



NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2011

GEOGRAPHY: PAPER II

EXAMINATION NUMBER

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Time: 1½ hours

100 marks

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

1. Write your examination number in the appropriate blocks provided above.
 2. This paper consists of 16 pages. Please check that your paper is complete.
 3. Read the questions carefully.
 4. Answer ALL the questions in the spaces provided on the question paper.
 5. Carefully study the 1:50 000 topographical map extract 2627CD PARYS and accompanying 1:10 000 orthophoto map extract 2627 CD 11 VENTERSKROON before answering the questions.
 6. The topographic map has grid lines with markings A to H and 1 to 15 that may be used to identify locations.
 7. The topographical map and orthophoto map extracts and your completed Answer Book must be handed to the invigilator at the end of the examination. The maps and photos may be retained by the school for future use.
 8. On page 2 there is a glossary of words. This will help you understand what the words in **bold** in the questions are asking you to do. There is also an English-Afrikaans translation of some words appearing on the map.
 9. A magnifying glass and calculator may be used.
 10. It is in your own interest to write legibly and to present your work neatly.
 11. You may use the back page for rough work.
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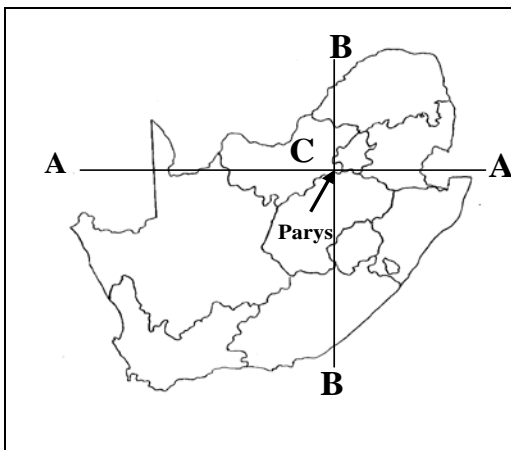
Glossary of words

WORD	MEANING
Calculate	To work out the value of something using a mathematical method
Compare	To point out or show differences and similarities between two or more features/aspects
Contrast	To point out or show differences between two or more features/aspects
Describe	To say what something is like
Discuss	To write about something in detail
Explain	To describe something so that it can be understood
Identify	To give the essential characteristics of something
Indicate	To point out/show; to state briefly
Provide	To put forward or give
State	To present information or details plainly, directly and simply, without discussion
Suggest	To put forward ideas, a plan or reasons

Translation of words

English to Afrikaans

Borderpost	Grenspost
Bridge	Brug
Camping grounds	Kampeerterrein
Caravan park	Woonwapark
Cattle enclosure	Kraal
Crown	Kroon
Drift or river crossing	Drif
Drive-in theatre	Inryteater
Farm	Plaas
Furrow	Kanaal
Gorge	Kloof
Hill	Koppie
Island	Eiland
Kudu	Koedoe
Lowlands	Laagte
Marsh or wetland	Vlei
Mountain	Berg
Protea (sugarbush)	Suikerbos
Rest	Rus
Ridge(s)	Rant(e), rif (riwwe)
River	Rivier
Road	Pad
Sewage works	Rioolwerke
Shooting range	Skietbaan
Spring or fountain	Fontein
Stream or river	Spruit
Watergap or Poort	Poort

Location map: Location of Parys in South Africa

Parys, the jewel of the Vaal River, is a fast developing country town in the Vredefort Dome area, the oldest and largest meteorite impact site in the world. It has become one of the most exclusive areas for property investments, with two 18-hole golf estates.

Research shows that 9 000 – 12 000 vehicles pass through Parys on a busy day. Geographically, Parys is one of the most centrally situated towns in South Africa, with 75% of the country's population living within a 200 km radius.

[Adapted from: <parys.co.za>]

1. Atlas use, map reading and map projections

- 1.1 Refer to the location map above, as well as the topographical map extract to answer the following questions. Tick the correct box.

- 1.1.1 The line of latitude marked A on the location map above is ...

26° 54' E	
27° 27' E	
26° 54' S	
27° 27' S	

(1)

- 1.1.2 The line of longitude marked B on the location map above is ...

27° 27' E	
26° 54' S	
26° 27' S	
27° 54' E	

(1)

- 1.1.3 The central meridian of the Gauss Conform Projection used for the topographical map extract 2627 CD Parys is ...

