



NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2014

GEOGRAPHY: PAPER II

MARKING GUIDELINES

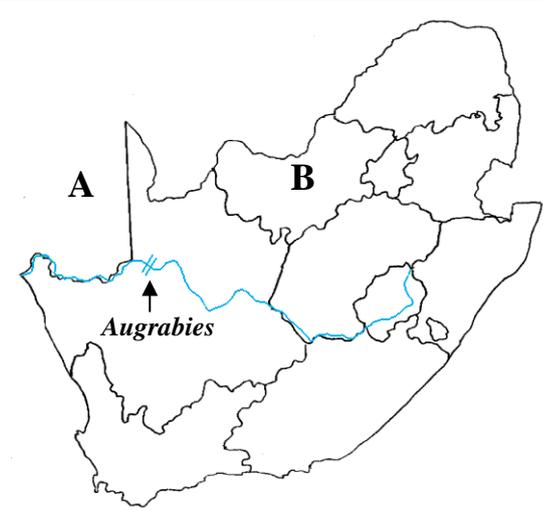
Time: 1½ hours

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 Augrabies in South Africa

	<p>As the Orange River approaches the Augrabies Falls (known as 'Aukoerebis', or place of Great Noise), it divides itself into numerous channels before cascading down the 56 m high waterfall. The river then continues its path through an 18 km gorge. Augrabies is situated in a semi-arid region, which implies low annual rainfall and extreme variations of temperatures. The small towns of Augrabies and Marchand lie on the banks of the Orange River about 100 km downstream from Upington and are surrounded by lush green vineyards. The towns are mostly populated by workers from the vineyards. The climate is ideal for the production of sultanas and raisins.</p>
---	--

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

QUESTION 1 Atlas use, map orientation and techniques

1.1 Refer to the location map above, as well as the topographic map extract 2820CB AUGRABIES to answer the following questions. Tick the correct box.

1.1.1 The neighbouring country labelled A on the location map above is ...

Angola	
Botswana	
Lesotho	
Namibia	

(1)

1.1.2 The province labelled B on the location map above is ...

Northern Cape	
Free State	
North West	
Gauteng	

(1)

1.1.3 The longitude reference of the Augrabies National Park's eastern boundary, extending from A8 to D8 on the topographic map is ...

28° 22' 30"E	
20° 22' 30"S	
28° 35' 32"S	
20° 22' 30"E	

(1)

1.2.2 **Circle** the correct answer from the options below:

The mean magnetic declination for the topographic map extract 2820CB AUGRABIES in 2014 will be 19° 24' S/19° 24' E/19° 24' W of true north. (1)

1.2.3 **Gradient**

Refer to the topographic map extract 2820CB AUGRABIES.

Calculate the average gradient from spot height 844 (B10) to the reservoir in C9.

(a) Difference in height: Range 160–164 164 m (1)

(b) Distance between the two points: 900 m (1)

(c) Gradient: **1: 5 – 1 : 6** (2)

Calculations:

(a) Difference in height $844 - 680 = 164$ m

(b) Distance $1.8 \text{ cm} \times 500 = 900$ m
(1.7 – 1.9 cm) Range 850 – 950 m

(c) $G = \frac{1}{\frac{900}{164}} = \frac{1}{5.49}$

Allow for method mark in(c) if answer incorrect; but check the method is correct.
Allow for a suitable range of answers. 1:5 to 1:6

[24]

Q1 subtotal

QUESTION 2 Geomorphology of the area: drainage and relief features

Study the topographic map extract 2820CB AUGRABIES.

2.1 Complete the following sentences, by inserting the correct fluvial term.

2.1.1 The point at which two rivers meet (for example in B7) is the confluence point.

2.1.2 The Orange River channel displays a braided pattern in E10.

2.1.3 The drainage density in D1 is low /coarse.

2.1.4 Tributaries in A6 show non-perennial /seasonal / periodic stream flow.

2.1.5 The dominant drainage pattern in F8 is a parallel pattern.

(10)

2.2 The dominant drainage pattern in B1 is dendritic. **Suggest** how the underlying rock structure has influenced the formation of this drainage pattern.

