



Please paste the barcoded
label here

TOTAL
MARKS

--

NATIONAL SENIOR CERTIFICATE EXAMINATION
MAY 2023

GEOGRAPHY: PAPER II

EXAMINATION NUMBER

--	--	--	--	--	--	--	--	--	--	--	--	--

Time: 1½ hours

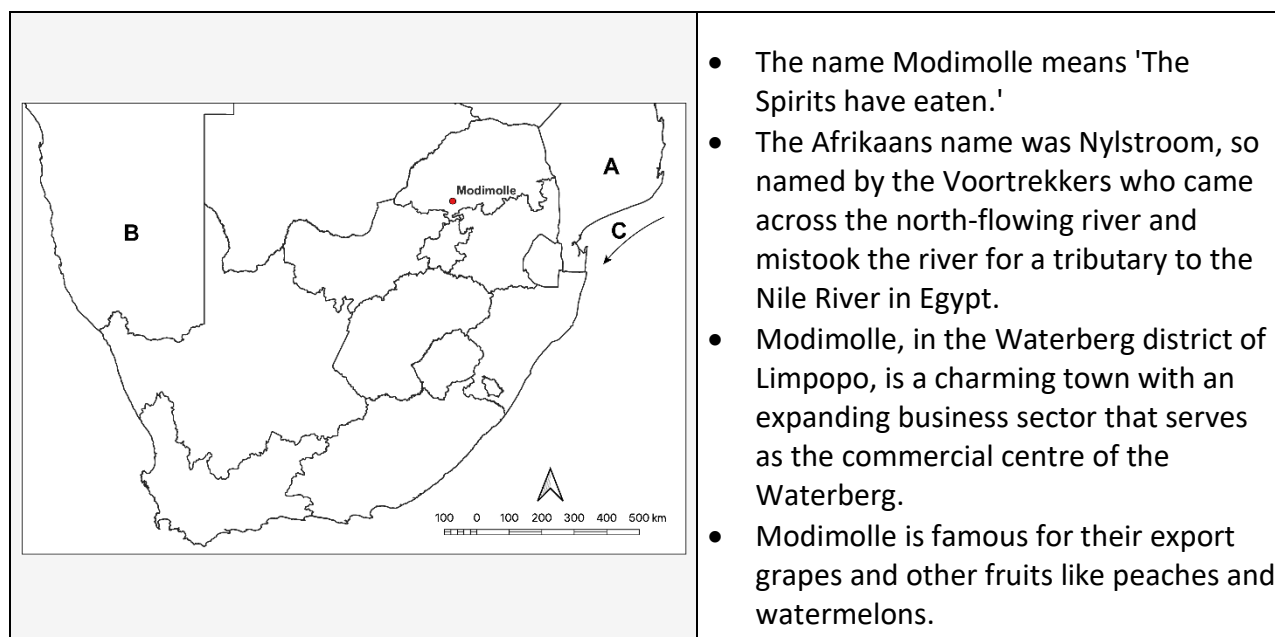
100 marks

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

1. Write your examination number in the blocks above.
2. This paper consists of 20 pages, a topographic map extract, an orthophotomap extract and an equipment sheet. Please check that your question paper is complete.
3. Read the questions carefully.
4. Answer **ALL** the questions in the spaces provided on this question paper.
5. Carefully study the 1:50 000 topographic map extract 2428 CB MODIMOLLE and the orthophotomap extract before answering the questions. The topographic map has grid lines with markings A to F and 1 to 10 that can be used to identify locations according to blocks. The legend is printed on the back of the map. The area covered by the orthophotomap extract is marked with a red block on the topographic map extract.
6. The completed question paper must be handed to the invigilator at the end of the examination. The topographic map extract and orthophotomap extract may be retained by the school.
7. The equipment sheet may be used in lieu of a ruler and a protractor. It may also be used for rough work. There is a dotted line indicating where it should be folded. A magnifying glass and a calculator may be used.
8. It is in your own interest to write legibly and to present your work neatly.
9. ONE blank page (page 20) has been included at the end of the paper. If you run out of space for an answer, use this page. Clearly indicate the number of your answer should you use this extra space.

