



NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2013

GEOGRAPHY: PAPER II

MARKING GUIDELINES

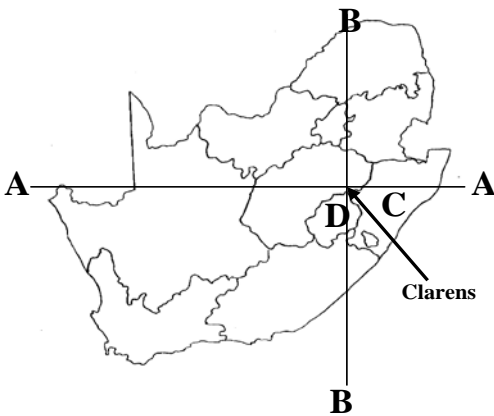
Time: 1½ hours

100 marks

These marking guidelines are prepared for use by examiners and sub-examiners, all of whom are required to attend a standardisation meeting to ensure that the guidelines are consistently interpreted and applied in the marking of candidates' scripts.

The IEB will not enter into any discussions or correspondence about any marking guidelines. It is acknowledged that there may be different views about some matters of emphasis or detail in the guidelines. It is also recognised that, without the benefit of attendance at a standardisation meeting, there may be different interpretations of the application of the marking guidelines.

Location map: Location of Clarens in South Africa

	<p>The town of Clarens is situated in the foothills of the Maluti Mountains in close proximity to the Golden Gate National Park and the mountain kingdom of Lesotho. Clarens is an artist's haven with many well known artists who either live in or frequent the town on a regular basis. The village is surrounded with scenic views. The mild climate makes for the ideal weekend getaway for city dwellers from Johannesburg, Bloemfontein and Durban. These cities are all approximately 300 km from Clarens – a comfortable 3 to 4 hours drive away.</p> <p>The town is known as the 'Jewel of the Free State' – rich in beauty, with an aura of peace and tranquillity.</p>
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[Adapted from: <clarens.co.za>]

QUESTION 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 ...

28° 25' S	
28° 25' E	
28° 31' E	
28° 31' S	X

(1)

1.1.2 The map projection used to produce the topographical map extract 2828CB CLARENS is ...

Gauss Conform	X
Mercator	
Peters	
U T M	

(1)

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

Eastern Cape	
Free State	
Gauteng	
KwaZulu-Natal	X

(1)

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

Botswana	
Lesotho	X
Mozambique	
Swaziland	

(1)

1.1.5 The road distance (km) along the 712 on the 1:50 000 topographic map extract from the intersection of the roads 711 (E4) and 712 (A4) to Golden Gate is ...

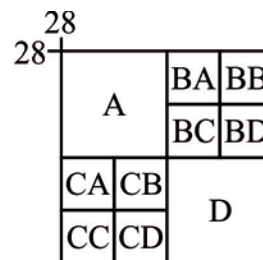
7.8 km	
14 km	
21.8 km	✓
29.5 km	

Distance = 15,5 cm

(2)

1.1.6 The map reference of the topographic map sheet to the north-east of 2828CB CLARENS is ...

2828AD	
2828BC	X
2828CC	
2828DA	



(2)

1.2 **Map orientation and geographical techniques**

Refer to the topographic map extract 2828CB CLARENS.

1.2.1 The true bearing of trigonometric beacon 175 (C3) from the trigonometric beacon 8 at Mount Horeb (A6) is ...

45°	
115°	
235°	X
270°	

(2)