- Uniformly consistent, hard rock/ homogenous underlying geology/ rock of equal resistance to erosion.

(2)

2.3 Study the course of the Orange River in blocks A4 and B4, 5 and 6.

2.3.1 There is evidence that rejuvenation has taken place. **Identify** TWO river features that form as a result of rejuvenation. Give the block reference of each feature.

Feature	Block Reference
1 Steep valley sides	A4, B4 or B5, B6
2 Gorge	A4, B4 or B5, B6
3 (Knickpoint) waterfall Could refer to Misval and Tweeling waterfalls	B6, B4, B5
4 Incised meander	A4, B4 or B5, B6

Any 2 correct answers.

(4)

2.3.2 The Orange River in this area shows an antecedent drainage pattern. This drainage pattern ... (Tick the correct option)

A	forms in areas that have been flooded	
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)

2.4 Study Photograph 1 below and the topographic map extract 2820CB AUGRABIES. The image is also in colour on the Insert. The photograph covers the approximate area A3 – 6 and B3 – 6.

Photograph 1: Aerial photograph/ satellite image of Orange River



2.4.1 Various features have been labelled on Photograph 1. With reference to the topographic map extract, **identify** these features by matching the correct word in the text box below to the features labelled A – D.

- | | | |
|-----------------|-------------------|---------------------|
| • Swartrante | • Augrabies Falls | • Gorge |
| • Tierhokeiland | • Arrow Point | • Lenhoff se Eiland |

Features	Name or description
A	Swartrante
B	Tierhokeiland
C	Augrabies Falls
D	Gorge

(4)
[22]

Q2 subtotal

QUESTION 3 Settlement patterns and farming activities

Refer to the topographic map extract 2820CB AUGRABIES and the key of conventional signs.

3.1 Locate the settlement of Augrabies (F11 and G11).

3.1.1 **Identify** FOUR services provided in this settlement area.

- Schools
- Church
- Police Station
- Water/ Electricity/roads (only 1 mark)
- Clinic
- Post Office
- Cemetery (4)

3.1.2 **State** the dominant street pattern of the settlement of Augrabies.

- Irregular; planned irregular / haphazard / unplanned (2)

3.1.3 **Account for** the location of the secondary road (R359) in G11.

- On the edge (above) of flood plain, to avoid the danger of flooding
- Safe access route to the farms as well as the National Park
- On the flat plains following the contours
- Road bypasses the town
- Must show some linking in the account (2)

3.1.4 Locate the farm in C9.

(a) Using evidence in C9, **state** the direction of the prevailing wind.

NW winds (winds blow towards the SE) (2)

(b) **Give** ONE piece of evidence that supports your answer in Question 3.1.4 (a).

The rows of trees (windbreaks) are all on the NW side of the vineyards.

Also in other areas of the map, for example F4. Candidates may give

other examples from the map area. (2)

(c) **Explain** the methods that the farmer in C9 uses to manage the water resources on the farm.

- Reservoirs and dams for storage of water
- Canals and furrows for irrigation from the Orange River (4)

3.1.5 (a) Locate the farm in G8. **Calculate** the area in m² of the area labelled E (marked in red on the map). Tick the correct answer.

0,60 m ²	
60 m ²	
60 000 m ²	
600 000 m ²	

(3)

(b) Given that 1 ha equals 10 000 m², **calculate** the area of this farmland (E) in hectares.

60 ha (1)

Calculations:

<p>(a)</p> <p>Length 2 cm = 1000 m</p> <p>Width 1.2 = 600 m</p> <p>A = ℓ × b</p> <p>= 1000 × 600</p> <p>= 600 000 m²</p> <p>Range in length 1.9 – 2.1cm</p> <p>Width 1.1 -1.3 cm</p>	<p>(b)</p> <p>ha</p> <p><u>600 000</u></p> <p>10 000</p> <p>= 60 ha</p>
---	---

Award 2 marks for method if answer (a) not correct – must be correct method

[20]

Q3 subtotal

QUESTION 4 Photograph analysis and GIS

Refer to the extract below.

