Province of the
EASTERN CAPE
EDUCATION

NAME: _____ **GRADE 10 ____**

SURNAME: _____

NATIONAL SENIOR CERTIFICATE

GRADE 10

NOVEMBER 2017

GEOGRAPHY P2

MARKS: 75

TIME: 1½ hours

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

TOTAL MARKS	MOD.
75	75

This question paper consists of 13 pages, including 1 page for rough work and calculations.

RESOURCE MATERIAL

1. An extract from topographic map 3224 BA and 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 in 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.

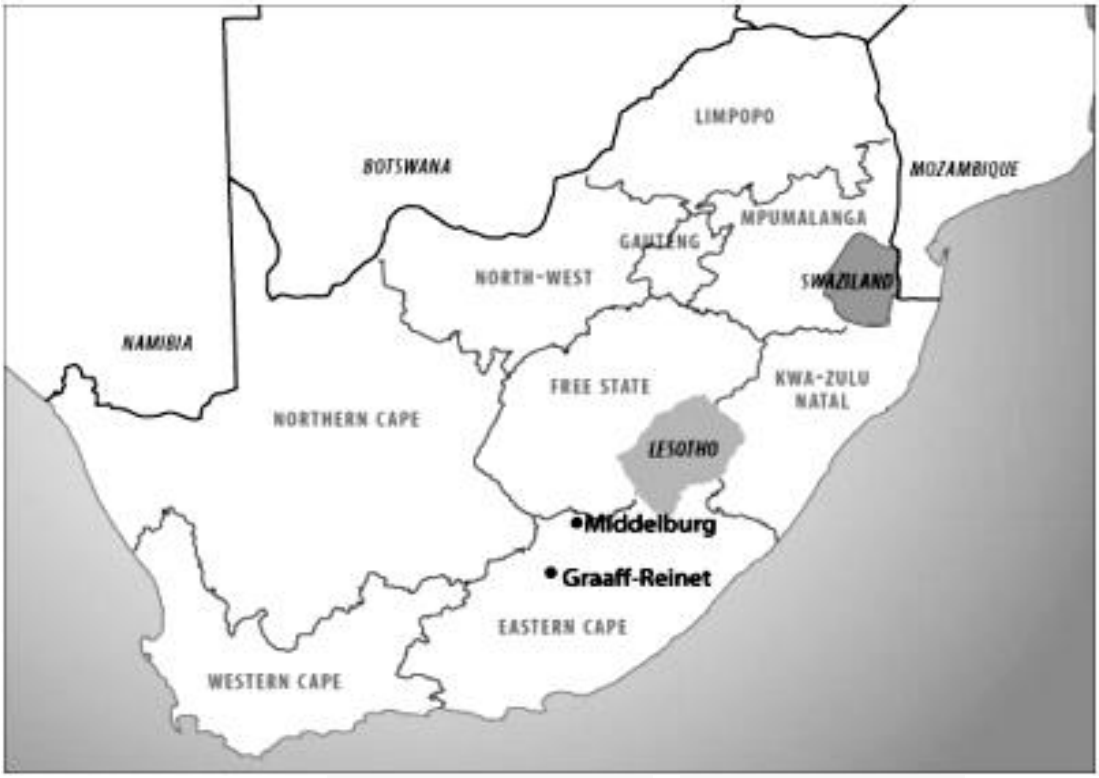
10. A glossary of some of the English and Afrikaans words and their translations appears below.

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

Graaff-Reinet is a small town in the Eastern Cape with a population of around 36 000. This town is in the Sarah Baartman District and is one of the oldest towns in South Africa after Cape Town, Stellenbosch and Swellendam.

Nature conservation is a priority in this area, the Camdeboo National Park almost surrounds Graaff-Reinet. It provides the visitor with insights into the unique landscape and ecosystem of the Karoo. Space, nature and heritage combine to offer a Karoo tourism experience.



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

[Source: *https://www.google.co.za/images*]

QUESTION 1: MULTIPLE-CHOICE QUESTIONS

The questions below are based on the 1:50 000 topographic map 3224 BA & 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 code of the topographic map of Graaff-Reinet indicates that the town lies on the ...

A 32ºE longitude and 24ºN latitude.
B 32ºN longitude and 24ºE latitude.
C 32ºS latitude and 24ºE longitude.
D 24ºS latitude and 32ºE longitude.

1.2 The contour interval of the orthophoto map is …

A 20 m.
B 10 m.
C 15 m.
D 5 m.

