**NATIONAL
SENIOR CERTIFICATE**

GRADE 11

NOVEMBER 2017

GEOGRAPHY P2

MARKS: 75

TIME: 1½ hours

NAME: _____

		MARKS	HOD	CLUSTER	PROVINCIAL
Q1	**15**				
Q2	**20**				
Q3	**25**				
Q4	**15**				

	TOTAL MARKS	MOD
	75	**75**

This question paper consists of 15 pages, including a page
for rough work and calculations.

RESOURCE MATERIAL

1. An extract from topographic map 3224 BA & BC GRAAFF-REINET

2. Orthophoto map 3224 BC 1 GRAAFF-REINET

3. **NOTE:** The resource material must be collected by the 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 on this question paper.

3. You are provided with a 1 : 50 000 topographic map (3224 BA and BC GRAAFF-REINET) and an orthophoto map (3224 BC 1 GRAAFF-REINET) of a part of the mapped area.

4. You must hand in 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. The area demarcated in RED on the topographic map represents the area covered by the orthophoto map.

10. A glossary of some of the English and Afrikaans words and their translations appears below.

ENGLISH	AFRIKAANS
Landing strip	Vliegveld
Furrow	Voor
Caravan Park	Karavaanpark
Canal	Kanaal
Sewerage works	Rioolwerke
Golf Course	Gholfbaan
Excavation	Uitgrawing
Nature reserve	Natuurreservaat
Rifle Range	Skietbaan
Aerodrome	Vliegveld
Ravine	Kloof

GENERAL INFORMATION ON GRAAFF-REINET

Set in a curl of the Sundays River, the Karoo town of Graaff-Reinet is the fourth oldest settlement in South Africa and overshadowed by the rocky Sneeuberg Mountain within the Camdeboo National Park. From here, you can also see the Valley of Desolation and get a good sense of the utter vastness of the Great Karoo. Modern Graaff-Reinet is based on tourism, game farming and traditional stock like Merino sheep and 'white gold': angora goats, which give mohair.
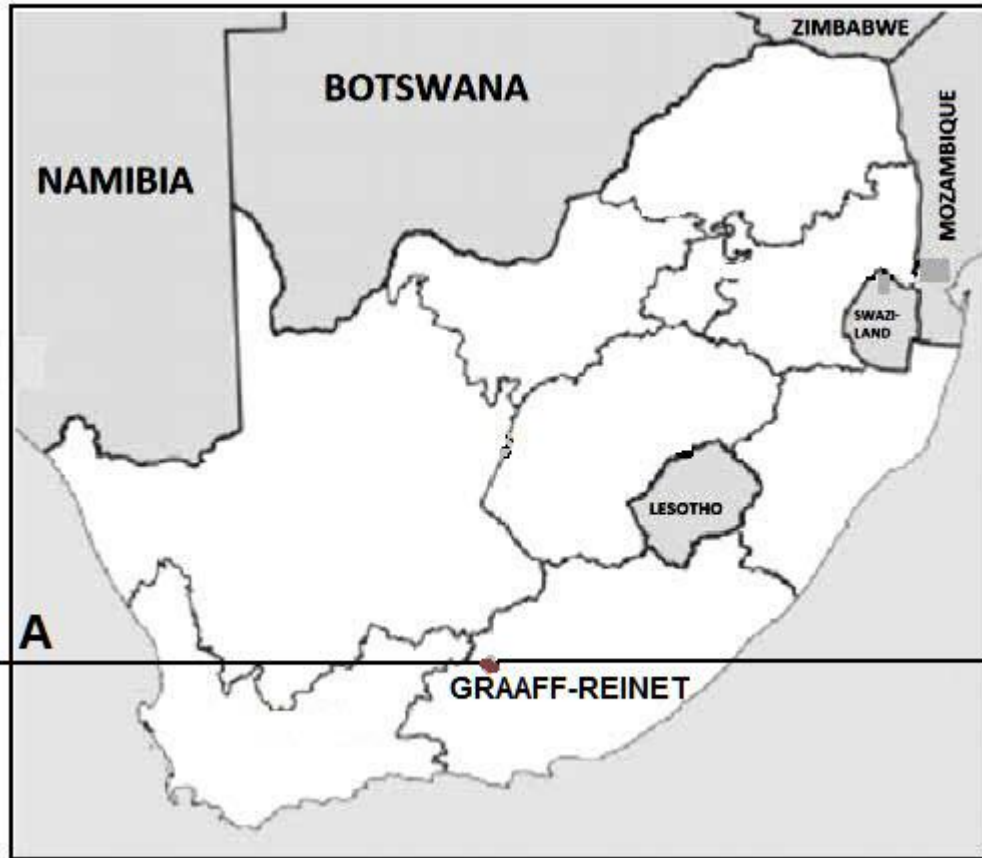
Source: Examiner