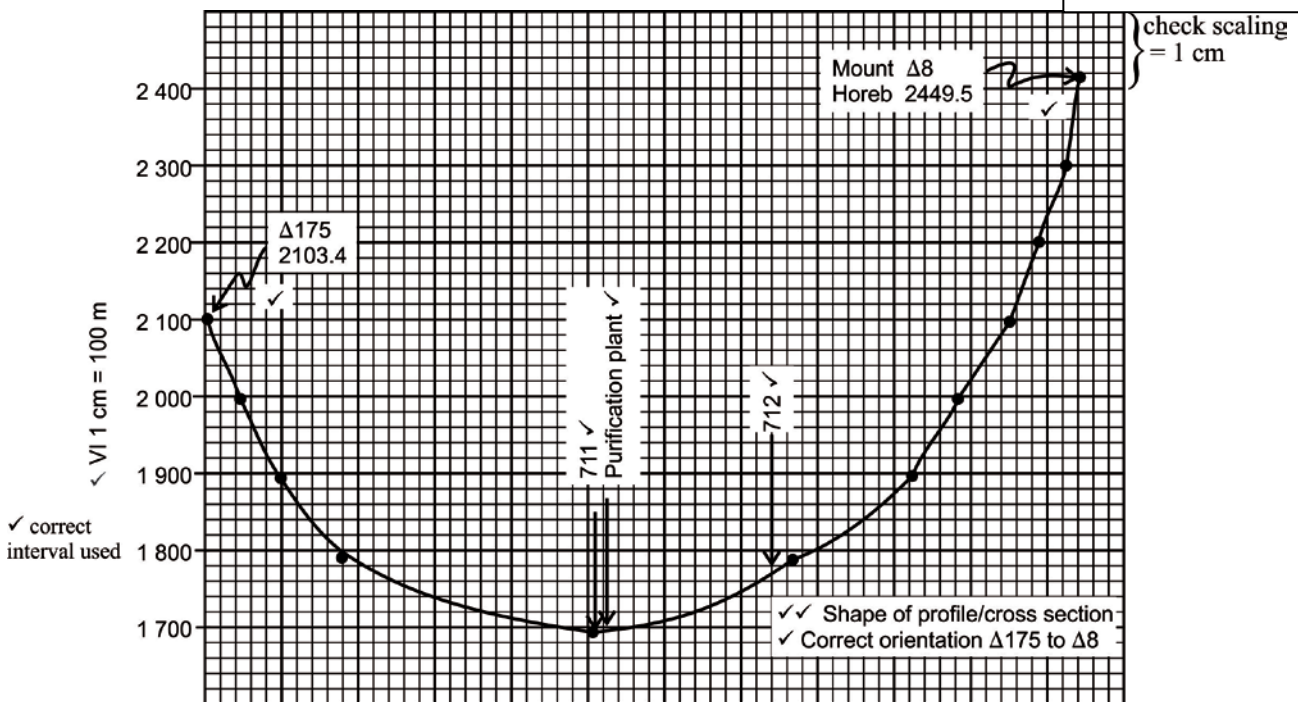
1.2.2 **Cross section**

(a) **Draw** a cross section from trigonometric beacon 175 (C3) to the trigonometric beacon 8 (A6), using the graph paper on page 5. (6)

Use a vertical interval of 1 cm = 100 m.

Note: To assist you, use only the 100 m index contour lines.

Goes a bit higher than shown



(b) Indicate the position of the following on the above cross section:

- road 711
- road 712
- purification plant

(3)

If wrong interval used, loose that mark as well as only 1 mark for shape
 If back to front, loose orientation mark and mark the mirro image

- (c) **Describe** the shape of the slope between road 712 and Mount Horeb (A6) on the cross section (page 5). Tick the correct description below.

Concave	X
Convex	
Terraced	
Vertical	

(2)

- (d) **Determine** the vertical scale of the cross section drawn on page 5 as a representative fraction.

1: 10 000

(2)

- (e) **Calculate** the vertical exaggeration of the cross section drawn on page 5.

5 times

(4)

Calculations	
(d) 1 cm = 100 m	(e) $VE = \frac{VS}{HS}$
$\therefore 1 \text{ cm} = 100 \times 100$	$\frac{1 : 10\ 000}{1 : 50\ 000}$
= 10 000 cm	$\frac{50\ 000}{10\ 000} = 5 \text{ times}$
VS 1 : 10 000	

Give methods marks for VE – formula and steps (2)

[27]