27° S	
18° E	
27° E	
26° E	

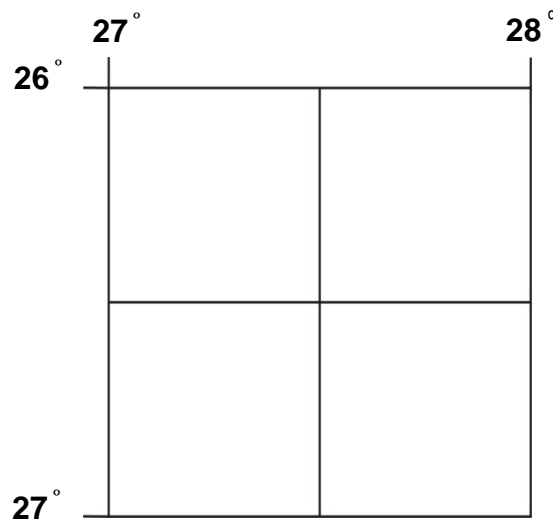
(1)

- 1.1.4 The province labelled C on the location map above is ...

Gauteng	
Free State	
North-West	
Northern Cape	

(1)

- 1.1.5 On the grid below, **indicate** the exact reference location of the 2627 CD Parys topographical map by drawing a square in the appropriate place below.




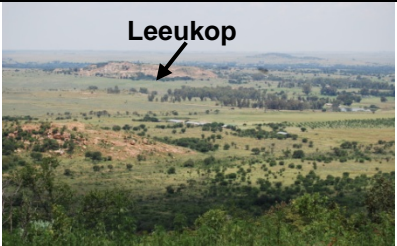


(2)

- 1.1.6 A number of physical features (A to E) have been labelled on the topographical map extract. **Identify** each labelled feature by circling the correct underlined word(s) listed below.

- | | | | |
|---|--------------------|---|-----|
| A | (Block C6) | <u>stream braiding/alluvial fan</u> | |
| B | (Blocks C11 – B12) | <u>gorge/ridge</u> | |
| C | (Block D7) | <u>concave slope/convex slope</u> | |
| D | (Block C7 – C8) | <u>river valley/spur</u> | |
| E | (Blocks F4 and F5) | The stream pattern is <u>dendritic/radial</u> . | (5) |

1.2 *Map orientation*

Study Photographs 1 to 4 on the following page. Refer to the topographical map extract. The block reference (e.g. E13) is given for each photograph. Once you have located the feature, read the statement and respond by **stating** TRUE or FALSE. **Provide** a reason for each answer, using map evidence.

Photograph		Block reference on topographical map	Statement	TRUE or FALSE (T or F)	Provide a reason for your answer
1		E 13	This low-level bridge is the only link to Golf Island from Parys.	(1)	(2)
2		E 10	This rocky outcrop called Leeukop has been quarried for its granite.	(1)	(2)
3		E 2	Venterskroon offers a variety of high-order functions and services.	(1)	(2)
4		E 12	This shop located along the R500 just north of the Vaal River, is in the Free State.	(1)	(2)

23 marks

2. *Map skills and calculations: The Vredefort Dome World Heritage Site*

Drainage and Relief Analysis

Refer to the Fact File on the Vredefort Dome World Heritage Site, as well as the orthophoto and topographical map extracts. Parys is located within the Vredefort Dome.

Fact File – Vredefort Dome World Heritage Site

The Vredefort Dome consists of at least three rings of overturned quartzite ridges extending outwards from the central impact area just south west of Parys.

Deep gorges or kloofs appear between the ridges where streams flow and eventually join the Vaal River. The World Heritage Site is privately owned by 450 landowners in the area. About 65% of these landowners are weekend farmers.

[<christo@kopjeskraal.co.za>]

2.1 2.1.1 Circle the correct underlined word.

