



Province of the
EASTERN CAPE
EDUCATION

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

SEPTEMBER 2016

GEOGRAPHY P2

MARKS: 75

TIME: 1½ hours

NAME: _____

		MARKS	MOD
Q1	15		
Q2	20		
Q3	25		
Q4	15		

TOTAL MARKS	MOD
75	75



This question paper consists of 14 pages, including 1 page for
rough work and calculations.

RESOURCE MATERIAL

1. An extract from topographic map 2820CB AUGRABIES.
2. Orthophoto map 2820CB 7 AUGRABIES.
3. **NOTE:** The resource material must be collected by schools for their own use.

INSTRUCTIONS AND INFORMATION

1. Write your NAME in the space provided on the cover page.
2. Answer ALL the questions in the spaces provided in this question paper.
3. You are provided with a 1 : 50 000 topographic map (2820CB AUGRABIES) and an orthophoto map (2820CB 7 AUGRABIES) of a part of the mapped area.
4. You must hand the topographic map and the orthophoto map to the invigilator at the end of this examination session.
5. You must use the blank page at the back of this paper for all rough work. DO NOT detach this page from the question paper.
6. Show ALL calculations and formulae, where applicable. Marks will be awarded for these.
7. Indicate the unit of measurement in the final answer of calculations. Ensure that units are maintained throughout ALL your calculations and final answer.
8. You may use a non-programmable calculator.
9. A glossary of some of the English and Afrikaans words and their translations appears below.

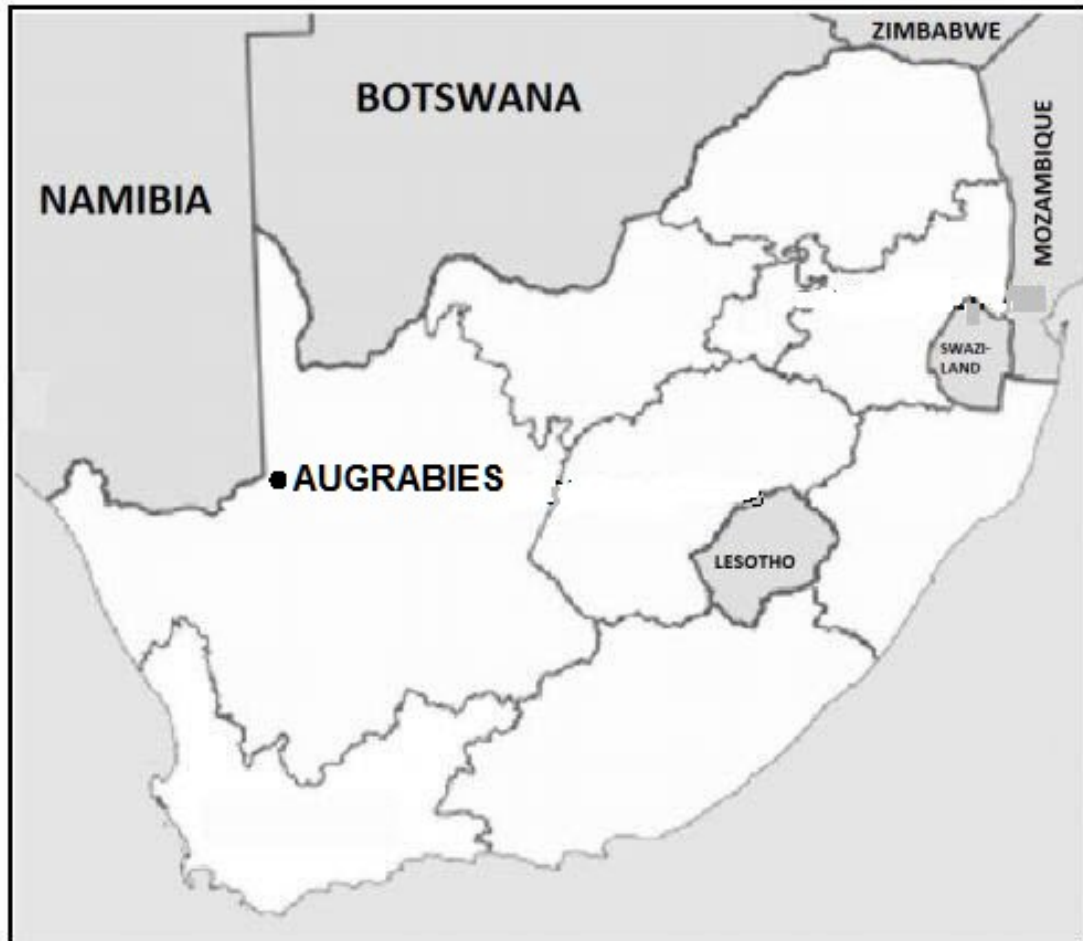
GLOSSARY

(SOME OF THESE ENGLISH TERMS OR THEIR AFRIKAANS TRANSLATIONS MAY APPEAR ON THE MAPS.)