Q1 subtotal

QUESTION 2 Climate and drainage of the area

2.1 Study Figure 1, a rainfall graph of Clarens.

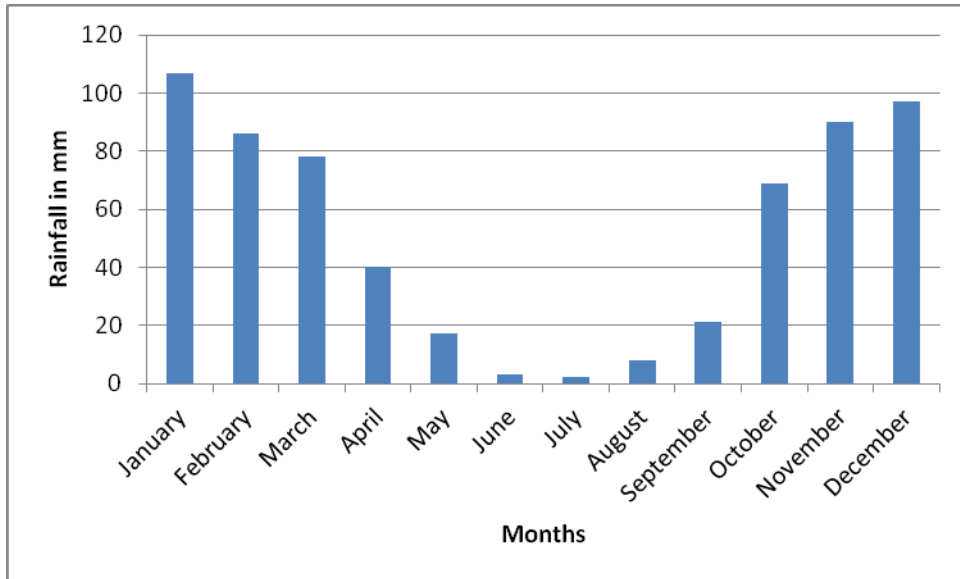


Figure 1: Rainfall graph of Clarens

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

618 mm (Range 610 – 625) (2)

One mark only for range: 605-609 and 626-629

2.1.2 Given the above rainfall data, **suggest** a reason why there are many non-perennial rivers in the area.

- The rainfall graph shows a seasonal pattern, as there is very little rainfall in winter and rivers may cease to flow; summer rainfall. (2)

2.2 **Drainage of the area**

Refer to the topographic map extract 2828CB CLARENS.

2.2.1 A drainage basin has been marked off on the map in blocks D5-6, E5-6 and F5-7. This area falls on the farm Schaapplaats 1785.

(a) **Identify** the stream pattern found in this basin.

Dendritic ✓ ✓; branching or tree-like (2)

(b) **Describe** the shape of the basin.

Inverted 'pear-shape'/pear-shaped/tree-shaped (2)

/elongated/rectangular/teardrop

2.2.2 The sketch below (Figure 2) is a copy of the streams in the drainage basin (Question 2.2.1). Note the drawing has been enlarged.