FOR MARKERS' USE ONLY

Question	1	2	3	4	Total
Marks	25	25	25	25	100
Obtained					

QUESTION 1 ATLAS USE AND MAP ORIENTATION**Figure 1: Location map**[Source: <<http://www.limpopohappenings.co.za/modimolle>>]

1. Refer to the location map above to answer the questions that follow. Mark the correct box with an **X**.

1.1.1 Identify the neighbouring country at **A**.

Mozambique	
Botswana	
Zimbabwe	
eSwatini	

(1)

1.1.2 Name the capital city of country **B**.

Windhoek	
Maputo	
Maseru	
Harare	

(1)

1.1.3 Choose which country, **A** or **B**, receives more rain?

Country A	
Country B	

(1)

1.1.4 Name the southernmost landlocked province in South Africa.

Limpopo	
Gauteng	
Free State	
Mpumalanga	

(1)

1.1.5 Identify the ocean current labelled **C**.

Benguela	
Mozambique	
Agulhas	
Indian	

(1)

1.2 Use both the topographic map extract 2428 CB Modimolle and the orthophotomap extract to answer the following questions.

The orthophotomap shows Donkerpoort Dam, a reservoir located fewer than 10 kilometres north-west of Modimolle.

1.2.1 The four alphanumeric blocks on the topographic map extract covered by the orthophotomap extract are ...

A1, A2, B1, B2	
B1, B2, C1, C2	
C1, C2, D1, D2	

(1)

1.2.2 The land-use activity occurring at **A** on the orthophotomap is ...

primary	
secondary	
tertiary	

(1)

1.2.3 State why the feature at **B** on the orthophotomap has higher reflectivity than its surroundings.

(1)

1.2.4 Identify the man-made feature indicated by **C**.

Reservoir	
Dam	
Weir	

(1)

1.2.5 State the general direction of flow of the non-perennial stream at **D**.

NE	
NW	
SE	
SW	

(1)

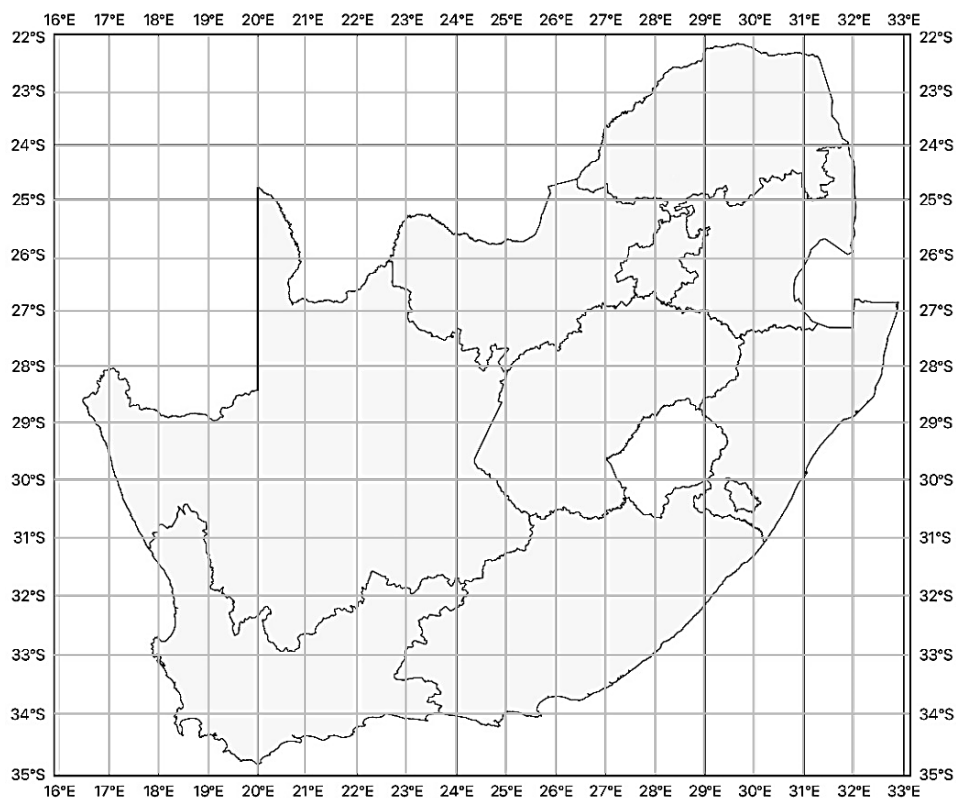
1.2.6 Identify the approximate height of the dam wall seen at **E**.

	m
--	---

(1)