Coordinates: 32°15′08″S 24°32′26″E / 32°15,1′S 24°32,4′E

QUESTION 1: MULTIPLE-CHOICE QUESTIONS

The questions below are based on the 1 : 50 000 topographic map
3224 BA and BC GRAAFF-REINET, 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 reference of the orthophoto map north of Graaff-Reinet is …

        A   3224BA21.
        B   3224BC1.
        C   3224BC6.
        D   3224BC7.

1.2   The line of latitude marked **A** on the general information map on page 3
        is …

        A   24°S.
        B   32°E.
        C   25°E.
        D   32°S.

1.3   The Sondagsrivier/Sundays River in block **G2**, on the topographic map
        flows in a … direction.

        A   north-easterly
        B   southerly
        C   north-westerly
        D   westerly

1.4   The map projection used on the Graaff-Reinet map is the … projection.

        A   transversal
        B   Lambert
        C   Mercator
        D   Gauss conform

1.5   The number, **1**, on the orthophoto map refers to a …

        A   secondary road.
        B   arterial road.
        C   railway line.
        D   main road.

1.6   The type of slope of the landscape from **2** to **3** on the orthophoto map is …

        A   steep.
        B   concave.
        C   convex.
        D   stepped.

1.7   The approximate time the orthophoto was taken would be …

     A   between 08:00–10:00.
     B   between 10:00–12:00.
     C   between 12:00–14:00.
     D   exactly at 17:00.

1.8   The dams that are found in the rural area of Graaff-Reinet are mainly used for …

     A   recreation.
     B   agricultural purposes.
     C   industrial purposes.
     D   domestic purposes.

1.9   The landform labelled **4** between spot height 1338 to trigonometric station 1303 on the orthophoto map is a …

     A   plain.
     B   saddle.
     C   spur.
     D   pass.

1.10   The Camdeboo National Park marked **B** on the topographic map is situated in the …

     A   Drakensberg.
     B   Graaff-Reinet Mountains.
     C   Sneeuberg Mountains.
     D   Outeniqua Mountains.

1.11   The location (co-ordinates) of the trigonometric station number 202 in block **D13** is …

     A   24°42'16"S 32°12'22"E / 24°42,2'S 32°12,3'E.
     B   32°12'55"S 24°47'20"E / 32°12,9'S 24°47,3'E.
     C   24°44'10"E 32°12'40"S / 24°44,1'E 32°12,6'S.
     D   32°12'22"S 24°42'21"E / 32°12,3'S 24°42,2'E.

1.12   Identify the man-made feature found at **6** on the orthophoto map.

     A   Golf course
     B   Excavation
     C   Farm lands
     D   Dry pans

1.13　　The true bearing from the Conical Hill, in block **A12** to trigonometrical station 202 in block **D13**, on the topographic map is …

　　　　A　　22°.
　　　　B　　338°.
　　　　C　　142°.
　　　　D　　158°.

1.14　　Feature **E** in block **H14/I14** on the topographic map is a …

　　　　A　　ravine / kloof.
　　　　B　　poort.
　　　　C　　pass.
　　　　D　　waterfall.

1.15　　The contour interval on the orthophoto map is … metres.

　　　　A　　2
　　　　B　　5
　　　　C　　10
　　　　D　　20

[15]

　　　　　　　　　　　　　　　　　　　　Please turn over

QUESTION 2: MAPWORK CALCULATIONS AND TECHNIQUES

2.1   2.1.1   The scale of the topographic map is 1 : 50 000. Write down as a word scale.

_____

                                                    (1 x 1)   (1)

2.1.2   What is the straight-line distance from **G** in block **I2** to **H** in block **H2**? Give your answer in metres.

_____

_____

                                                    (2 x 1)   (2)

2.2   Using the information on the topographic map, determine the magnetic declination for 2017.

Show ALL calculations. Marks will be awarded for calculations.