1.3 The map scales that are evident on the topographic map is a … scale.

A ratio and a word
B ratio and a fraction
C line and a ratio
D line and a word

1.4 The man-made feature at **6** on the orthophoto map is a …

A golf course.
B caravan park.
C stadium.
D parking area.

1.5 Graaff-Reinet is in the … province.

A Western Cape
B Eastern Cape
C KwaZulu-Natal
D North West

1.6 The scale of the orthophoto map is … than that of the topographic map.

A 5 times larger
B 5 times smaller
C 10 times larger
D 10 times smaller

1.7 The landform that is found at **F** in block **F10** is a ...

A conical hill.
B cliff.
C mesa.
D butte.

1.8 Feature labelled **G** in block **I2** is a …

A benchmark.
B trigonometrical station.
C spot height.
D reservoir.

1.9 The co-ordinates of the spot height 1076 in block **G7** are …

A 32º15'27"S 24º36'16"E.
B 24º36'16"S 32º15'27"E.
C 32º15'00"E 24º36'00"S.
D 32º16'00"S 24º37'00"S.

1.10 Development east of Kroonvale in block **G4** is limited owing to …

A a lack of transport.
B non-perennial water.
C steep terrain.
D churches.

1.11 The national route on the topographic map in block **F3** is the …

A R63.
B N10.
C N7.
D N9.

1.12 The altitude shown by the trigonometric station in block **F4** is …

A 13 m.
B 88 m.
C 1217,3 m.
D 1144 m.

1.13 The feature numbered **1** on the orthophoto map which acts as a windbreak is a …

A wall.
B road.
C row of trees.
D reservoir.

1.14 The type of map projection used in the topographic map is:

A Mercator
B Gauss conform
C Polar stereographic
D Central meridian

1.15 The major primary activity visible in block **A3** is …

A fishing.
B mining.
C forestry.
D farming.

(15 x 1) **[15]**

SECTION B: MAPWORK CALCULATIONS AND TECHNIQUES

QUESTION 2

2.1 Interpret the map scale on the topographical map into a word scale.
(centimetres to metres)

(1 x 1) (1)

2.2 Calculate the actual straight-line distance in kilometres of the runway in block **C3**. Show ALL calculations. Marks will be awarded for calculations.

Actual distance =

(3 x 1) (3)

2.2 Use the information on the topographic map, to 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 =

(6 x 1) (6)

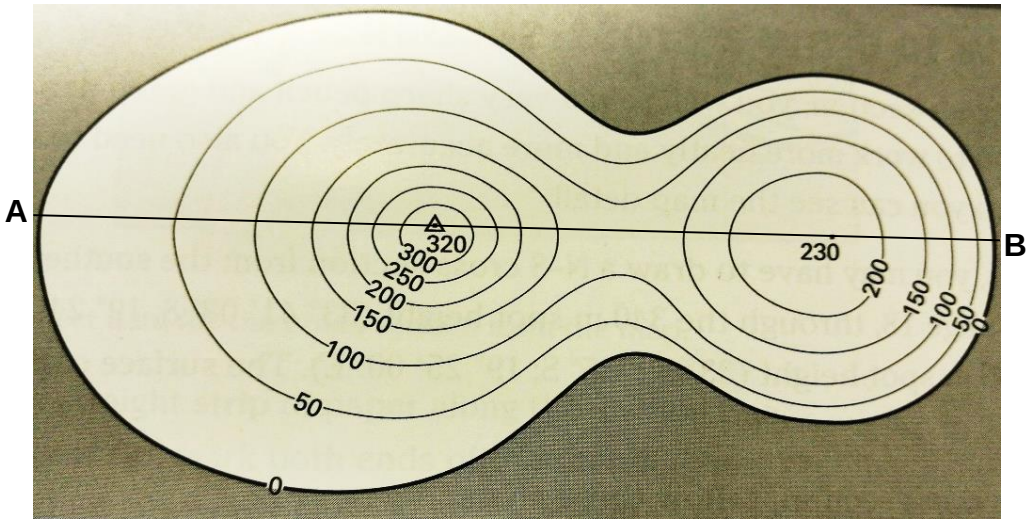
2.3 Calculate the average gradient on the orthophoto map between the trigonometric station 265 south of Graaff-Reinet and the spot height 806 south of Spandauville.

Show ALL calculations. Marks will be awarded for calculations.

