



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 question paper consists of 16 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.
5. Carefully study the 1:50 000 topographical map extract 3321DA CALITZDORP and an accompanying 1:10 000 orthophoto map extract 3321DA4 CALITZDORP before answering the questions. Note that the area covered by the orthophoto map has been marked in on the topographic map extract.
6. The topographic map has grid lines with markings A to F and 1 to 8 that may be used to identify locations according to blocks.
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 a 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. No marks will be allocated to rough work.
12. Please hand in this question paper.

Question	1	2	3	4	Total
Marks					

Glossary of terms

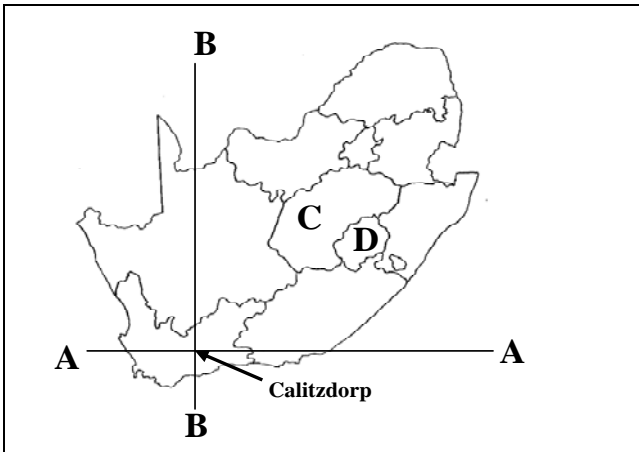
WORD	MEANING
Calculate	To work out the value of something using a mathematical method.
Describe	To say what something is like.
Design	To explain step-by-step a process or plan of action.
Discuss	To write about something in detail.
Explain	To describe something so that it can be understood.
Express	To clearly state.
Identify	To give the details or characteristics of something.
Indicate	To show.
Justify	To support an answer by giving reason, argument or evidence.
Name	To state something, to give; to mention.
Order	To arrange according to a specific method or sequence.
Predict	To tell something in advance; to foretell of a future event.
Select	To choose.
Suggest	To put forward ideas, a plan or reasons.

Translation of words

English to Afrikaans

Brickfields	Steenbakkery
Bridge	Brug
Canal	Kanaal
Caravan Park	Karavaanpark
Cliff	Krans
Diggings	Opgrawings
Farm	Plaas
Furrow	Plantvoor
Gorge	Kloof
Hill	Koppie
Marsh, swamp or wetland	Vlei
Mountain	Berg
Old rail route	Ou treinspoor
Plains or open veld	Vlakte
Purification plant	Suiweringsaanleg
Ravine	Kloof
River	Rivier
Road	Pad
Sewerage works	Rioolwerke
Silo	Silo
Spring or fountain	Fontein
Stream or river	Spruit
Watergap or poort	Poort
Weir	Dwarsmuur/stuwal

Location map: Location of Calitzdorp in South Africa



Calitzdorp is a quaint* town on the scenic Route 62, in the heart of the Little Karoo. The town is just 4 hours from Cape Town and halfway to Port Elizabeth. With a population of 8 400, Calitzdorp's economy is driven by Port (a type of wine) and winemaking, ostrich and fruit farming and tourism. The area is also renowned for its indigenous flora and boasts 500 species of succulents.

quaint* – having an old-fashioned attractiveness and charm; oddly picturesque

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

1. Atlas use, map projections and map orientation and techniques

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° 32' E	<input type="checkbox"/>
21° 41' E	<input type="checkbox"/>
33° 32' S	<input type="checkbox"/>
21° 41' S	<input type="checkbox"/>

(1)

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

33° 32' S	<input type="checkbox"/>
21° 41' E	<input type="checkbox"/>
33° 32' E	<input type="checkbox"/>
21° 41' S	<input type="checkbox"/>

(1)

1.1.3 The central meridian of the Gauss Conform Projection used for the topographical map extract 3321DA CALITZDORP is ...

