



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 13 pages and a colour photograph Insert of one (i) page. 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 topographic map extract 2820CB AUGRABIES and the accompanying aerial photograph sheet (Photograph 1 and Photograph 2 on the colour photograph Insert) before answering the questions.
6. The topographic map has grid lines with markings A to G and 1 to 12 that may be used to identify locations according to blocks.
7. The topographic map, the aerial photograph sheet and your completed Answer Book must be handed to the invigilator at the end of the examination. The maps and photographs 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. No marks will be allocated to rough work.

FOR MARKER'S USE ONLY

Question	1	2	3	4	5	Total
Marks						

Glossary of terms

WORD	MEANING
Account for	To explain why, by giving reasons.
Calculate	To work out the value of something using a mathematical method.
Circle	To draw a circle around something.
Discuss	To write about something in detail.
Explain	To describe something so that it can be understood.
Give/ provide	To state or present the information.
Identify	To give the details or characteristics of something.
Indicate	To show or point out the position of something.
Outline	To give the main features or general principles of a subject.
Provide/ give	To state or present the information.
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

Canal	Kanaal
Diggings	Delwerye
Farm	Plaas
Furrow	Kanaal/ Voor
Hiking trail	Staproete
Island	Eiland
Landing strip	Landingstrook
Marsh, swamp or wetland	Vlei
Mountain	Berg
Rapids	Stroomversnelling
Rest Camp	Vakansieoord
Ridge	Rant
River	Rivier
Road	Pad
Stream	Spruit/ Stroom
Waterfall	Waterval

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>
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[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)

1.1.4 The length of the landing strip in E4 (topographic map) is ...

90 m	
180 m	
900 m	
1 800 m	

(2)

1.1.5 The regional weather system most affecting this area is the/ a ...

Coastal low	
Kalahari sub-tropical anticyclone	
South Indian high	
Tropical cyclone	

(1)

1.1.6 A number of physical features (A to D) have been labelled on the topographic map extract. **Identify** each labelled feature by **circling** the correct underlined word(s).

A (Block A10) farm boundary/ provincial boundary/ protected area boundary

B (Block C5) dry pan/ reservoir/ sewage works

C (Block G8) cultivated lands/ orchards – vineyards/ cemetery

D (Block G8) brush fencing/ river tree line/ row of trees (8)

1.1.7 (a) How many landing strips are there in the mapped area? _____ (1)

(b) **Suggest** ONE reason why there are a number of landing strips in the area.

(2)

1.2 **Geographical techniques**

1.2.1 The approximate bearing from spot height 658 (B5) (Moon Rock) to spot height 726 (A3) (Swartrante) is ... (Tick the correct option)

54°	
234°	
306°	
354°	

(2)

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: _____ m (1)

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

(c) Gradient: **1:** _____ (2)

Calculations:

[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

_____.

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

2.1.3 The drainage density in D1 is _____.

2.1.4 Tributaries in A6 show _____ stream flow.

2.1.5 The dominant drainage pattern in F8 is a _____ 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.

- _____
- _____

(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 _____	_____
2 _____	_____

(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	<input type="checkbox"/>
B	develops when the river is 'older' than the features it flows over	<input type="checkbox"/>
C	develops when the river is 'younger' than the features it flows over	<input type="checkbox"/>
D	forms when one river captures another river's headwater	<input type="checkbox"/>

(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 the 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 words 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	
B	
C	
D	

(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.

- _____
- _____
- _____
- _____ (4)

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

- _____ (2)

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

- _____
_____ (2)

3.1.4 Locate the farm in C9.

- (a) Using evidence in C9, **state** the direction of the prevailing wind.
- _____ (2)

- (b) **Give** ONE piece of evidence that supports your answer in Question 3.1.4 (a).
- _____ (2)

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

 - _____
_____ (4)

- 3.1.5 (a) Locate the farm in G8. **Calculate** the area in m^2 of the area labelled E (marked in red on the map). Tick the correct answer.

0,45 m^2	
45 m^2	
45 000 m^2	
450 000 m^2	

(3)

- (b) Given that 1 ha equals 10 000 m^2 , **calculate** the area of this farmland (E) in hectares.

_____ ha

(1)

Calculations:

[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 topographic 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
- The rest camp

(8)

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

	2	3	4	5	6
A					
B					
C					

Key:	
	Course of the Orange River
	Dirt (other) roads
	Spot heights and trigonometrical beacons/ stations above 650 m
	The rest camp
	Water point 4.2.1
- - - -	The Klipspringer Hiking Trail

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 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	
Longitude	
Altitude	

(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 _____

2 _____

(4)

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

- _____

- _____

(4)

[24]

Q4 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):

Intensive _____

Commercial _____

(4)

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

- _____

- _____

- _____

(6)

[10]

*hinder: to make difficult

Q5 subtotal

Total: 100 marks

Rough work (Not for marks)