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

(5 x 1) (5)

2.4 Draw a simple cross-section from point A to point B.
Use a vertical scale of 5 mm = 50 m.



(3 x 1) (3)

2.5 Determine the true bearing of the windmill from spot height 813 in block **B1**.

(2 x 1) **(2)**

[20]

SECTION C

QUESTION 3: MAP AND PHOTO APPLICATION AND INTERPRETATION

3.1 What is the altitude of the following features?

3.1.1 National road in block **12:** _____

3.1.2 Spot height **D** in block **B11:** _____

3.1.3 Conical Hill in Block **A12**: _____

(3 x 2) (6)

3.2 Choose the correct slope between the brackets. The type of slope that is found between points **2** and **3** on the orthophoto map is (concave, convex, uniform)

_____

(1 x 1) (1)

3.3 The area in block **C4** on the topographic map may be described as dry with seasonal rainfall.

Give TWO pieces of evidence to support this statement.

_____

_____

_____

(2 x 2) (4)

3.4 Where do the farmers in block **B3** obtain their water supply? Mention ONE source.

_____

(1 x 1) (1)

3.5 Graaff-Reinet has attractive landforms that are associated with igneous intrusions. Name THREE of these landforms that appear on the topographic map.

_____

_____

_____

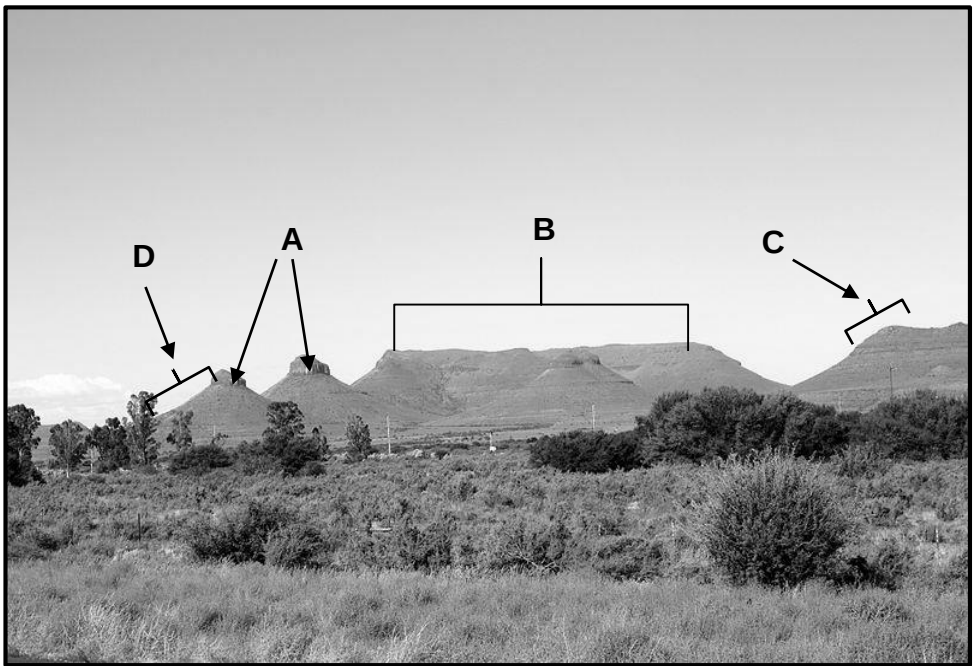
(3 x 1) (3)

3.6 What contour arrangement in block **C3** shows that the area chosen for the aerodrome was a suitable one for landing airplanes?

_____

(1 x 1) (1)

3.7 Study the photograph below. It shows a typical Karoo landscape similar to the landscape in the topographic map and orthophoto map that you are using.



3.7.1 Is the picture above a *horizontal*, *oblique* or *vertical* photograph?

_____

(1 x 1) (1)

3.7.2 Is the landscape in the photograph a *natural*, an *agricultural* or a *built-up* environment?

_____

(1 x 1) (1)

3.7.3 The landform in block **12** and the landform in block **I12** and **J12** are represented by **A** and **B** respectively on the photograph above. Identify landforms **A** and **B**.