1.2.7 On the map below, mark with an **X** the area covered by the topographic map extract 2428 CB.

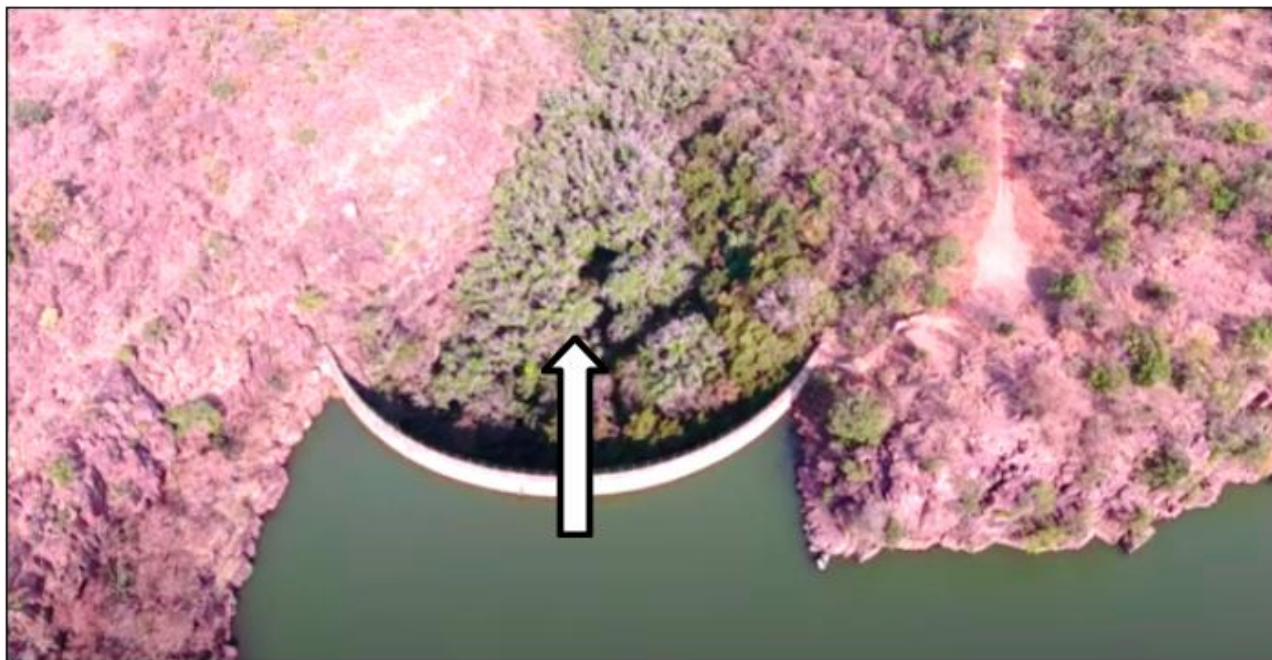
Figure 2: Latitude and longitude



(2)

- 1.3 The following remotely piloted aerial system (RPAS) (drone) picture of Donkerpoort Dam Wall (E on the orthophotomap) was taken by a YouTube content creator, Averix Deus in 2019.

Figure 3: Drone image of Donkerpoort Dam Wall



[Source: <https://www.youtube.com/watch?v=fLzb9Ag15PA&ab_channel=AverixDeus>]

- 1.3.1 In which direction was the RPAS camera facing when this picture was taken? (Use the arrow to guide you).

_____ (1)

- 1.3.2 Suggest which season this photograph was taken?

_____ (1)

- 1.3.3 Provide ONE piece of photographic evidence to support your answer.

_____ (1)

- 1.3.4 Fill in the table below, in which you list TWO advantages of using drone images for Geography fieldwork, and TWO disadvantages.

Advantage	Disadvantage

(4)

- 1.4 1.4.1 Provide a physical factor for the railway route as shown on the map.

(1)

- 1.4.2 The school in block E7 is built on the site of a Boer concentration camp from the South African War. Calculate an accurate grid reference for this school.

° ' " S ° ' " E

(4)

[25]

Q1 subtotal

QUESTION 2 SETTLEMENT AND MAP SKILLS

Use the topographic map extract and Figure 10 on page 19 to answer the following question.