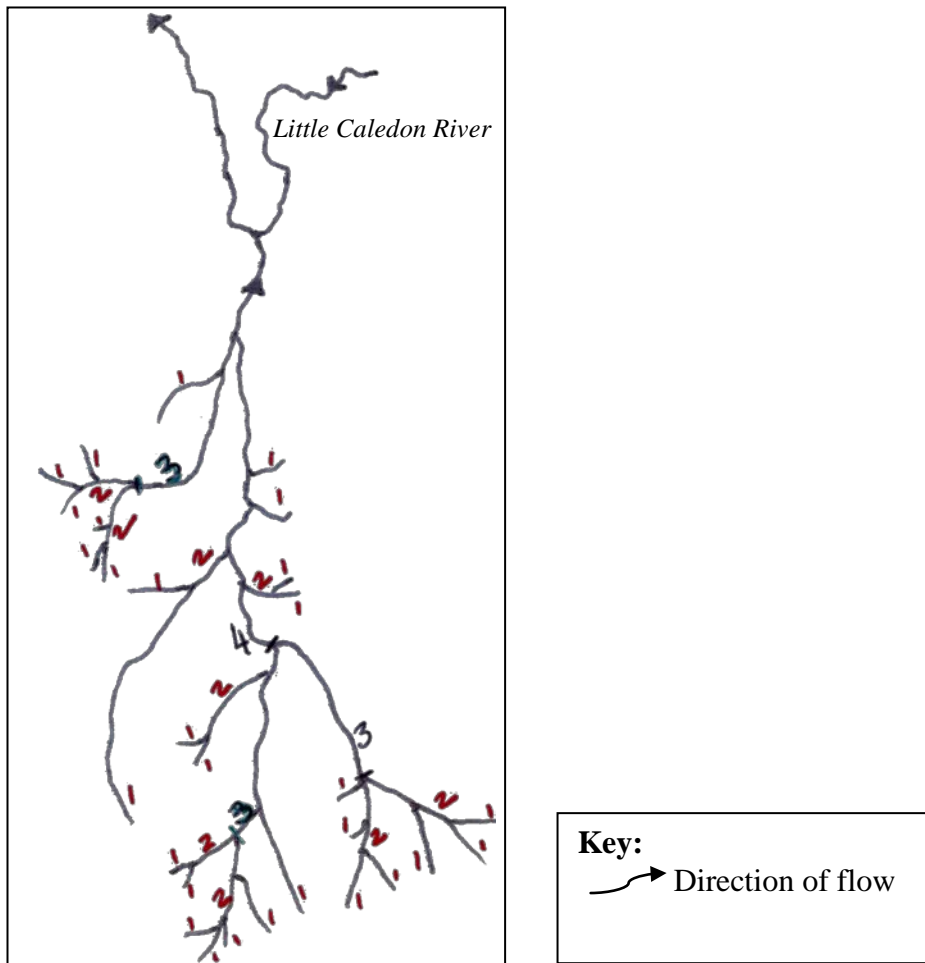


Figure 2: Drainage basin

- (a) **Order** the streams in the marked drainage basin (up to the confluence point with the Little Caledon River). Complete the table below to show the number of tributaries for each stream order.

Stream order	1	2	3	4
Number of tributaries	29	9	3	1

(4)

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

As the stream order increases in value, the number of tributaries for

each order decreases/converse statement – as stream order decreases,

(2)

the number of tributaries increases/ inversely proportional relationship

(c) The owners of the farm Dunblane (B1, C2) have planned their water resources effectively. **Suggest** how the owner of Schaapplaats E5-6 could sustainably use and manage water resources on their farm.

- Build one or two dams on the river/weir for damming effects
- Build reservoirs for water storage
- Use furrows or canals for irrigation

Any relevant suggestion: put in borehole/windpump to source

(4)
[18]

ground water;

Q2 subtotal

To use the river but must give the how ✓

Rainfall harvesting, use of Jojo tanks

QUESTION 3 Settlement patterns

3.1 Refer to the topographic map extract 2828CB Clarens. Tick the correct answer.

3.1.1 Farms Mombasa in I2 and Braamhoek in G8 are ... rural settlements.

Circular	
Clustered	
Dispersed	X
Nucleated	

(2)

3.1.2 According to the urban hierarchy, Clarens is classified as a ...

City	
Hamlet	
Metropolitan area	
Minor country town	X

(2)

3.1.3 Applying central place theory to the settlement of Clarens, one could say that Clarens offers ...

A large population	
No low order goods and services	
Mainly high order goods and services	
Mainly lower order goods and services	X

(2)

3.2 Refer to Photograph 1 (colour Insert) and the topographic map extract. The area shown in Photograph 1 has been marked off on the topographic extract in green and labelled Photograph 1.

(a) **Name** the pink/red boundary line which follows the Caledon River.

International boundary_____

(1)

- (b) **Compare** the settlement patterns and land use north and south of the Caledon River on Photograph 1 and the topographic map extract, by completing the table.

