



NATIONAL SENIOR CERTIFICATE EXAMINATION  
NOVEMBER 2009

**GEOGRAPHY: PAPER II**

**EXAMINATION NUMBER**

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Time: 1½ hours

100 marks

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**PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY**

1. Write your examination number in the appropriate blocks provided above.
2. This paper consists of 15 pages. Please check that your question paper is complete.
3. Read the questions carefully.
4. Answer ALL the questions in the spaces provided on the question paper. The correct answer should be ticked in the multiple-choice questions.
5. Carefully study the 1:50 000 topographical map extract 3322BC DE RUST and the accompanying 1:10 000 orthophoto map extract 3322BC 21 DE RUST before answering the questions.
6. The topographic map has grid lines with markings A to K and 1 to 5 that may be used to identify locations.
7. The topographical map, orthophoto map extract and your question paper complete with answers 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 a calculator may be used.
10. It is in your own interest to write legibly and to present your work neatly.

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**Total marks**

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**Glossary**

<b>WORD</b>	<b>MEANING</b>
<b>Account for</b>	To give reasons why something is like that
<b>Annotate</b>	To put labels and notes on a diagram or map
<b>Calculate</b>	To work out an answer
<b>Describe</b>	To say what something is like
<b>Determine</b>	To discover something through investigation
<b>Discuss</b>	To write about something in detail
<b>Explain</b>	To describe something so that it can be understood
<b>Identify</b>	To name or say who or what
<b>Indicate</b>	To show
<b>Name</b>	To state something, to list or mention
<b>Outline</b>	To explain something in a general way
<b>Recommend</b>	To suggest what should be done
<b>Substantiate</b>	To prove something is true; to give reasons
<b>Suggest</b>	To put forward ideas, a plan or reasons; to name

**Translation of words**

English to Afrikaans

Drift or river crossing	Drif
Furrow	Voor
Kloof or deep, narrow gorge in a river valley	Kloof
Mountain	Berg
River	Rivier
Shooting range	Skietbaan
Waterfall	Waterval
Watergap	Poort

**Location of De Rust in South Africa**

	<p>De Rust (a place of rest) is located in the shadow of the Swartberg Mountains next to the Groot River. The Victorian town is situated at the mouth of the Meiringspoort Pass, an incredible passageway that pierces the heart of the Swartberg, and the main road is barely a kilometre long. De Rust is in a mixed farming area, with ostrich as the main export product. Wine and Port are produced; lucerne and seed vegetables are also grown. Summers are hot (between 27° – 37°C) with the occasional thunderstorm. Winters are sunny and cold at night (3° – 5°C). Regular snowfalls are experienced in the Swartberg and rain falls in winter in this area.</p>
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[Adapted from: <derust.org.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 ...

33° E	
22° S	
22° E	
33° S	

(1)

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

22° S	
33° E	
22° E	
33° S	

(1)

1.1.3 The ocean marked C on the location map above is ...

Atlantic	
Benguela	
Agulhas	
Indian	

(1)

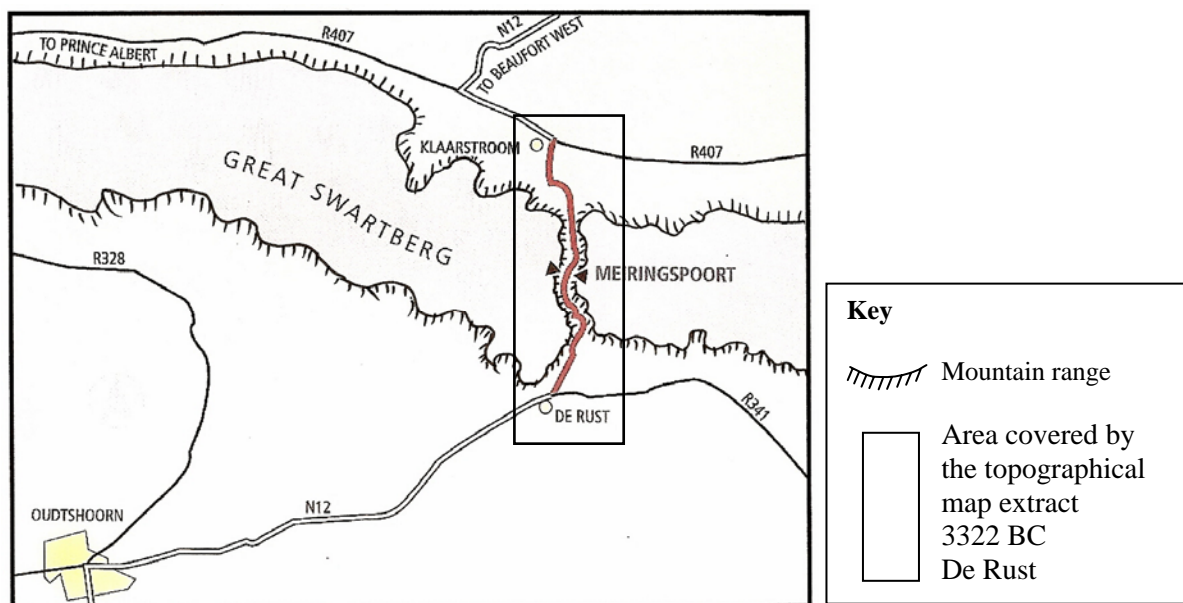
1.1.4 The province marked D on the location map (page 3) is ...