2.1 Complete the sentences below by choosing a word / phrase from the block.

low-order service centre	minor country town	central place	stellar
circular	planned irregular	gridiron	apartheid planning
	multiple nuclei model		

2.1.1 Modimolle would be classified as a _____ on R.J. Davies' urban hierarchy.

(1)

2.1.2 The function of Modimolle is a _____.

(1)

2.1.3 The shape of Modimolle can best be described as _____.

(1)

2.1.4 The street pattern in Modimolle central is _____.

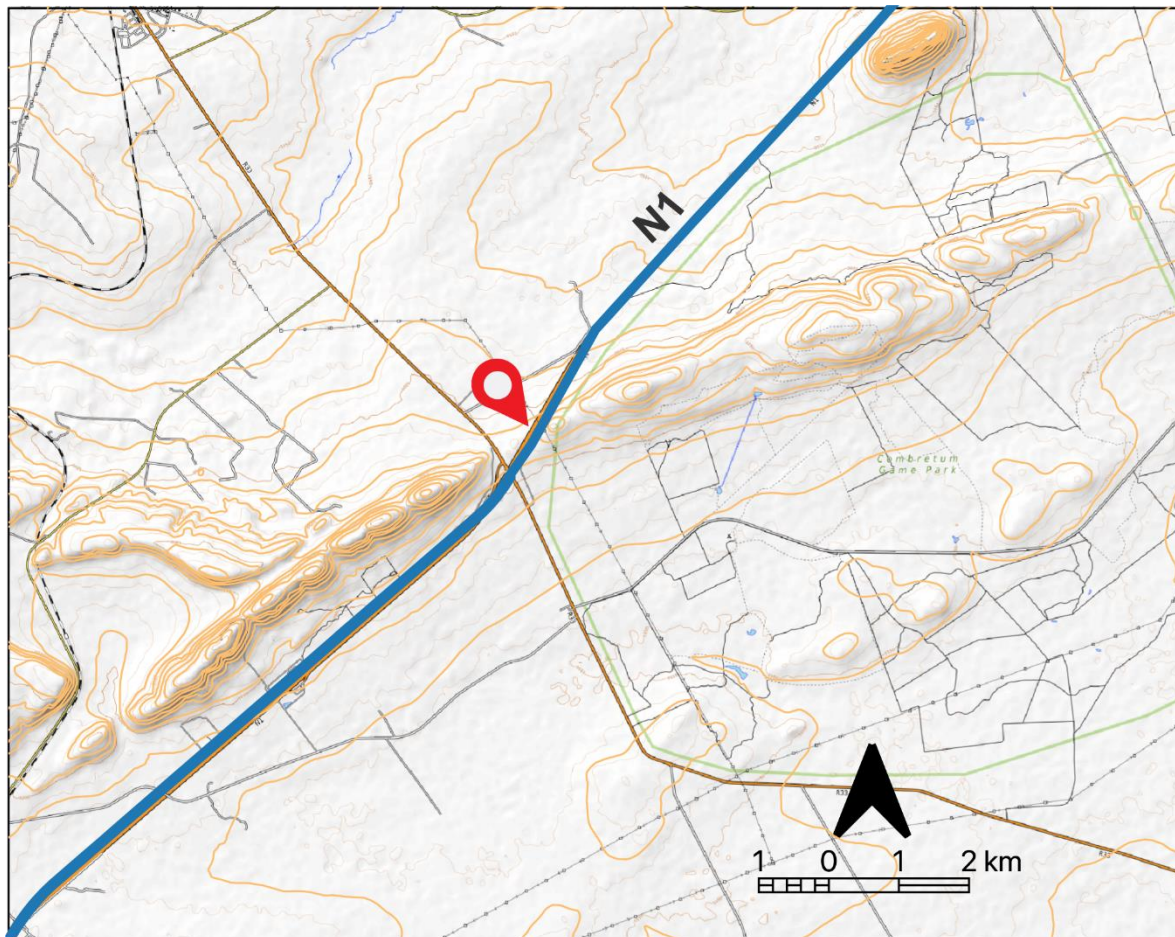
(1)

2.1.5 Freedom Park and Phagameng are examples of _____.

(1)

NATIONAL NEWS – Limpopo traffic police have arrested the driver of a Mercedes-Benz who allegedly clocked 240 km/h on the N1.

2.2 Figure 4: The N1 outside Modimolle



[Source: IEB-generated map]

2.2.1 Use map evidence to explain why the driver was able to attain such a speed.

(2)

- 2.2.2 Should the driver have travelled at 242 km/h through Modimolle, how long would it take him to get from the intersection of the R101 and R33 (E7 on the topographic map) to the Sanrock Resort (C9)?

Answer: _____ (1)

Calculations

(2)

2.3 **Figure 5: Google street view**



[Source: <google.com>]

- 2.3.1 This image shows a south-facing view. Was it taken from block E6 or D8? Justify your answer.