Compare	North of the Caledon River	South of the Caledon River
Settlement patterns	<u>Dispersed or isolated</u> Scattered (2)	<u>Nucleated or clustered</u> Linear, flowing roads and rivers (2)
Density of settlement	<u>Sparse</u> <u>Low density</u> (2)	<u>Close together</u> <u>Higher density</u> (2)
Location of the farmland (fields)	<u>Flat valley, low-lying /lowlands/gradual slope; close to river</u> (2)	<u>Flat – valley, low-lying; floodplain; gradual slope; close to river</u> North-facing slopes (2)
Sustainability of the farming in the area	<u>Commercial, large scale farming. Land look well managed, less erosion.</u>	<u>Subsistence, small-scale farming. Bare ground exposed, could lead to erosion and loss of top soil.</u> (2)

Extensive use

Water resources

(2)

Less land for cultivation (16) because of high pop. density [23]
Close to river, plenty of water can sustain farming

Q3 subtotal

QUESTION 4 Developments in the area

4.1 Study aerial Photograph 2 (Insert) which shows the area in A4 and A5 on the topographic map extract. Refer to the topographic map extract and Photograph 2.

A new Trout and Golf Estate is located in the block labelled T (Photograph 2) (Block A4 on the topographic map extract).

4.1.1 **Describe** the site and situation of the new Trout and Golf Estate.

Accept ONE factor each.

Site: ● Foot of the mountain range (Rooiberge) – flatter area

● Next to a river ; fertile soils

Situation: ● Close to Clarens (just outside of the town); NE of Clarens; South of Rooiberge

● Along to the 712 road; at junction of

● Close to the Golden Gate; close to Lesotho border

● 35 km from Bethlehem; Free State (4)

Co ordinate references 28°31'S 28°25'E

4.1.2 Another new estate development is being built in the area labelled U (Photograph 2) (A5 on the topographic map extract).

(a) **Suggest** ONE reason why the owner of the farm Bethel (A5) sold off a portion of their land for this new development.

● Not suitable for cultivation (too steep, cold)

● Income for farmer; land better used for development (2)
Any suitable suggestion.

South facing – too much shadow in winter

(b) **List** ONE advantage and ONE disadvantage of the location of this new housing development.

Advantage	Disadvantage
<ul style="list-style-type: none"> ● <u>Close to Clarens and the 712</u> ● <u>Scenic setting</u> ● <u>Peaceful/tranquil</u> ● <u>Equidistant from JHB, Bloem and DBN – ideal getaway place</u> 	<ul style="list-style-type: none"> ● <u>Very steep, building costs high</u> ● <u>South-facing slope – cold Aspect/climate aspect</u> ● <u>Flooding (due to gradient of slope – water runs off the slope as well as in the channels</u> ● <u>Isolated</u>

● Security – on outskirts; expensive and risky (4)

4.1.3 A number of different GIS maps for Clarens are shown in Figure 3 (A – C) together with a key (Figure 3D). Figure 3 is also found on page ii of the colour Insert.