21° E	<input type="checkbox"/>
21° S	<input type="checkbox"/>
26° E	<input type="checkbox"/>
33° S	<input type="checkbox"/>

(1)

1.1.4 The province labelled C on the location map (page 3) is ...

Free State	
Gauteng	
Northern Cape	
North-West	

(1)

1.1.5 The country labelled D on the location map (page 3) is ...

Botswana	
Lesotho	
Mozambique	
Swaziland	

(1)

1.2 **Map orientation and geographical techniques**

Refer to the topographic map extract 3321DA CALITZDORP.

1.2.1 **Calculate** the bearing of Toorkop (trigonometrical beacon 124 in B1) from Besemkop (trigonometrical beacon 14 in A6). Tick the correct answer.

45°	
130°	
230°	
270°	

(2)

1.2.2 (a) At what altitude is the water purification plant (E2)?

_____ m

(2)

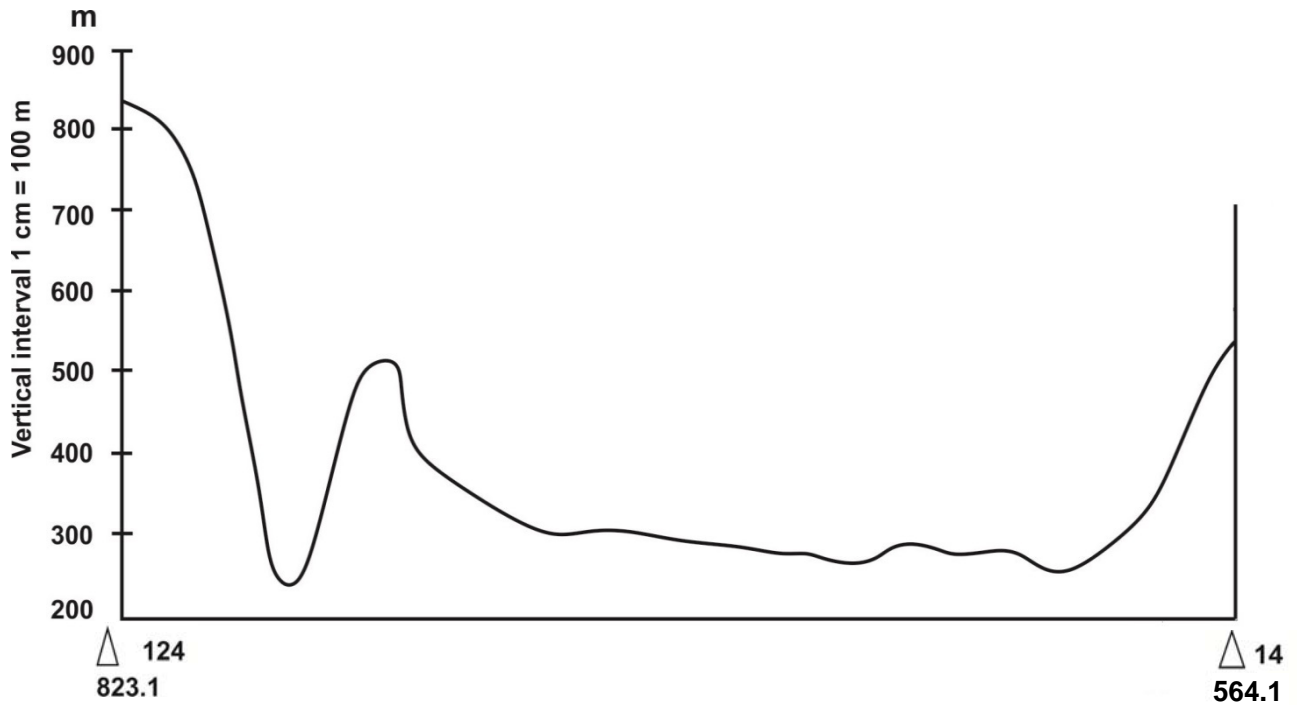
(b) **Suggest** a purpose for the weirs in B2 and C4 built on the Gamka River.