Each year the **Kalahari Augrabies Extreme Marathon** draws extreme sport enthusiasts to participate in a gruelling seven day, 250 km run in the Kalahari Desert. The **marathon** is limited to 100 participants with the trail winding its way through rugged and spectacular terrain. The third day of the marathon takes participants along the Klipspringer Hiking trail (indicated in B4 on the topographic map).

[Adapted from <www.southafrica.com>]

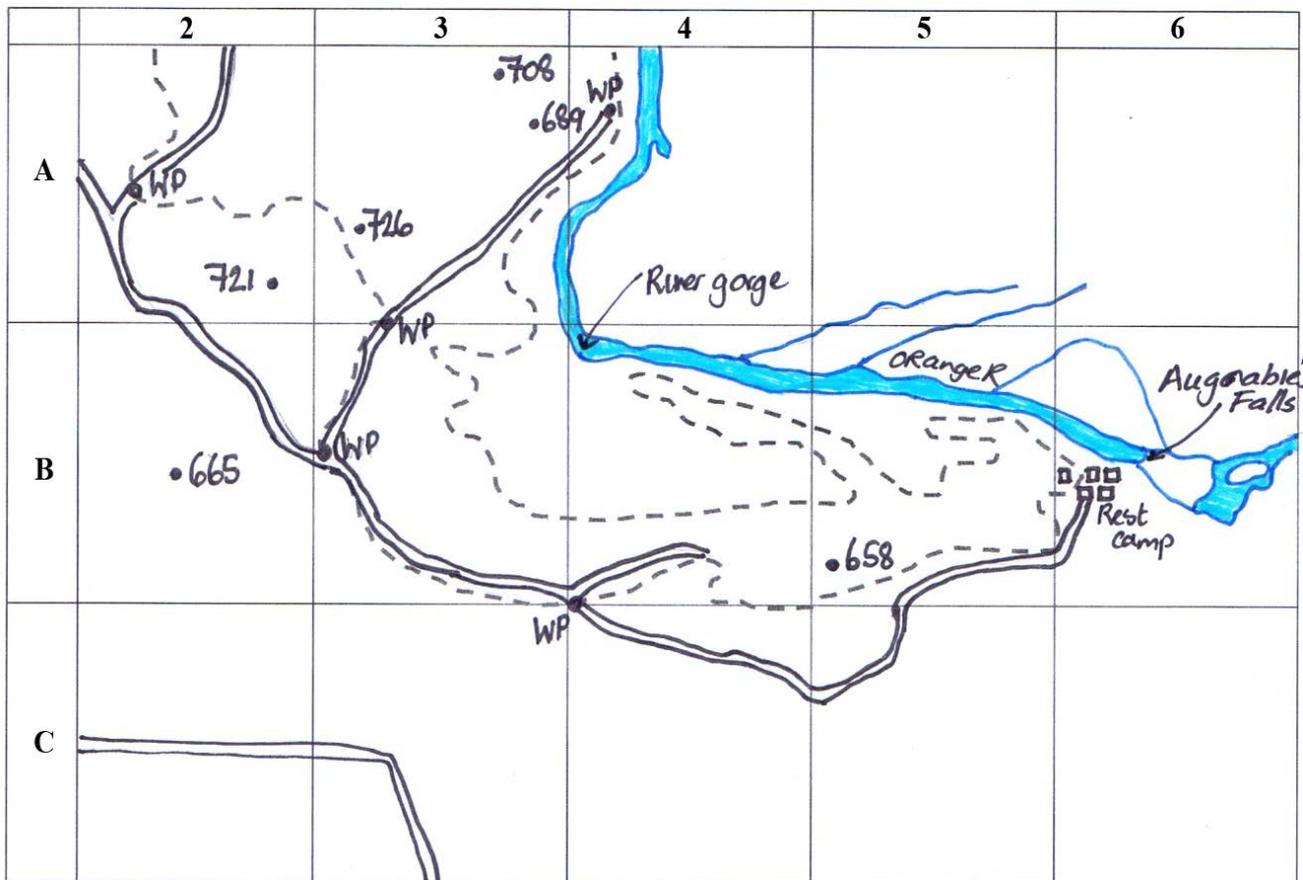
4.1 Refer to the topographical map extract 2820CB AUGRABIES. Focus on the blocked area A2 – 6, B2 – 6, and C2 – 6 (marked in green on the map). The Klipspringer Hiking Trail has been inserted in the template below.