Answer: _____ (1)

Reason: _____

(2)

2.3.2 There is map evidence of grain elevators (silos). These have been circled on the street view (Figure 5). Provide a purpose for these.

(2)

The following was taken from the Modimolle Local Municipality Integrated Development Plan of 2009 / 2010.

Table 1: Dwellings in Modimolle

House or brick structure on a separate stand or yard	29 231
Traditional dwelling / hut / structure made of traditional materials	936
Flat in block of flats	136
Town / cluster / semi-detached house (simplex, duplex, triplex)	219
Informal dwelling / shack in back yard	2 533
Informal dwelling / shack NOT in back yard, e.g., in an informal / squatter settlement	13 070
Room / flatlet not in back yard but on a shared property	2 674
Workers' hostel (bed / room)	551

[Source: Modimolle Integrated Development Plan 2009/2010]

2.3.3 Identify one economic and one social issue arising from having such high numbers of informal dwellers.

Economic: _____

(2)

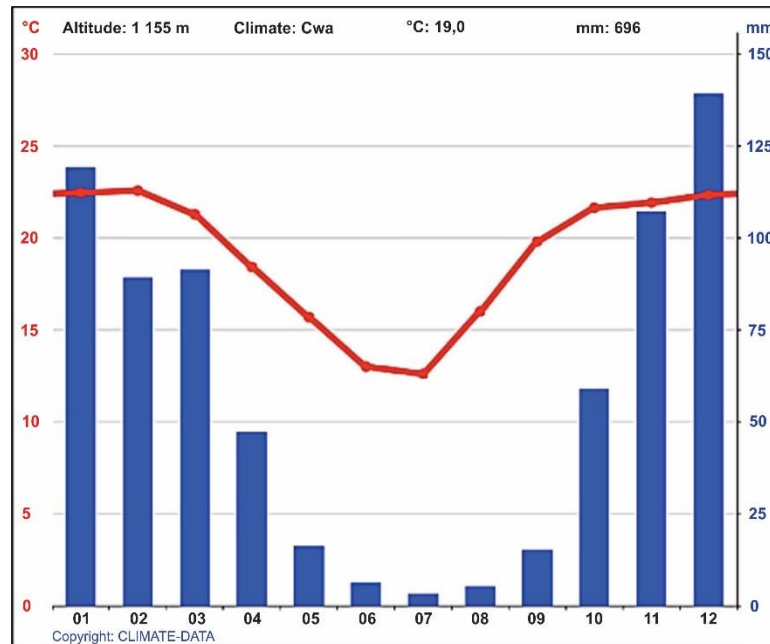
Social: _____

(2)

- 2.3.4 Some informal structures can be seen in the foreground in Figure 5. Outline a strategy that will help alleviate the problem of the large number of informal dwellers in Modimolle. Include a reason why this problem exists and a possible solution.

(6)
[25]

Q2 subtotal

QUESTION 3 CLIMATE, WEATHER, MAP SKILLS**Figure 6: Climograph for Modimolle**

[Source: <<https://en.climate-data.org/africa/south-africa/limpopo/modimolle-27251#temperature-graph>>]

- 3.1 3.1.1 What topographic map evidence supports the statement that Modimolle receives high rainfall for part of the year and is dry for the rest?

(2)

- 3.1.2 Complete the paragraph below:

Precipitation is the lowest in _____ (month), with an average of _____ mm.

With an average of _____ mm the most precipitation falls in _____ (month).

(4)

- 3.1.3 Explain why Modimolle receives summer rain.

(2)

Tropical Cyclone Eloise Impacts South Africa, 25 January 2021**More rain expected in Mpumalanga, Limpopo**

After widespread flooding reports from Mpumalanga and Limpopo, the South African Weather Service has warned that more rain is expected in those provinces.

The Weather Service says disruptive rain is expected over the escarpment and lowveld areas of Limpopo and Mpumalanga, and the eastern highveld from Sunday until Monday.

'A warning has been issued for parts of Limpopo and Mpumalanga for [Sunday] into [Monday] due to persistent heavy rain, and more heavy rain is expected [on Monday night] into [Tuesday]. This will cause serious strain on emergency services.'

'Take extreme caution in these areas,' the Weather Service warned.

[Source: <<https://reliefweb.int/report/south-africa/plans-place-tropical-cyclone-eloise-impact>>]

- 3.2 3.2.1 Identify the weather conditions associated with tropical cyclone Eloise that could have affected the settlement at Freedom Park (D7 / 8).