Aasvoëlkop (blocks D3 and E3) is a tor/hogsback. (1)

2.1.2 Using map evidence, **provide** ONE reason for your answer.

_____. (2)

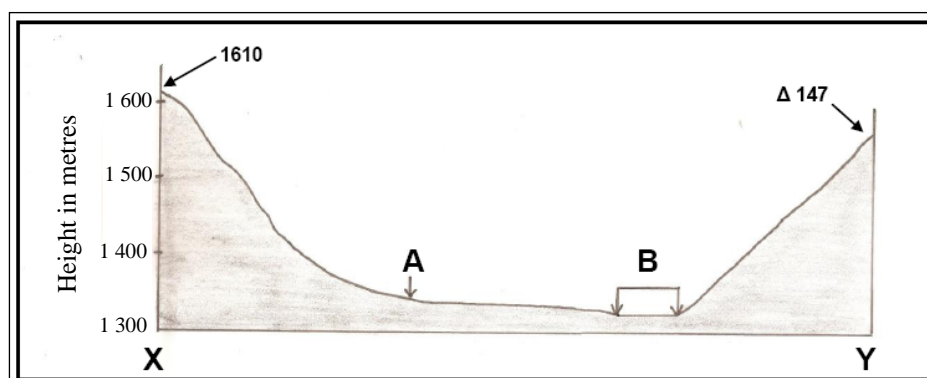
2.2 The Vaal River in this area is a superimposed drainage pattern. This drainage pattern ... (tick the correct option):

A	forms in areas that have been folded and uplifted.	
B	develops when the river is older than the features it flows over.	
C	develops when the river is younger than the features it flows over.	
D	forms when one river captures another river's headwaters.	

(2)

2.3 Refer to the orthophoto map extract.

A sketch cross-section is drawn from spot height 1610 (X) to trigonometrical beacon 147 (Y). See below:



2.3.1 **Identify** the features labelled A and B on the sketch cross-section. Cross reference using the orthophoto map extract.

A (infrastructure): _____

B (geomorphological): _____ (2)

2.3.2 Mark in the position of and label the following features on the sketch cross-section (page 6):

- Conservation land-use (natural trees and bush/non-agricultural)
- Provincial boundary (4)

2.4 Refer to block D2 on the topographical map extract as well as the same location on the orthophoto map extract. Use the orthophoto map extract for your calculations in Question 2.4.1 and 2.4.2.

The annual Crater Cruise mountain bike race takes place in this area. Participants may use a quad bike, 4×4 or mountain bike route. Part of the course is an exciting downhill single track section from spot height 1610 (point X) to Netreg (point N) at the foot of the hill.

2.4.1 **Calculate** the approximate bearing a participant will take when racing from point X to point N.

Bearing _____° (2)

2.4.2 **Calculate** the gradient of the single track (assuming it follows a straight line) from spot height 1610 (point X) to Netreg (point N).

(a) Difference in height: _____ m (1)

(b) Distance between the two points: _____ m (1)

(c) Gradient of single track: **1:** _____ (2)

Calculations:

2.5 Land-use map

Refer to the topographical map extract. Focus on the blocked area B 3 – 7, C 3 – 7, and D 3 – 7.

2.5.1 In the grid below, draw a land-use map of the area marked. Complete the map by sketching in the following features:

- hills and ridges (highlands)
- valleys (lowlands)
- agricultural land (fields)
- Vaal River
- secondary roads

(10)

Provide labels on your map and use the key below.

	3	4	5	6	7
B					
C					
D					

Key:

	hills and ridges (highlands)
	valleys (lowlands)
	agricultural land (fields)
	Vaal River
	secondary roads

2.5.2 **Explain** how the relief has influenced the land-use and development of roads in the area shown in the sketch map on page 8 (2.5.1).

- _____

- _____

(4)

31 marks

3. *Settlement analysis*

Refer to the topographical map extract, as well as the orthophoto map extract.

3.1 **Rural settlement**

Study the 1:50 000 topographic map extract to answer the following questions.

- 3.1.1 Study blocks F9, 10 and 11. Many of the farms consist of long, narrow strips extending from the Vaal River banks. **Suggest** ONE reason for this unusual farm layout.

 _____ (2)

- 3.1.2 The Vaal River is a permanent river, but most of its tributaries are non-perennial. **Suggest** ONE reason for this.

 _____ (2)

- 3.1.3 Circle the correct underlined words. Using map evidence, **provide** ONE reason for your answer.