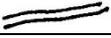
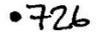
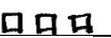
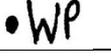
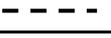
Draw a land-use map of the area marked in the grid below by sketching in the following features:

- The course of the Orange River (label all fluvial features)
- Dirt (other) roads
- Spot heights and trigonometrical beacons/ stations above 650 m – 6 spot heights
- The rest camp

(8)

Provide labels on your map and complete the key on page 11.



Key:	
	Course of the Orange River (course, 1 feature labelled and accuracy)
	Dirt (other) roads (main dirt road and 1 other)
	Spot heights and trigonometrical beacons/ stations above 650 m (2 spot heights)
	The rest camp
	Water point 4.2.1 (5 possibilities)
	The Klipspringer Hiking Trail

Refer to map regularly to check the candidates answers.

4.2 4.2.1 A GIS specialist has determined that the best place to locate a water point is where the road intersects with the trail route. Given this information, **indicate** ONE point on your sketch map (page 10) where a water point (WP) should be located. (2)

4.2.2 The highest point along the trail has also been determined. This is marked **W** on the topographic map extract.

Provide the following information for this point.

Latitude	28°34'() 38" ()S (35-41'')
Longitude	20°17'() 15" ()E (9-15'')
Altitude	726 m()

(6)

4.3 4.3.1 What data layers of information would a GIS system need to put in a new landing strip close to the Klipspringer trail? **Give** TWO pieces of information for your answer.

1 Relief – flat land/gradients/ gentle land/ contours

2 Land-use – farming / built-up- settlement / access to roads

3 Drainage feature – danger of flooding/ washaways

4 Surrounding obstacles / underlying rock type/ vegetation cover (4)

4.3.2 A landing strip is going to be built in B4. **Suggest** TWO reasons for the suitability of this site.

• Close to dirt road – accessible to vehicles / access to a tourist area

• Main tourist area – provides access to a very remote area – medical emergencies

• Flat land – easy to construct

• Within national park –easy to fly in/ access to remote areas = pleasure, trail and falls

- No vegetation / bush easy for construction
- Away from settlement Must look at suitability to get 2 marks.

(4)

[24]

Q3 subtotal

QUESTION 5 Economic activities and land-use in rural settlements

Refer to Photograph 2 (Insert) and the topographic map extract 2820CB AUGRABIES. The area shown in Photograph 2 is marked by a red border on the topographic map extract.

5.1 **Discuss** farming in the area referred to above under the following headings (use map and photograph evidence to support your answers:
Must use evidence from the photograph and map – not definition

Intensive – patchwork pattern; all available land is utilised, especially along floodplain / talk about the land-use

Commercial – very well organised; evidence of irrigation farming; good water resources such as canals, weirs, dams, furrows etc; well developed infrastructure/road network; specialized farming such as grapes and drying –sultanas; could mention a farm by name e.g. E11 Deklery

(4)

5.2 **Outline** THREE factors that may hinder* commercial farming/agriculture in the area referred to above.

- Climate – arid – low rainfall; extremes of temperature/ high evaporation/ frost
- Flooding – most of farming on islands along flood plain/drought
- Labour unrest – for example striking for pay increase / land claims
- Remoteness / isolation – difficult to get perishables to market
- Soil erosion – flooding removes soil / silting of the weirs
- High costs of petrol/diesel/transport/fertilizer
- Power outages – affects irrigation
- Water pollution – can't use for irrigation

Allow for suitable answers to be given.

(6)

*hinder: to make difficult

[10]

Q5 subtotal

Total: 100 marks