Northern Cape	
Eastern Cape	
KwaZulu-Natal	
Western Cape	

(1)

1.2 Refer to Figure 1, a sketch map of the De Rust area as well as the topographical map extract.

**Figure 1: Sketch map of the De Rust area**



[Adapted from: *The Romance of Cape Passes*, Graham Ross]

1.2.1 Describe the route from Klaarstroom to De Rust.

- \_\_\_\_\_  
\_\_\_\_\_
- \_\_\_\_\_  
\_\_\_\_\_

(2 × 2 = 4)

1.2.2 What is the approximate bearing of the route (Figure 1) from Klaarstroom to De Rust?

\_\_\_\_\_

(2)

1.2.3 **Discuss** the impact the Great Swartberg Mountains have had on road transport routes in the area.

- \_\_\_\_\_  
\_\_\_\_\_
- \_\_\_\_\_  
\_\_\_\_\_

(2 × 2 = 4)

1.3 Study the 1:50 000 topographical map extract (3322BC DE RUST) to answer the following questions. Tick the correct box.

1.3.1 The map projection used to draw the De Rust 1:50 000 topographical map is ...

Lambert	<input type="checkbox"/>
Mercator	<input type="checkbox"/>
Peters	<input type="checkbox"/>
Gauss Conform (Conformal)	<input type="checkbox"/>

(1)

1.3.2 The central meridian for this projection for the De Rust 1:50 000 topographical map is ...

22° E	<input type="checkbox"/>
23° S	<input type="checkbox"/>
23° E	<input type="checkbox"/>
30° E	<input type="checkbox"/>

(1)

1.3.3 The predominant drainage pattern in Blocks C1 and D1 is ...

Annular	<input type="checkbox"/>
Deranged	<input type="checkbox"/>
Radial	<input type="checkbox"/>
Rectangular	<input type="checkbox"/>

(2)

1.3.4 The highest point on the topographic map extract is \_\_\_\_\_ metres above sea level.

(2)

<b>20 marks</b>
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<b>Q1 sub-total</b>
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2. *Map Skills and analysis: Meiringspoort Pass*

Refer to the Fact File on the Meiringspoort Pass below, as well as the topographical map extract.

**Fact File: Meiringspoort Pass**

- The Meiringspoort Pass was built between 1856 – 1858.
- The road linked the interior Karoo to the coast.
- This formed an important transport route for the sheep farmers in the Karoo who exported their wool through the harbour at Port Elizabeth.
- The pass has been regularly closed due to flash floods.
- After 1998 the road was reconstructed at a cost of R70 million.

[Adapted from: <derust.org.za>]

2.1 The Smith family has entered the annual cycling race through the Meiringspoort Pass. They carried out a practical field study of the area to make sure all members of the family safely complete the race. The start of the race is at Klaarstroom (Point S, B3) and the finish is at Point F (K3). The following questions are based on their study.

2.1.1 Herriesklip (G4) is a Monument.

True	
False	

(1)

**Substantiate** your answer.

- \_\_\_\_\_  
\_\_\_\_\_

(2)

2.1.2 Study Photograph 1 as well as the topographical map extract.

**Photograph 1: Looking south towards the Swartberg and Meiringspoort from Klaarstroom**



[Examiner's Photograph]

- (a) Klaarstroom (Photograph 1) does not rely on groundwater for its water source.

True	
False	

(1)

**Substantiate** your answer.

- \_\_\_\_\_  
\_\_\_\_\_

(2)

- (b) With reference to the topographical map extract, **identify** the route number of the road in Photograph 1.

\_\_\_\_\_

(2)

- (c) Tick the correct answer for the most accurate description of a poort. A poort (Meiringspoort) is ...

A	An elongated area of higher land that may also form a watershed.	
B	A watergap in a mountain range where a river has cut through, leaving steep-sided valleys.	
C	A mound of rounded core stones.	
D	A ridge with a dip slope and a scarp slope.	

(2)

2.1.3 **Calculate** the straight-line distance from Herriesklip (G4) to Point F (K3) in kilometres.