Eldorado (E8) uses ground water/river water for irrigation. (1)

Reason: _____
 _____ (2)

- 3.1.4 Tick the correct option.
 The rural settlement pattern in block E 12 resembles a ... pattern:

star shaped	
circular	
cobweb	
linear	

(2)

- 3.1.5 The Parys area is a popular getaway destination for many city dwellers, who opt for a peaceful, agricultural weekend. Study Photographs 5 and 6 which show a smallholding for sale. The smallholding (marked F) is located in block E9 on the topographical map extract.

Photograph 5 Smallholding for sale (F)



Photograph 6 Buildings and dam on the smallholding for sale (F)



Describe TWO site and TWO situational factors which make this smallholding attractive to a potential investor. Use map evidence and your knowledge of rural settlements.

Attractive site factors:

1 _____

2 _____

(4)

Attractive situation factors:

1 _____

2 _____

(4)

3.2 Urban Settlement

- 3.2.1 Parys is classified as a central place. Using map evidence, **suggest** ONE reason for this classification.

• _____

(2)

3.2.2 Using map evidence, **describe** TWO features which suggest Parys was originally laid out as a typical apartheid town.

- _____

- _____
_____ (4)

3.2.3 **Compare and contrast** the built-up areas of Parys and Tumahole in the south-east corner of the topographical map extract. Complete the following table.

Features of the built-up areas	Parys	Tumahole
Dominant street pattern		
Building density		
Examples of recreational facilities		

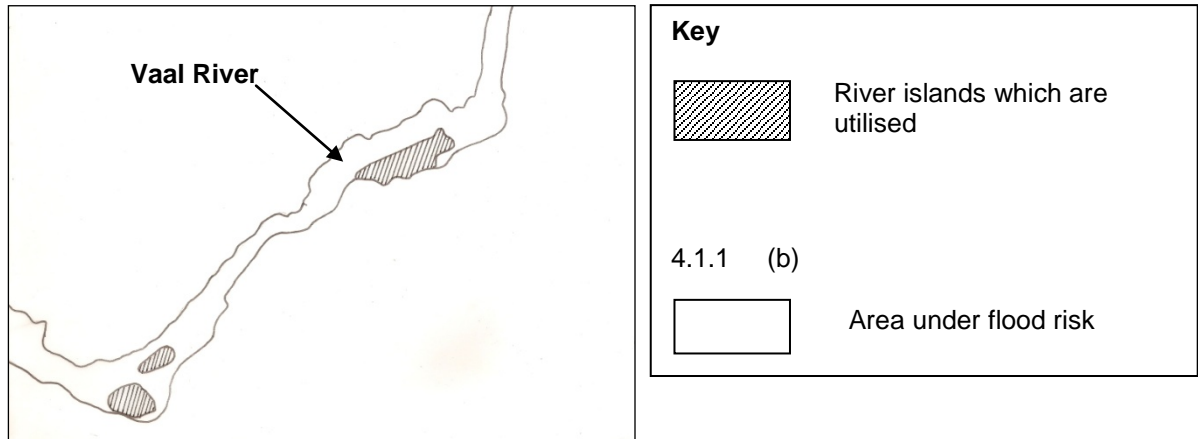
(6)