Difference in years: _____

Mean annual change: _____

Total change: _____

Magnetic declination for 2017: _____
                                                    (5 x 1)   (5)

2.3   Locate points **C** (block **A10**) and **D** (block **B11**) on the topographic map.
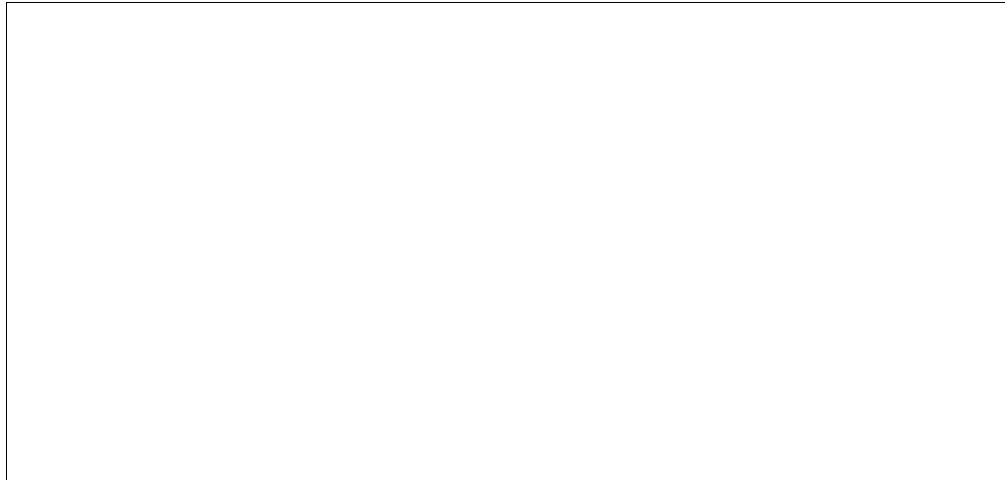
2.3.1   Calculate the average gradient between point **C** and point **D** on the topographic map.

Show ALL calculations. Marks will be awarded for calculations.

Formula: Gradient = $\dfrac{\textbf{Vertical interval (VI)}}{\textbf{Horizontal equivalent (HE)}}$

_____

_____

_____

_____

_____

                                                    (5 x 1)   (5)

2.3.2   Refer to points **C** and **D** on the topographic map and draw a free-hand cross-section.

(1 x 1)   (1)

2.3.3   Is there intervisibility between point **C** and point **D**?

Give a reason for your answer.

Answer: _____

Reason: _____

_____

(1 + 1)   (2)

2.3.4   Assume that a rough cross-section you drew in QUESTION 2.3.2 is using a vertical scale of 1 cm = 20 m. Calculate the vertical exaggeration of the cross-section.

Show ALL calculations. Marks will be awarded for calculations.

Formula: $VE = \frac{VS}{HS}$

_____

_____

_____

_____

(4 x 1)   (4)
[20]