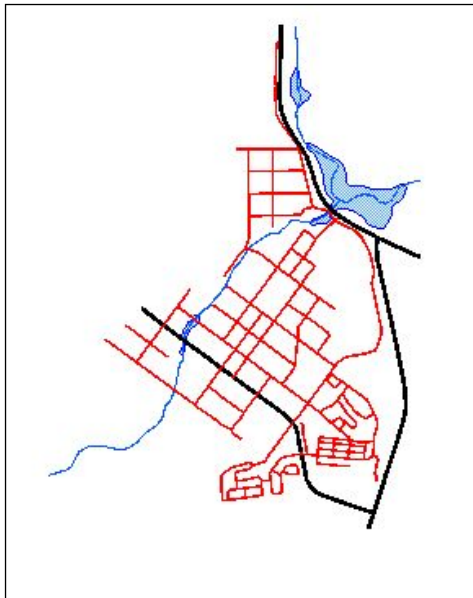


Figure 3A Clarens: Roads and rivers

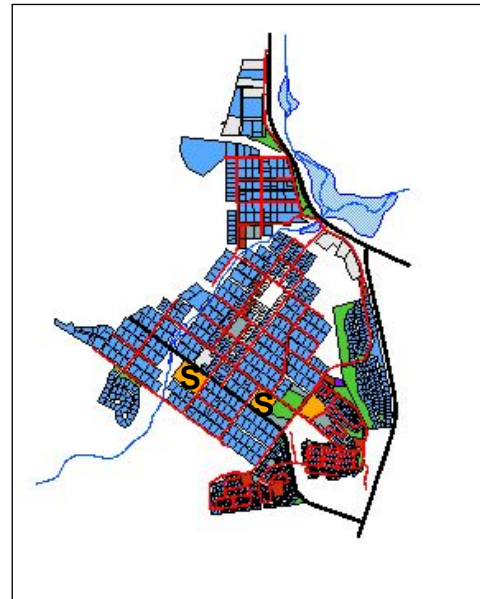


Figure 3B Clarens: Land use

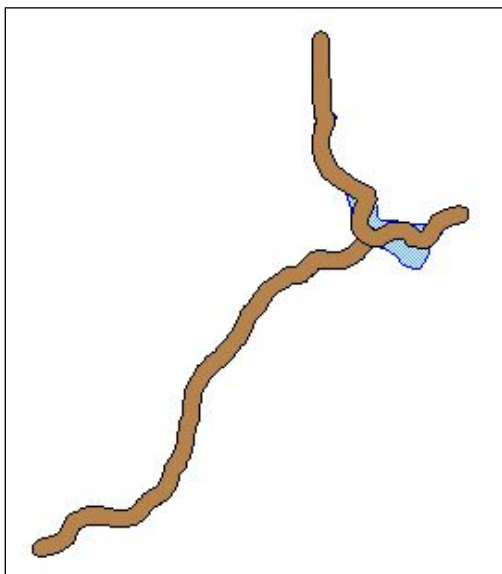


Figure 3C Clarens: Buffer zones along rivers



Figure 3D Clarens: Key

Figure 3 (A – D): Different GIS maps for Clarens

- (a) With reference to Figures 3 (A – C), **explain** the GIS concept of overlaying.

In a GIS various layers or themes of information can be placed one on top of the other to give an integrated product. This is layering.

Superimposing layers of information to generate new map (CONCEPT is important) (2)

- (b) **Identify** the main street pattern of Clarens in Figure 3B.

Grid/planned/rectangular (2)

- (c) **Identify** the type of symbol used in a GIS with reference to Figures 3 (A – C). Complete the table below by placing a tick in the correct box, indicating the type of symbol used in a GIS for the features listed below. Refer to the land use key (Figure 3D).

Symbol	Roads	School (S)	Land parcels – land use
Point		either	
Line			
Polygon (area)		or	

(6)
[20]

Q4 subtotal

QUESTION 5 Economic Activities

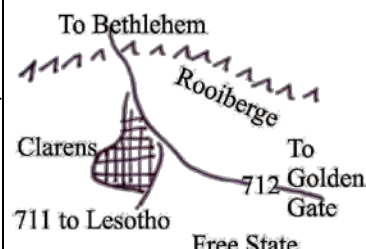
Design an information page for a tourism website for Clarens. Include information on location, climate, activities to do and where to stay. Use the template on the following page.


[12]

Q5 subtotal


CLARENS TOURISM

Back to HOME PAGE

<p>Location (include a sketch map)</p> <p>Any 3 locational features, but no mark for Clarens</p>	<p>Map to find Clarens</p>  <p>(3)</p>	<p>GPS co-ordinates</p> <p>28°31'S 28°25'E</p> <p>(1)</p>
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<p>Climate</p> 	<ul style="list-style-type: none"> • Cold in winter; warm in summer (continental climate) • Mild climate (warm summers, mild winters) • Summer rainfall area <p>(2)</p>
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<p>Activities</p>  	<ul style="list-style-type: none"> • Art Galleries • Golf • Fish (Trout Estate) • Visit the Golden Gate • Hiking/walking in Rooiberge • Scenic views – go for drives/walks to admire scenery • Close to Lesotho – visit attractions in Lesotho • White water rafting/tubing • Any suitable activity <p>(4)</p>
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<p>Where to stay</p> 	<ul style="list-style-type: none"> • Bed and Breakfast places • Golden Gate • Camping • Farm stays • Hotels, motels and lodges • Guest houses • Family and friends <p>(2)</p>
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Total: 100 marks