29 marks

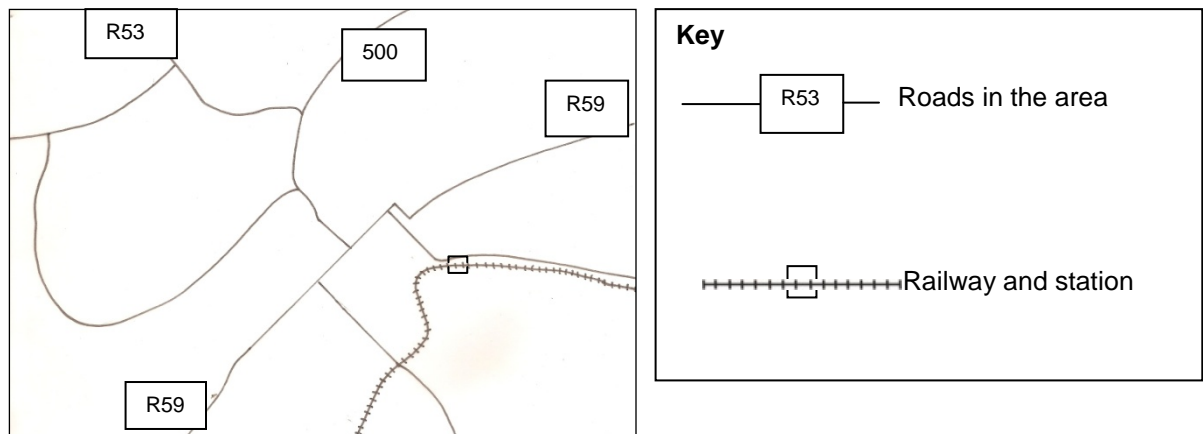
4. *Fieldwork and Research*

- 4.1 Study Maps 1 to 3 below which show three different data layers for the immediate area around Parys. These layers or themes of information are an important concept used in Geographic Information Systems (GIS).

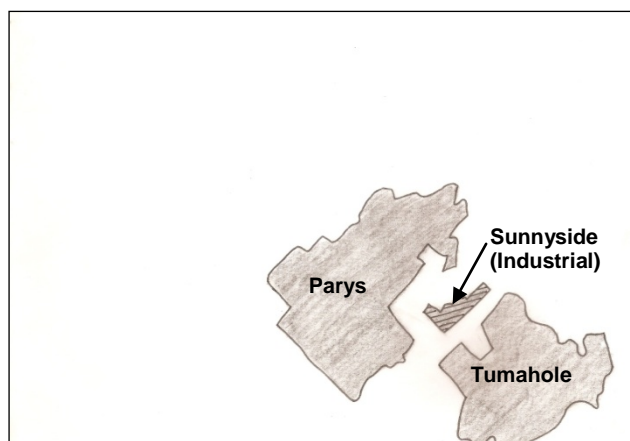
Map 1 The Vaal River



Map 2 Infrastructure in the area



Map 3 Built-up areas



4.1.1 Buffering is a GIS tool used by the Parys Municipality to determine the amount of flooding that could occur, should the sluice gates of the nearby Vaal Dam be opened.

(a) **Explain** the meaning of the term buffering.

(2)

(b) Draw a 0.3 cm buffer strip (or line) on either side of the Vaal River in Map 1 (page 13). Shade and label this area: Area under flood risk. Complete the key.

(3)

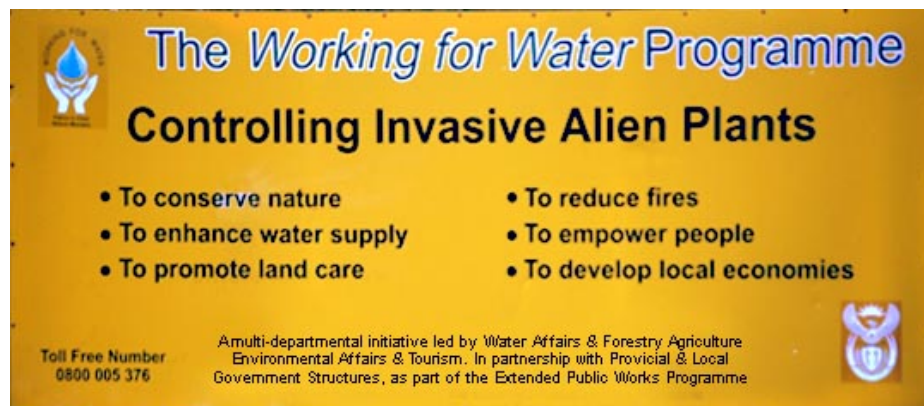
4.1.2 **Discuss** why the Municipality of Parys finds the information contained in Maps 1, 2 and 3 (page 13) useful for flood management.

- ---
- ---
- ---

(4)

4.1.3 Refer to Maps 1, 2 and 3 (page 13) and Photograph 7.

Photograph 7: Working for Water



As the management of the Vredefort Dome World Heritage Site is in the hands of 450 farmers in the area, the *Working for Water* programme is an important management strategy for this catchment area of the Vaal River. Write a letter to this conservation body highlighting the importance of both the Parys Municipality and the farmers in the area adopting the *Working for Water* programme to sustainably manage the water resources along the Vaal River. Use page 15 for your letter.

Letter to the Vredefort Dome World Heritage Site Conservation Body

Re: The importance of the Parys Municipality and the Vredefort Dome farmers adopting the *Working for Water* programme to sustainably manage water resources along the Vaal River.

(8)

17 marks**Total: 100 marks**

Rough work