(2)

(c) Why is the settlement called Bergsig (B4) located where it is?

(2)

- 1.2.3 (a) A cross section is drawn from Toorkop (trigonometrical beacon 124 in B1) to Besemkop (trigonometrical beacon 14 in A6). The vertical interval used is 1cm to 100 m.



Cross section from Toorkop (trigonometrical beacon 124 in B1) to Besemkop (trigonometrical beacon 14 in A6)

Clearly **indicate** the position of the following on the cross section above:

- Gamka River
- Nelsrivier
- R62
- Gamka River gorge (8)

- (b) **Express** the vertical scale of the cross section as a representative fraction.

1:_____ (2)

Calculation

(c) **Calculate** the vertical exaggeration of the cross section on page 5.

Vertical exaggeration _____ times (2)

Calculation

1.2.4 (a) Is Toorkop (trigonometrical beacon 124 in B1) intervisible from spot height 264 (A5)?

_____ (1)

(b) **Justify** your answer.

_____ (2)

1.2.5 Study the course of the Gamka River in blocks A1, B1 – 2 and C2.

There is evidence that rejuvenation has taken place. **Identify** TWO river features which result from rejuvenation. Give the block reference of each feature.

- _____
- _____

(4)
[32]

Q1 subtotal

2. *Climate and drainage of the area*

2.1 Study Figure 1, a rainfall graph of Calitzdorp.

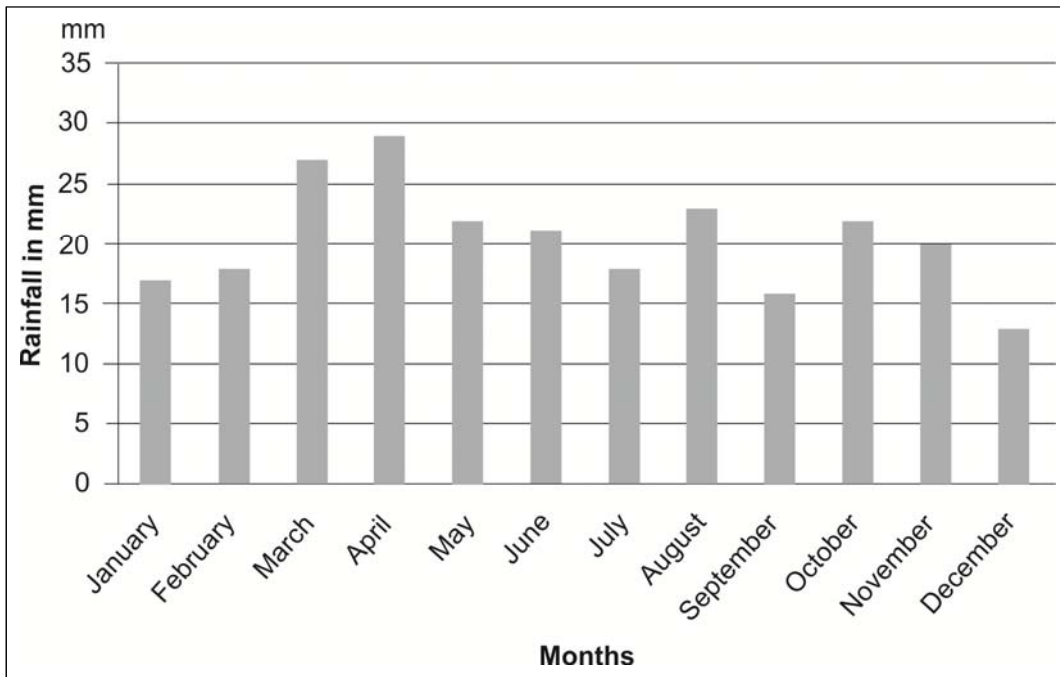


Figure 1: Rainfall graph of Calitzdorp

2.1.1 **Calculate** the approximate total annual rainfall (mm) for Calitzdorp.

