



Province of the
EASTERN CAPE
EDUCATION

**NATIONAL
SENIOR CERTIFICATE**

NOVEMBER 2019

GRADE 10

GEOGRAPHY P2



SURNAME: _____

NAME: _____

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 14 pages, including 1 page for rough work and calculations.

RESOURCE MATERIAL

1. An extract from the topographical map 2730 DD VRYHEID.
2. Orthophoto map 2730DD 2 VRYHEID EAST.
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 (2730DD VRYHEID) and a 1 : 10 000 orthophoto map (2730DD 2 VRYHEID EAST) 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 BLACK 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	Golfbaan
Excavation	Uitgraving
Nature reserve	Natuurreservaat
Rifle Range	Skietbaan
Aerodrome	Vliegveld
Ravine	Kloof

GENERAL INFORMATION ON VRYHEID

The town of **Vryheid** in KwaZulu-Natal Province lies southward along the R33 in the valley at the foot of the Zungwini Mountain. It is the centre of coal mining and cattle farming in the district and being an old town with a historical past, there are a number of national monuments in the town. Decisive battles were fought in the vicinity during the Anglo Boer War.



Coordinates: 27° 46' 3" S, 30° 47' 9" 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 2730DD VRYHEID, 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 correct answer and write only the letter (A–D) in the block next to each question (1.1–1.15).

1.1 The type of scale shown on the orthophoto map is a ...

- A line scale.
- B ratio scale.
- C word scale.
- D Richter scale.

1.2 The contour interval on the topographic map is ...

- A 20 m.
- B 10 m.
- C 15 m.
- D 20 km.

1.3 The 1 : 50 000 scale of the topographic map is ... than that of the orthophoto map.

- A 5 times smaller
- B 5 times larger
- C 50 times smaller
- D 50 times larger



1.4 The index number of the map sheet southwest of Vryheid on the topographic map is ...

- A 2730 BB.
- B 2731 CC.
- C 2730 BA.
- D 2731 AA.

1.5 The distance of the line labelled **D** on the topographical map is ...

- A 2,1 km.
- B 0,21 km.
- C 21 km.
- D 210 km.

1.6 The height of an index contour line labelled **Y**, in block **D6** on the topographic map is ...

- A 1 120 m.
- B 1 100 m.
- C 1 200 m.
- D 1 050 m.

1.7 The man-made feature found at grid reference 27°48'35"S / 30°47'40"E is a(n) ...

- A dam.
- B valley.
- C excavation.
- D mine dump.

1.8 The evidence that mining has taken place in block **F1** is the presence of ...

- A a river.
- B roads.
- C mine dumps.
- D excavations.

1.9 The land-use in block **A6** is for the following activities:

- A Mining and fishing
- B Diggings and excavation
- C Cultivation and diggings
- D Dams and diggings



1.10 The altitude shown by the trigonometrical station in block **G2** is ...

- A 365 m.
- B 1 190 m.
- C 365 km.
- D 1 218,3 m.

1.11 The true bearing of trigonometrical beacon number 103 in block **D4** from trigonometrical beacon number 381 in block **B5** is ...

- A 300°.
- B 067°.
- C 275°.
- D 090°.

1.12 If you travel south-westerly on main road R33 from the police station in block **C2** in Vryheid along Route 33 on the topographic map, you are going to ...

- A Hlobane.
- B Paulpietersberg.
- C Kingsley.
- D Tinta Drift.

1.13 The area in block **E1** is largely covered by ...

- A buildings.
- B woodlands.
- C dams.
- D sports fields.

1.14 Refer to both the orthophoto and topographic map. The feature labelled **7** on the orthophoto map is a ...

- A police station.
- B school.
- C hotel.
- D hospital.

1.15 The water extraction feature in block **A3** on the topographic map is a ...

- A weir.
- B wind pump.
- C dam.
- D furrow.

