
- C boundary.
- D river.

1.13 Parys can be regarded as a/an ... settlement.

- A mining
- B gap
- C educational
- D bridge

1.14 The drainage pattern in block **J3** is a ... pattern.

- A trellis
- B dendritic
- C rectangular
- D radial

1.15 Where the stream in block **J8** flows into the dam at **X**, it is a ...-order stream.

- A first
- B second
- C third
- D fourth

(15 x 1)

**[15]**

**QUESTION 2: MAP CALCULATIONS AND TECHNIQUES**

2.1 Calculate, in km<sup>2</sup>, the area highlighted in RED on the topographical map, which indicates the area covered by the orthophoto map. Show ALL calculations. Marks will be awarded for calculations.

Formula: **Area = length × breadth**

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(5 x 1) (5)

2.2 Refer to lines 11–12 on the orthophoto map, which loosely follow a hiking trail.

2.2.1 Calculate the average gradient between 11–12. Show ALL calculations. Marks will be awarded for calculations.

Formula: **Gradient** =  $\frac{\text{vertical interval (VI)}}{\text{horizontal equivalent (HE)}}$

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(5 x 1) (5)

2.2.2 Give evidence from the orthophoto map to show that the average gradient calculated in QUESTION 2.2.1 is NOT a true reflection of the real landscape.

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(2 x 1) (2)

2.2.3 The hiking trail is recommended for novice (first-time) hikers. Give ONE reason evident in your answer to QUESTION 2.2.1 to support this statement.

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(1 x 1) (1)

2.3 Refer to the information about the magnetic declination of Parys found on the topographical map.

2.3.1 Calculate the magnetic declination of Parys for 2018. Show ALL calculations. Marks will be awarded for calculations.

Difference in years: \_\_\_\_\_  
\_\_\_\_\_

Mean annual change: \_\_\_\_\_

Total change: \_\_\_\_\_  
\_\_\_\_\_

Magnetic declination for 2018: \_\_\_\_\_  
\_\_\_\_\_

(5 x 1) (5)

2.3.2 Compare the magnetic declination for 2018 to the magnetic declination for 2011 and indicate which one is bigger.

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(1 x 1) (1)

2.3.3 Give ONE reason for your answer to QUESTION 2.3.2.

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(1 x 1) (1)  
**[20]**



**QUESTION 3: APPLICATION AND INTERPRETATION**

3.1 Refer to block **B2**.

3.1.1 State the climatological factor that affected the location of the woodlands (plantation) in block **B2**

\_\_\_\_\_ (1 x 1) (1)

3.1.2 Explain how the climatological factor stated in QUESTION 3.1.1 benefits the growth of the trees in the woodlands.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (2 x 2) (4)

3.1.3 Evaluate how topography influenced the location of the woodlands in block **B2**.

\_\_\_\_\_  
\_\_\_\_\_ (1 x 2) (2)

3.2 Refer to the meander and slopes **13** and **14** on the orthophoto map.

3.2.1 Name the slopes of meanders **13** and **14** respectively.

Slope 13: \_\_\_\_\_

Slope 14: \_\_\_\_\_

(2 x 1) (2)

3.2.2 Explain how slope **13** could have increased the size of Grooteiland.

\_\_\_\_\_  
\_\_\_\_\_ (1 x 2) (2)

3.2.3 Discuss why the geomorphological activity at slope **14** may cause the inhabitants of the settlements along the river to take precautionary measures to protect their properties in the future.

\_\_\_\_\_  
\_\_\_\_\_ (1 x 2) (2)

3.3 Refer to the street patterns at **P** and at **T** in blocks **H7** and **I9**.

3.3.1 Name the predominant street patterns at **P** and **T**.

**P:** \_\_\_\_\_

**T:** \_\_\_\_\_

(2 x 1) (2)

3.3.2 Would area **P** or area **T** experience more traffic congestion? Give a reason for your answer.

Answer: \_\_\_\_\_

Reason: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(1 + 2) (3)

3.4 Refer to blocks **E1**, **F1** and **F2** on the topographical map. Explain the role of the trees found along the banks of the Vaal River.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(1 x 2) (2)

3.5 The Vredefort Dome and Crater are tourist attractions associated with the town of Parys. Evaluate the positive economic impact of the Vredefort Dome and Crater on the economy of Parys.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(2 x 2) (4)

3.6 Refer to industrial area **U** in block **I8**.

3.6.1 Is industrial area **U** a heavy or light industrial zone?

\_\_\_\_\_

(1 x 1) (1)

3.6.2 Give ONE reason for your answer to QUESTION 3.6.1.

\_\_\_\_\_

\_\_\_\_\_

(1 x 1) (1)

[25]

**QUESTION 4: GEOGRAPHICAL INFORMATION SYSTEMS (GIS)**

4.1 Refer to the protected area in block **H7**.

4.1.1 Is the process during which an area is demarcated known as data layering or buffering?

\_\_\_\_\_ (1 x 1) (1)

4.1.2 Give reasons, evident on the topographical map, for the location of the protected area.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (2 x 2) (4)

4.2 Attribute data provides useful information in a GIS.

4.2.1 Define the term *attribute data*.

\_\_\_\_\_  
\_\_\_\_\_ (1 x 1) (1)

4.2.2 Discuss TWO attributes that influenced the location of the hospital in block **G9**.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (2 x 2) (4)

4.3 Refer to the orthophoto map.

4.3.1 The orthophoto map has a medium resolution. Does this mean that the orthophoto map has a high level of clarity?

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(1 x 1) (1)

4.3.2 Explain your answer to QUESTION 4.3.1.

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(1 x 2) (2)

4.3.3 Suggest ways in which data manipulation can improve the quality of the orthophoto map.

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(1 x 2) (2)  
**[15]**

**TOTAL: 75**

**ROUGH WORK AND CALCULATIONS**

**(NOTE: Do NOT detach this page from the question paper.)**