\_\_\_\_\_ km (2)

Calculations
--------------

2.1.4 Road engineers use a detour index which measures the 'directness' of a road route. A straight-line route has an index of 100. The formula they use is:

$$\text{Detour Index} = \frac{\text{Actual distance of route}}{\text{Straight line distance}} \times 100$$

(a) The engineers need to determine the detour index of the Meiringspoort Pass. Given the actual distance of the Meiringspoort Pass is 21.2 km and the straight line distance is 16.7 km, **determine** the detour index for the Pass from point S (B3) to point F (K3).

\_\_\_\_\_ (2 × 2 = 4)

Calculations
--------------

(b) The detour index descriptor for Meiringspoort Pass is ... (Tick the correct answer.)

Index descriptor	Range of Index	Answer (Tick)
Straight	100	
Slightly twisting	101 – 120	
Winding with some tight corners	121 – 140	
Winding with very tight corners (almost zig-zagging)	141 +	

(1)



2.1.5 If the cycle race took the superfit John Smith 35 minutes to complete, **calculate** the average speed he cycled at in kilometres per hour.

Note: use the actual distance from 2.1.4 (a).

\_\_\_\_\_ km/h

(2 × 2 = 4)

Calculations
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2.1.6 The two younger members of the Smith family stopped at the waterfall (W in F4) for a refreshment break (study Photograph 2).

**Photograph 2: Waterfall along the Grootrivier**



[Examiner's Photograph]

(a) **Suggest** why the water in this stream may be safe to drink.

- \_\_\_\_\_  
\_\_\_\_\_

(2)

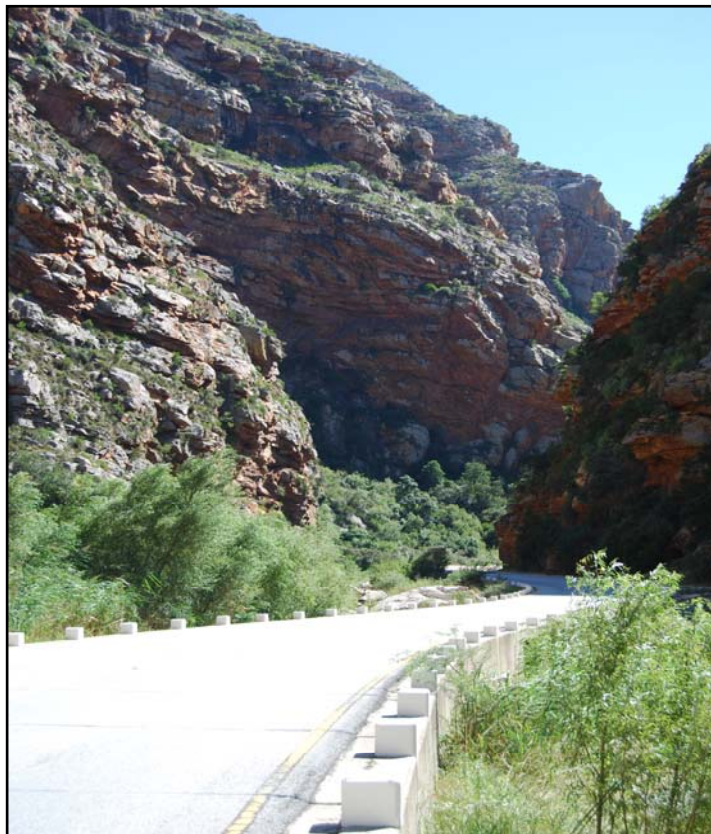
(b) The waterfall is a popular tourist stop. **Recommend** how this resource can be used and managed in a sustainable way.

- \_\_\_\_\_  
\_\_\_\_\_
- \_\_\_\_\_  
\_\_\_\_\_

(2 × 2 = 4)

2.1.7 The Smith family cross numerous low-level bridges (drifts\*) as shown in Photograph 3 as they cycle along this route.

**Photograph 3: Drift\* along the cycle route (Meiringspoort Pass)**



[Examiner's Photograph]

(\* drift – a low level-bridge under which a river flows)

(a) **Name** the river flowing through Meiringspoort that these bridges cross.

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

(b) In which general direction is this river flowing?

\_\_\_\_\_ (2)

(c) John Smith discusses the hazards facing road users in mountainous areas like the Swartberg. **Describe** TWO possible hazards users of the Meiringspoort Pass should take into account.

- \_\_\_\_\_  
\_\_\_\_\_

- \_\_\_\_\_  
\_\_\_\_\_

(2 × 2 = 4)

(d) **Outline** TWO sets of information a GIS specialist would need from organisers to plan the position of the watering points along the race route.