(15 x 1) [15]

SECTION B: MAPWORK CALCULATIONS AND TECHNIQUES**QUESTION 2**

2.1 Refer to the orthophoto map.

2.1.1 Measure and calculate the distance between points **1** and **2** in kilometres.

(2 x 1) (2)

2.2 Calculate the area on the orthophoto map (also indicated by a black rectangular box on the topographic map).

Use the formula:

$$\text{AREA} = \text{LENGTH} \times \text{BREADTH}$$



(5 x 1) (5)

2.3 Refer to block **G3** on the topographic map. Identify trigonometrical beacon number 60 and spot height 1395.

2.3.1 Is the slope between the two features named above steep or gentle?

(1 x 1) (1)

2.3.2 Support your answer in QUESTION 2.3.1 above.

(1 x 2) (2)

2.3.3 Work out the difference in height between trigonometrical beacon number 60 and spot height 1395.

(2 x 1) (2)

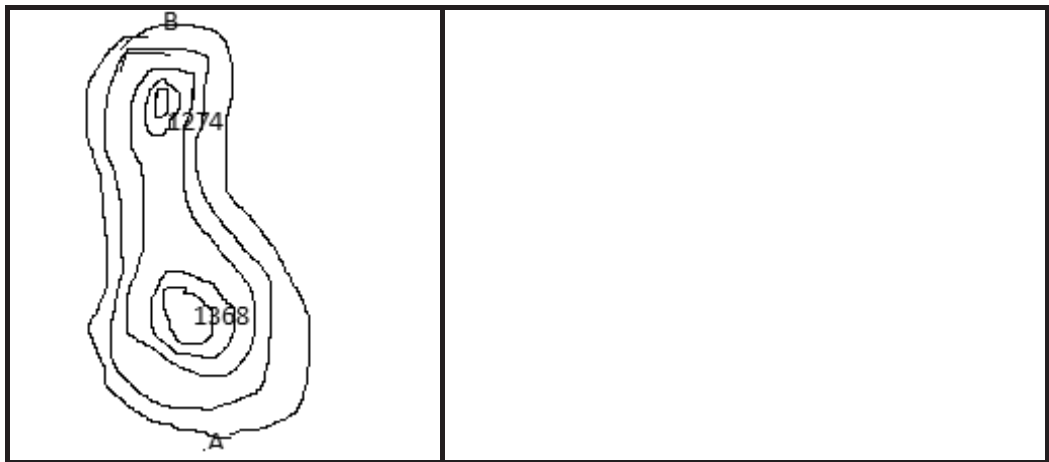
2.4 Calculate the magnetic declination of the map for the present year.

(5 x 1) (5)

2.5 Refer to the contour lines below which depict a landform found in blocks F4/5 on the topographic map (between spot heights 1274 in F4 and 1368 in F5) to answer the questions that follow.



2.5.1 Draw a simple free-hand (not to scale) cross section of the landform shown by the contour lines from A to B.



(2 x 1) (2)

2.5.2 Name the landform illustrated in your cross section above.

(1 x 1) (1)

[20]

QUESTION 3: MAP AND PHOTO APPLICATION AND INTERPRETATION

3.1 Refer to block **D4** on the topographic map.

3.1.1 Name the activity that is practised at **A**.

_____ (1 x 1) (1)

3.1.2 Describe how the activity named in QUESTION 3.1.1 above can be hazardous (harmful) to the environment and people’s activities.

 _____ (1 x 2) (2)

3.2 Refer to the table below together with the topographic map to answer the questions that follow.

VRYHEID WEATHER BY MONTH / WEATHER AVERAGES

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature (°C)	21	21	20	18,1	15,2	12,8	12,8	15	16,9	18,7	19,6	20,6
Precipitation / Rainfall (mm)	148	123	100	43	22	11	13	20	43	92	122	149

3.2.1 What was the mean monthly temperature for June?

_____ (1 x 1) (1)

3.2.2 State the month in which Vryheid receives its highest rainfall.

_____ (1 x 1) (1)

3.2.3 Calculate the mean annual temperature range for Vryheid.

 _____ (2 x 1) (2)

3.2.4 Vryheid receives less than average rainfall. Provide TWO pieces of evidence from the map showing that Vryheid receives seasonal rainfall.

(2 x 1) (2)

3.3 Refer to the topographic map.

3.3.1 Name any recreational activity in block **C2**.

(1 x 1) (1)

3.3.2 Identify any ONE tourist attraction on the Vryheid mapped area.

(1 x 1) (1)

3.4 Name the feature labelled **6** on the orthophoto map.

(1 x 1) (1)

3.5 Refer to the Klipfontein Dam on the topographic map.

3.5.1 Mention the main river that supplies the dam with water.

(1 x 1) (1)

3.5.2 A man was canoeing in the Klipfontein Dam moving from Inkamana (block **D5**) towards the damwall (block **D6**). Determine the direction the man was heading in.