ENGLISH	AFRIKAANS
Canal / Furrow	Kanaal / Voor
Island	Eiland
Hiking trail	Voetslaanpad
River	Rivier
North	Noord
National park	Nasionale Park
Weir	Keerwal
Butte	Butte
Augrabies Falls	Augrabiesvalle

GENERAL INFORMATION ON AUGRABIES

The Augrabies Falls National Park is one of 21 national parks in South Africa. The Khoi named the falls “Aukoerebis” meaning ‘place of great noise’. The powerful flow of water drops nearly 100 m into the Orange River Gorge, a steep incised valley which extends for 18 m downstream. The 55 383 hectares on both the northern and southern sides of the Orange River provide sanctuary to a diversity of species and wildlife.



Coordinates: 28°39'50"S20°25'30"E/28°39,8'S20°25,5'E.

QUESTION 1: MULTIPLE-CHOICE QUESTIONS

The questions below are based on the 1 : 50 000 topographic map 2820 CB AUGRABIES, as well as the orthophoto map of a part of the mapped area. Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A–D) in the block next to each question.

1.1 The map to the south-west of the map 2820CB Augrabies is ...

- A 2820CC.
- B 2820DC.
- C 2820AC.
- D 2820BC.

1.2 At what altitude would you be walking if you are at I along the hiking track, in block **D8**, on the topographic map?

- A 600 m
- B 620 m
- C 640 m
- D 660 m

1.3 The feature, Waterval, labelled **J**, in block **B7**, on the topographic map is a ...

- A ruin.
- B farmhouse.
- C post office.
- D farm school.

1.4 The Orange River is an example of a ... river.

- A periodic
- B episodic
- C seasonal
- D permanent

1.5 The general direction of flow of stream **K**, in block **G2**, on the topographic map is ...

- A north north east.
- B south south west.
- C north east.
- D south west.

1.6 The true bearing of trigonometrical beacon, in block **G9** from spot height 632, on the topographic map in block **F11** is ...

- A 141°.
- B 39°.
- C 88°.
- D 242°.

☐

1.7 The stream order at **L** in blocks **E12**, on the topographic map is ...

- A 4.
- B 1.
- C 2.
- D 3.

☐

1.8 The human-made feature, labelled **1** on the orthophoto map is a/an ...

- A other road.
- B powerline.
- C railway line.
- D fence.

☐

1.9 The landform between **2** and **3** on the orthophoto map is a ...

- A spur.
- B river valley.
- C saddle.
- D butte.

☐

1.10 The drainage pattern of the area marked **M**, in block **E5**, on the topographic map is ...

- A parallel.
- B trellis.
- C radial.
- D rectangular.

☐

1.11 The location (grid reference) of Omdraai labelled **N**, in block **E9**, on the topographic map is ...

- A 28°37'30"E 20°21'10"S/28°37,5'E 20°21,1'S.
- B 20°23'15"S 28°37'50"E/20°23,2'S 28°37,8'E.
- C 28°37'25"E 20°23'13"S/28°37,5'E 20°23,2'S.
- D 28°37'25"S 20°23'13"E/28°25,4'S 20°23,2'E.

☐

1.12 The type of rural settlement pattern found at **N** in block **E9** on the topographic map is ...

- A dispersed.
- B linear.
- C circular
- D irregular.

☐

1.13 The land use found at **4** on the orthophoto map is ...

- A cultivated land.
- B a mine dump.
- C a rest camp.
- D a farmhouse.

☐

1.14 Augrabies marked **O**, in block **G11**, on the topographic map, is an example of a ... town.

- A central place
- B recreational
- C gap
- D bridge

☐

1.15 **P** in block **C4** on the topographic map is a/an ...

- A watershed.
- B drainage basin.
- C interfluve.
- D confluence.