A: _____

B: _____

(2 x 1) (2)

3.7.4 Identify the slope types labelled **C** and **D** on the photograph.

C: _____

D: _____

(2 x 1) (2)

3.8 Is Spandaukop in block **H2** a protected area? Support your answer.

Answer: _____

Support: _____

_____

(1 + 2) (3)

[25]

QUESTION 4: (GIS)

4.1 Write GIS in full.

_____

(1 x 1) (1)

4.2 Identify point and line features in block **C4**.

Point feature: _____

Line feature: _____

(2 x 1) (2)

4.3 Between the orthophoto map and the topographic map, which one was first captured by remote sensing techniques?

_____

(1 x 1) (1)

4.4 Remote sensing is any technology that can capture information about a place or an object from a distance. One can create maps of a place without being specifically at the place.

4.4.1 Give ONE advantage of remote sensing.

_____

_____

(1 x 2) (2)

4.4.2 From the list below identify with a cross **(X)** examples of remotely sensed data.

Data	Remotely Sensed Data	Remotely Sensed Data
	Yes	No
1. Satellite image		
2. Rock types		

(2 x 1) (2)

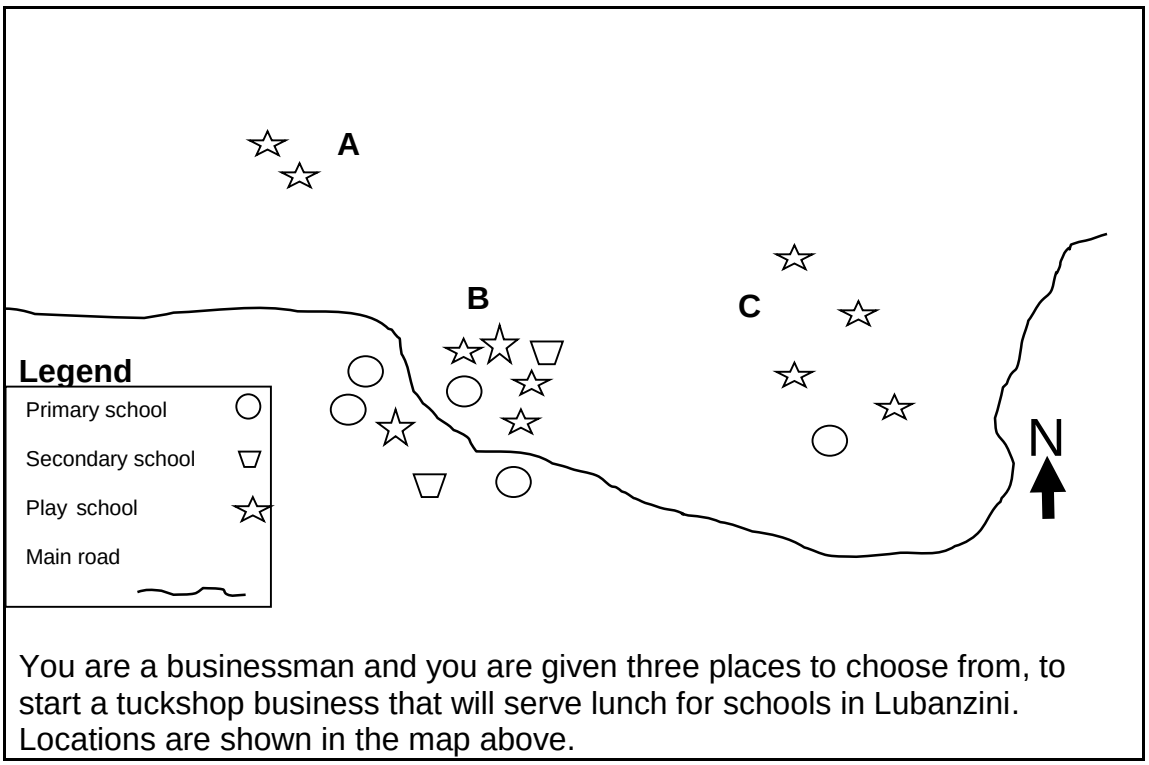
4.5 List any TWO key components of GIS.

Components: _____

_____

(2 x 1) (2)

4.6



You are a businessman and you are given three places to choose from, to start a tuckshop business that will serve lunch for schools in Lubanzini. Locations are shown in the map above.

4.6.1 Using the knowledge that you have gained from GIS, and choose a suitable area from **A**, **B** or **C**?

_____

(1 x 1) (1)

4.6.2 Provide TWO reasons for your choice in QUESTION 4.6.1.

_____

_____

_____

_____

(2 x 2) **(4)**

[15]

TOTAL: 75

ROUGH WORK-(do not remove this page).