QUESTION 3: APPLICATION AND INTERPRETATION

3.1   The sketch map below represents the area covered on the topographic
      map in the following blocks **E1**, **2**, **3**, **4** / **F1**, **2**, **3**, **4** and **G1**, **2**, **3**, **4**. Study
      the topographic map and then indicate the features, referred to in
      QUESTIONS 3.1.1–3.1.5 as accurately as possible on the sketch map.
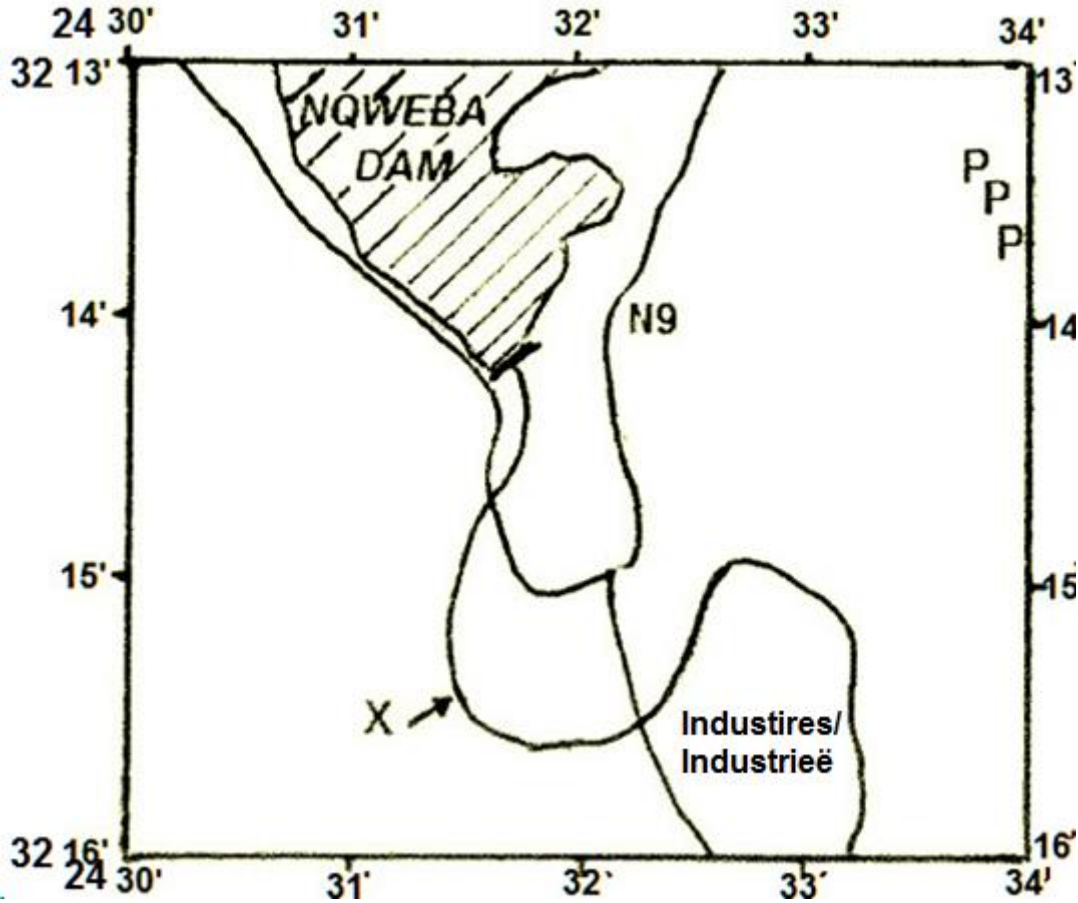
3.1.1   Use arrows (➡️ ➡️) to show the flow direction of the river at **X**.

On the sketch   (1 x 1)   (1)

3.1.2   Use the letter **R** to indicate where the R63 links Graaff-Reinet with
        Murraysburg.

On the sketch   (1 x 1)   (1)

3.1.3   Use the letter **T** to indicate on the sketch the position of Lokasiekop
        trigonometric beacon.

On the sketch   (1 x 1)   (1)

3.1.4   Indicate the human activity found at **P**.

P = _____

(1 x 1)   (1)

3.1.5   If the prevailing wind is north-west, name ONE residential area that will be affected by air pollution from the factories in block **G3**, on the topographic map.

_____

(1 x 1)   (1)

3.2   The mapped area surrounding Graaff-Reinet has been exposed to drought and desertification.

3.2.1   Define the term *drought.*

_____

_____

(1 x 1)   (1)

3.2.2   Identify and explain ONE major environmental impact of drought in the Graaff-Reinet area, in block **C10**.

_____

_____

_____

_____

(1 + 2)   (3)

3.2.3   Local water supplies are of great importance in the Graaff-Reinet area.

List FOUR measures that the farmer in blocks **D9/10** has used to solve the negative effects of drought.

_____

_____

(4 x 1)   (4)

3.3 Refer to blocks **D10**, **D11** and the picture below of the road cutting through the mountains and answer the following questions.

3.3.1 Name the *mass movement* that is likely to occur along the road.

_____

(1 x 1) (1)

3.3.2 Suggest TWO solutions to prevent further mass movement as identified in QUESTION 3.3.1.

_____

_____

_____

(2 x 2) (4)

3.4 Refer to the horizontal landforms labelled **F** (block **F10**) and **G** (block **I2**) on the topographic map.

3.4.1 Name the landforms found at **F** and **G** respectively.

F = _____

G = _____

(2 x 1) (2)

3.4.2 Which igneous intrusion forms the hard cap at the top of the feature labelled **F**? Sill **or** Dyke.

_____

(1 x 1) (1)

3.4.3 Evaluate TWO negative consequences that this type of landscape has on the economic potential of the area.

_____

_____

_____

(2 x 2) (4)
[25]

QUESTION 4: GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

4.1   4.1.1   Is the orthophoto map of Graaff-Reinet, a vector or raster map?