- \_\_\_\_\_  
\_\_\_\_\_

- \_\_\_\_\_  
\_\_\_\_\_

(2 × 2 = 4)

**38 marks**

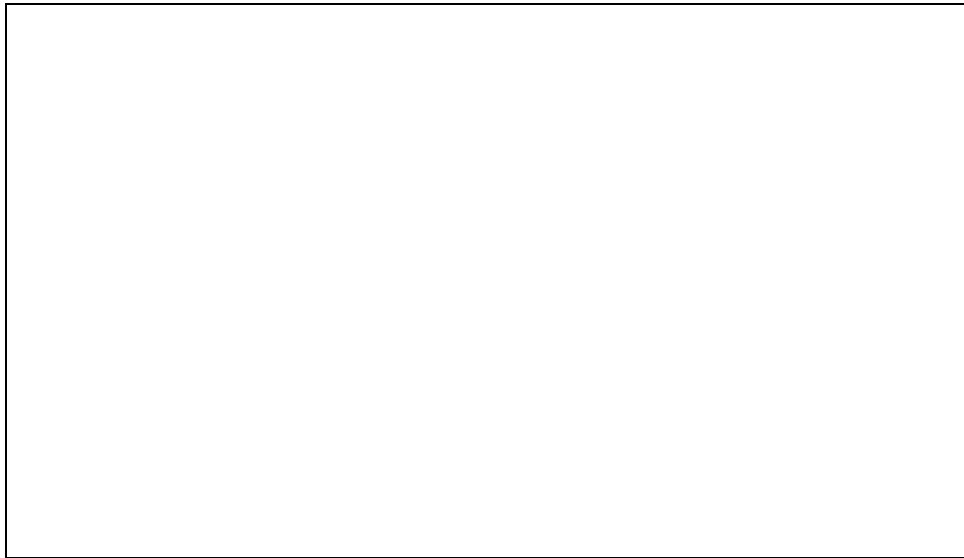
**Q2 sub-total**

3. *Orthophoto skills*

3.1 **Landscape analysis**

Refer to the orthophoto map and the topographical map extracts.

3.1.1 (a) Using the orthophoto map, draw a sketch section from P to Q.



(2 × 2 = 4)

(b) **Indicate** the following on your section drawn above:

- Huisrivier
- Floodplain
- Track

(3 × 2 = 6)

3.1.2 **Microclimate**

(a) **Annotate** the sketch section (3.1.1 (a)) to show your understanding of anabatic air flow on the slopes of this valley. (2)

(b) **Explain** why frost is a problem in the Huisrivier valley during winter.

- \_\_\_\_\_  
\_\_\_\_\_
- \_\_\_\_\_  
\_\_\_\_\_

(2 × 2 = 4)

**3.2 Drainage and Land-use in the Huisrivier valley**

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

3.2.1 The main stream of the Huisrriver is a perennial river. Tick the correct answer.

True	<input type="checkbox"/>
False	<input type="checkbox"/>

(1)

Give ONE piece of evidence to support your answer.

- \_\_\_\_\_  
\_\_\_\_\_

(2)

3.2.2 **Describe** ONE aspect of the agricultural land-use along the river valley.

- \_\_\_\_\_  
\_\_\_\_\_

(2)

**3.3 Land-use in the De Rust area**

3.3.1 Area D (orthophoto map extract) was originally built as a 'township' during the apartheid era.

Using map evidence, **identify** THREE services provided in the township.

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

(3)

3.3.2 **Calculate** the area of the township D in hectares. Assume that the township is a rectangle. Note 1 ha = 10 000m<sup>2</sup>.

Calculations
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Tick the correct answer (approximate):

150 ha	<input type="checkbox"/>
15 ha	<input type="checkbox"/>
90 ha	<input type="checkbox"/>
45 ha	<input type="checkbox"/>

(2 × 2 = 4)

3.3.3 **Account for** the original location of this township.

- \_\_\_\_\_  
\_\_\_\_\_


(2)

**30 marks**

**Q3 sub-total**

4. *Economic Potential of De Rust*

The De Rust tourism office is currently upgrading their website. If you browse the Internet, you will find the following template on their homepage, with a note: *Site under construction*. Complete the homepage by filling in the missing information in the blocks below.

<b>LOCATION MAP</b> How to find De Rust?	
<b>CLIMATE OF THE AREA</b>	
<b>LOCAL TOURIST ACTIVITIES</b> (Cultural and historical buildings and sites; arts and crafts) 	<ul style="list-style-type: none"><li>•</li></ul> (2)
<b>OUTDOOR ACTIVITIES</b>	<ul style="list-style-type: none"><li>•</li><li>•</li><li>•</li></ul> (3)
<ul style="list-style-type: none"><li>•</li><li>•</li><li>•</li></ul> (3)	

**12 marks**

**Q4 sub-total**

**Total: 100 marks**