_____ mm (2)

2.1.2 Given the above rainfall data, **explain** why irrigation from the Gamka River is necessary in this region.

 _____ (2)

2.2 **Drainage of the area**

Refer to the topographic map extract 3321DA CALITZDORP.

2.2.1 A drainage basin has been marked off on the map in blocks E2 – 4 and F2 – 4.

(a) What type of river flow occurs in this basin?
 _____ (2)

(b) **Name** the stream pattern found in this basin.
 _____ (2)

2.2.2 The sketch below (Figure 2) is a copy of the streams in the drainage basin. Note the drawing has been enlarged.

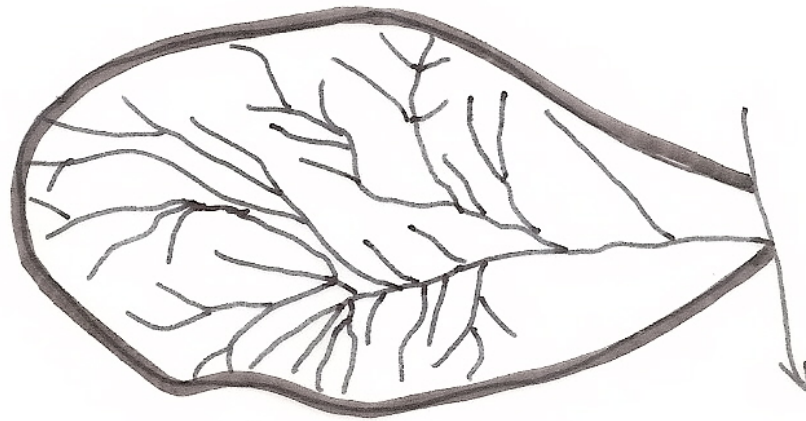


Figure 2: Drainage basin

- (a) **Order** the streams in the marked drainage basin. Complete the table below to show the stream order and the number of tributaries of each order. (4)

Stream order				
Number of tributaries				

- (b) **Explain** the relationship between the stream order and the number of tributaries. (2)
- _____
- _____

- (c) (i) **Describe** the drainage density of the basin by ticking the correct answer. (2)

Drainage density of drainage basin (Figure 2)

Extremely high	<input type="checkbox"/>
High	<input type="checkbox"/>
Medium	<input type="checkbox"/>
Low	<input type="checkbox"/>

- (ii) **Predict** how this drainage density would change in a prolonged drought situation. (2)
- _____
 - _____
- [18]

Q2 subtotal

3. **Settlement analysis and land use**

3.1 **Rural settlement**

3.1.1 Study the farms along the Gamka River to the south of Calitzdorp.

The rural settlement pattern in blocks E4 and F5 resembles a ... pattern. (Tick the correct option.)

Circular	
Cobweb	
Linear	
Star shaped	

(2)

3.1.2 Many of the farms consist of long, narrow strips of land extending from the Gamka River banks. **Suggest** ONE reason for this unusual farm layout.

(2)

3.1.3 **Explain** why the roads and settlements are along the edge of the Gamka River floodplain.

(2)

3.1.4 There is evidence that water is a critical resource in the area. **Discuss** how the farmers have managed their water resources to sustainably utilise this resource.

- ---

- ---

- ---

(6)

3.2 Urban settlement

3.2.1 Calitzdorp is on the scenic Route 62 and is a popular tourist destination. Many bed and breakfast establishments have opened as well as craft stores and restaurants. Study Photographs 1 and 2 which show a property for sale in Calitzdorp.

Photograph 1



[Examiner's Photograph]

Photograph 2

Property for sale in Calitzdorp



[Examiner's Photograph]

Describe THREE locational factors which make Calitzdorp ideal for locating a bed and breakfast business. Use map evidence and your knowledge of settlements and tourism.