(1 x 2) (2)

3.5.3 Suggest TWO possible ways in which Inkamana (block **D5**) and the neighbouring settlements would benefit from the Klipfontein Dam.

(2 x 1) (2)

- 3.5.4 Give ONE reason why people at Inkamana would consider the dam as a threat to their lives during flooding.

(1 x 2) (2)

- 3.6 Refer to the landform in block **B/C6**.

- 3.6.1 The feature represented by the contour lines crossed by line **E** is a (spur / valley).

(1 x 1) (1)

- 3.6.2 Support your answer to QUESTION 3.6.1 above.



(1 x 2) (2)

- 3.7 Refer to the orthophoto map.

- 3.7.1 Choose the correct answer from the options between brackets:

The orthophoto map is derived from a (high oblique / vertical aerial) photograph.

(1 x 1) (1)

- 3.7.2 Describe the difference between *an oblique* and *a vertical* photograph.

(2 x 1) (2)

[25]

QUESTION 4: GEOGRAPHIC INFORMATION SYSTEMS (GIS)

4.1 Refer to FIGURE 4.1 below which shows parts of a GIS component system and how it operates to answer the following questions.

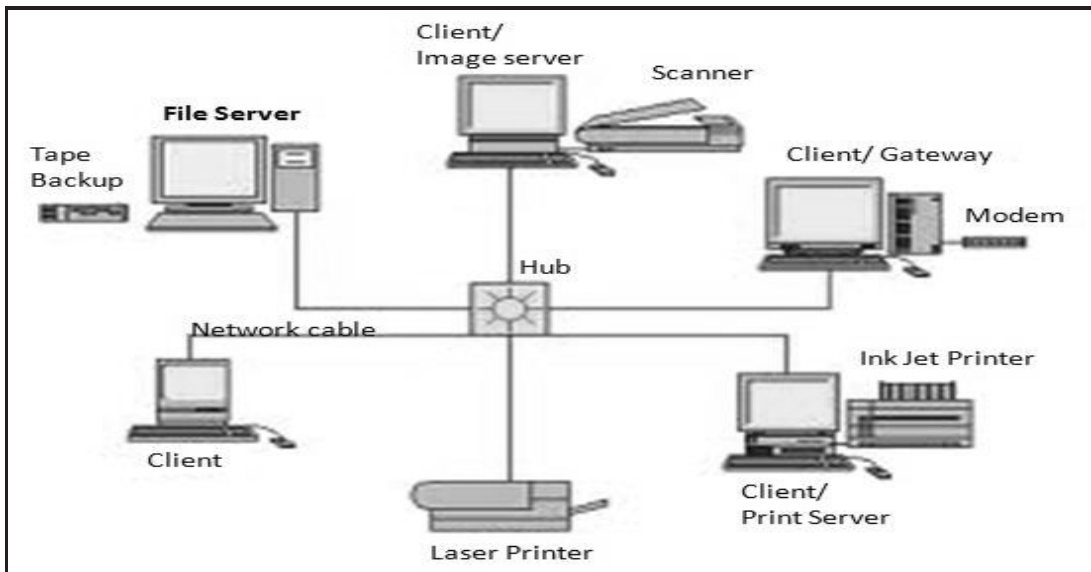


FIGURE 4.1

4.1.1 Define the term *geographical information systems* (GIS).



(1 x 1) (1)

4.1.2 Name any FOUR components of GIS.

(4 x 1) (4)

4.1.3 From FIGURE 2 above, name any ONE hardware device that is used for:

(a) Capturing information into the system

(b) Storing information in the system

(c) Connecting the system to a network

_____ (3 x 1) (3)

4.2 Explain the importance of using GIS in today's fast changing world.

_____ (1 x 2) (2)

4.3 Refer to block **D3** on the topographic map.

4.3.1 State ONE example of each of the following types of features, found in block **D3**:

(a) Area (polygon) feature

(b) Line (arc) feature

(c) Point (node) feature

_____ (3 x 1) (3)

4.4 Refer to the area on the top north-western part of the orthophoto map. Explain why it would be wise for the surveyors to use remote sensing in collecting data from that area.

_____ (1 x 2) (2)

[15]

TOTAL: 75



ROUGH WORK AND CALCULATIONS

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