_____

(1 x 1)   (1)

      4.1.2   Give a reason to support your answer to QUESTION 4.1.1.

_____

_____

(1 x 2)   (2)

4.2   Identify a polygon feature, a line feature and a point feature respectively in block **A3**.

Polygon = _____

Line = _____
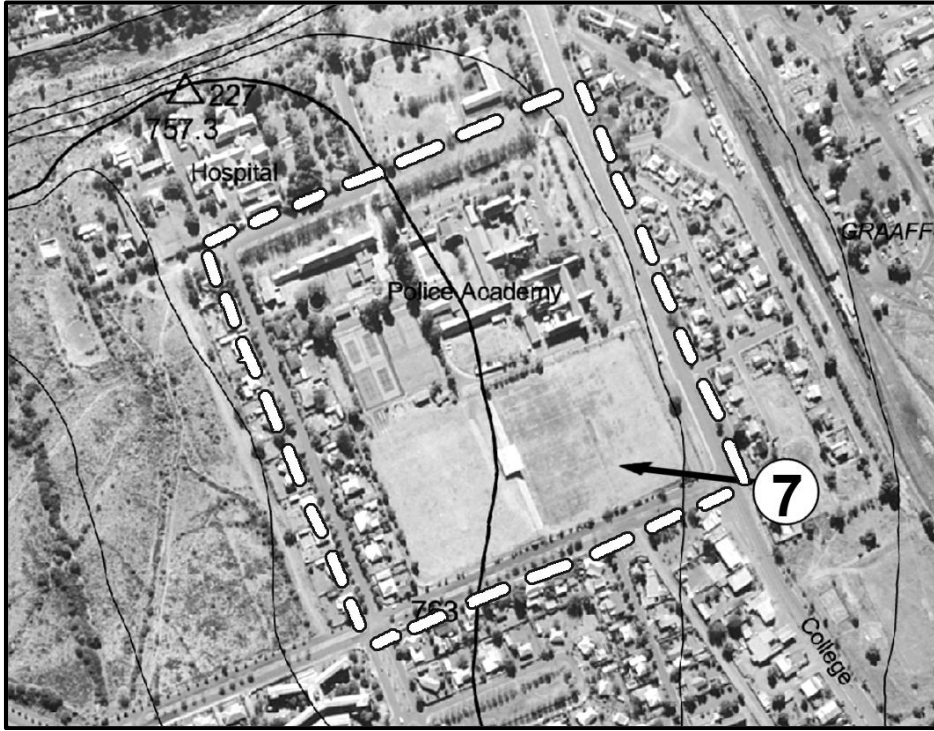
Point = _____

(3 x 1)   (3)

4.3   Refer to the Police Academy labelled **7** on the orthophoto map and the TWO inserts **A** and **B** below.

A

B

[Source: *Orthophoto* map extract Graaff-Reinet]

4.3.1　Define the term *spatial resolution*.

_____

_____

　　　　　　　　　　　　　　　　　　　　　(1 x 1)　(1)

4.3.2　Which picture, **A** or **B**, has the higher resolution?

_____

　　　　　　　　　　　　　　　　　　　　　(1 x 1)　(1)

4.3.3　Give ONE reason to your answer in QUESTION 4.3.2.

_____

_____

_____

　　　　　　　　　　　　　　　　　　　　　(1 x 2)　(2)

　　　　　　　　　　　　　　　　　　　　Please turn over

4.4 Refer to the Police Academy marked **7** on the orthophoto map and answer the following questions.

    4.4.1 Define the term *attribute data.*

                                                                          (1 x 1)   (1)

    4.4.2 You are tasked to create an attribute table for the Police Academy database. Name THREE attributes you would consider including in your GIS.

                                                                          (3 x 1)   (3)

    4.4.3 Give the spatial position of the Police Academy labelled **7**.

                                                                      (1 x 1)   (1)

                                                                              [15]

                                                                      TOTAL: **75**

ROUGH WORK AND CALCULATIONS
NOTE: DO NOT remove this page from the question paper.