Ideal location factors: Calitzdorp – Tourism

- 1 _____
- _____
- 2 _____
- _____
- 3 _____
- _____

(6)

3.2.2 Calitzdorp is classified as a central place. Using map evidence, **suggest** TWO reasons for this settlement classification.

- _____

- _____

(4)

3.3 **Land use**

Refer to the orthophoto map extract 3321DA 4 CALITZDORP, as well as the topographic map extract 3321DA CALITZDORP.

3.3.1 A number of statements are given below. **Select** the correct underlined word(s) by placing a circle around the word(s).

- (a) Farming along the river valley in E4/5 is extensive / intensive.
- (b) Farming in the Calitzdorp area is mostly cultivated lands / orchards.
- (c) Products produced on these farms are for commercial / subsistence use.

(6)

3.3.2 A simple GIS land-use map (Figure 3 on page 12) has been generated of the area shown on the orthophoto map.

An incomplete key has been provided on page 13.



[Afrispacial cc]

Figure 3: Land-use map of Calitzdorp







Key Land use	(a) Type of land use	(b) Representation: point, line or area (polygon)
		
		
	Karoo succulent vegetation and mountain fynbos	Area
		
		
		

Figure 4: Key of land-use map

- (a) With reference to the orthophoto map extract as well as the topographic map, **identify** the different categories of land use shown on the GIS map. (Figure 3, page 12)
Fill in your answers in the appropriate space (a) on the key above. (5)

- (b) **Indicate** whether the land-use category represents a point, line or area. Fill in your answer on the key (b) in Figure 4 above. (5)

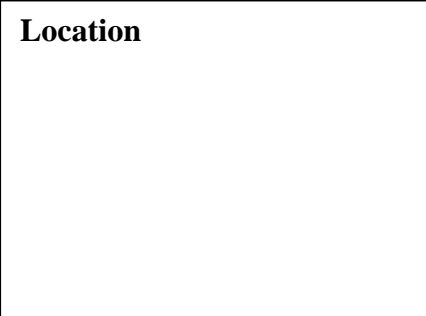





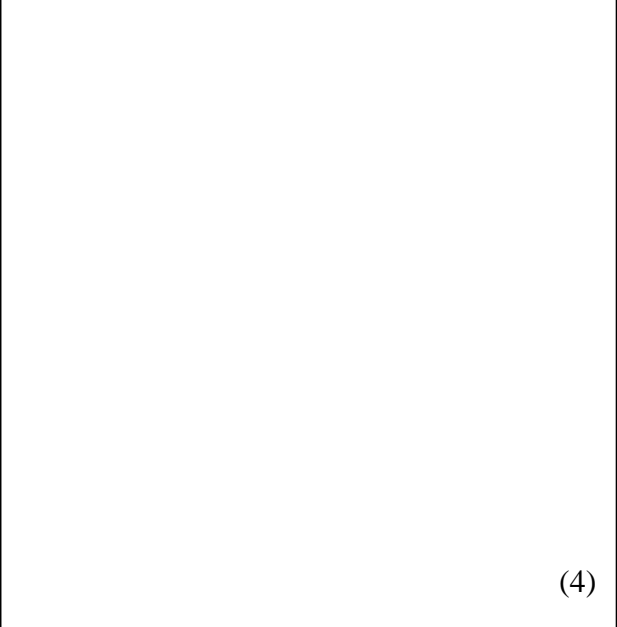
An example is given in Figure 4 to assist you.

[38]

Q3 subtotal


4. **Economic activities and tourism**

Using the topographical map and orthophoto map as resources, **design** an information page for tourism on the Calitzdorp website by including information on location, climate, activities and where to stay. Use the template on pages 14 and 15.

CALITZDORP TOURISM	
<p>Location</p> 	 <p>(4)</p>
<p>Climate</p> 	 <p>(2)</p>
<p>Activities</p>  	 <p>(4)</p>

(Table continues on next page)

Where to stay?



→

(2)

[12]

Q4 subtotal

Total marks: 100

Rough work (Not for marks)