☐

(15 x 1) (15)
[15]

QUESTION 2: MAPWORK CALCULATIONS AND TECHNIQUES

2.1 Consult the topographic map and answer the following questions. You may use the orthophoto map.

2.1.1 Calculate the area in km² of the orthophoto map highlighted in red. Show ALL calculations. Marks will be awarded for calculations.

(5 x 1) (5)

2.1.2 Why does the area covered by the orthophoto map look smaller on the topographic map?

(1 x 1) (1)

2.2 2.2.1 Calculate the average gradient between spot height 658 and spot height 627, in block **C5**. Show ALL calculations. Marks will be awarded for calculations.

Formula: *Gradient* = $\frac{\text{Vertical interval (VI)}}{\text{Horizontal equivalent (HE)}}$

(4 x 1) (4)

- 2.2.2 (a) Is the gradient, answer to QUESTION 2.2.1, a true reflection of the actual gradient between spot height 627 and spot height 658?

(1 x 1) (1)

- (b) Give a reason for your answer to QUESTION 2.2.2(a).

(1 x 1) (1)

- 2.3 Study the area between the contour line indicated as **5** (620 m) and **6** (620 m) on the orthophoto map.

- 2.3.1 Draw a rough cross profile (not to scale) of the valley between **5** and **6**, below.



(2 x 1) (2)

- 2.3.2 Determine the intervisibility between **5** and **6**.

(1 x 1) (1)

- 2.4 Using the information on the topographical map, determine the magnetic declination for the year 2016.

Show ALL calculations. Marks will be awarded for calculations.

Difference in years:

Total change:

Magnetic declination for 2016:

(5 x 1)

(5)

[20]

QUESTION 3: APPLICATION AND INTERPRETATION

3.1 Refer to block **C6** on the topographic map showing rejuvenation.

3.1.1 Define the term *rejuvenation*.

(1 x 1) (1)

3.1.2 Give evidence from the topographic map showing rejuvenation.

(1 x 2) (2)

3.2 In the mapped area the Orange River is in its middle course. Give TWO pieces of evidence from the map to support this statement.

(2 x 2) (4)

3.3 3.3.1 Give TWO reasons evident on the topographic map, which indicate that the mapped area receives limited rainfall.

(2 x 2) (4)

3.3.2 State ONE method that the rural settlement in block **D11**, implemented to supplement the limited water available.

(1 x 1) (1)

- 3.4 Evaluate the effect that the Orange River had on the construction of transport routes.

(2 x 2) (4)

- 3.5 Study the agricultural area in the vicinity of the area numbered **Q**, on the topographic map.

3.5.1 Name TWO agricultural activities found in this area.

(2 x 1) (2)

3.5.2 Suggest TWO reasons evident on the topographic map, that favoured farming in the vicinity of **Q**.

(2 x 2) (4)

- 3.6 List TWO services offered by the town of Augrabies, labelled **O**, on the topographic map.

(2 x 1) (2)

- 3.7 What evidence suggests that conservation is taking place on the mapped area?

(1 x 2) (2)

[25]

QUESTION 4: GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

4.1 Choose the correct answer from those given between brackets.

4.1.1 An aerial photograph uses (raster/vector) data.

(1 x 1) (1)

4.1.2 A spot height on a topographic map represents data in the form of a (polygon/point/line).

(1 x 1) (1)

4.1.3 (Spatial/Spectral) resolution is the number of pixels used in digital image.

(1 x 1) (1)

4.1.4 An orthophoto map that contains vector and raster data is an example of data (integration/fragmentation).

(1 x 1) (1)

4.2 GIS is useful in disaster management. The Augrabies Municipality is concerned about developments which may be too close to the river or the natural floodplain in block **G11**, on the topographic map.

4.2.1 What is a *geographical database*?

(1 x 1) (1)

- 4.2.2 Evaluate the suitability of using satellite images in obtaining geographical information in the event of the Orange River flooding the floodplain.

(2 x 2) (4)

- 4.2.3 Explain the role of buffering in protecting the floodplain.

(1 x 2) (2)

- 4.2.4 Explain how GIS could assist the local authorities with planning after flooding in the Augrabies area.

(2 x 2) (4)

[15]

TOTAL: 75

ROUGH WORK-AND CALCULATIONS

(NOTE: Do not detach this page from the question paper.)