(2)

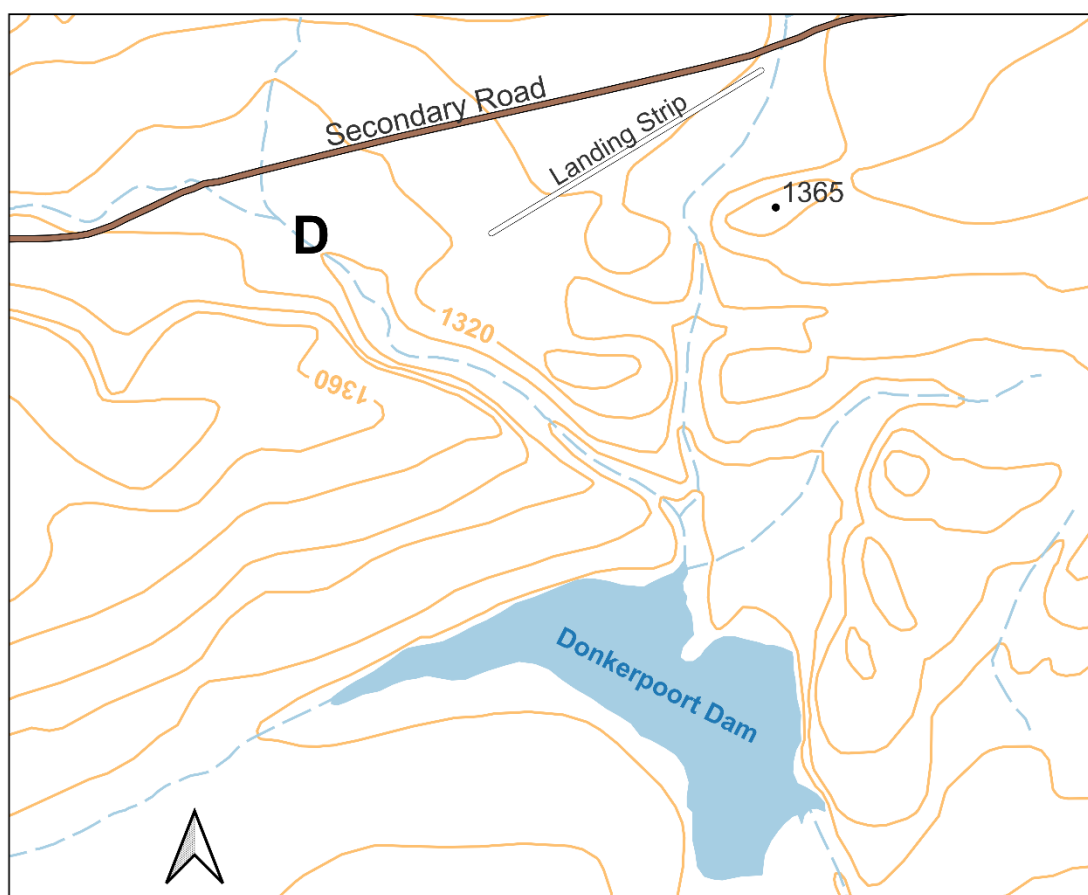
- 3.2.2 How could Modimolle's local municipality prepare for the impending tropical cyclone? Use map evidence where possible; refer to blocks D / E 6–10 in particular.

(4)

- 3.3 The sketch map below shows the non-perennial tributaries feeding Donkerpoort Dam. The same area can be seen on the orthophotomap extract, and on the topographic map extract north-west of Modimolle.

It is unusual for non-perennial tributaries to have carved such deeply incised valleys. It is believed that these valleys were created by fast-flowing rivers on a previous landscape that have since dried up.

Figure 7: Sketch map



Key:

	Anabatic flow
	Valley winds

200 0 200 400 600 m

- 3.3.1 On the sketch map above, draw arrows to indicate the direction of:

- Anabatic flow
- Valley winds

Use different-coloured arrows and fill them in on the key.

(4)

3.3.2 How many confluences are visible on the sketch map (Figure 7)?

_____ (1)

3.3.3 Are these streams examples of antecedent or superimposed drainage?

Answer: _____ (1)

Reason: _____

_____ (2)

3.3.4 Using the topographic map extract, calculate the gradient from spot height 1365 in Figure 7 to the point where the tributaries join the dam.

Difference in height: 105 m

Distance: _____m

Gradient: _____

Calculations

(3)
[25]

Q3 subtotal

QUESTION 4 ECONOMIC GEOGRAPHY AND MAP SKILLS

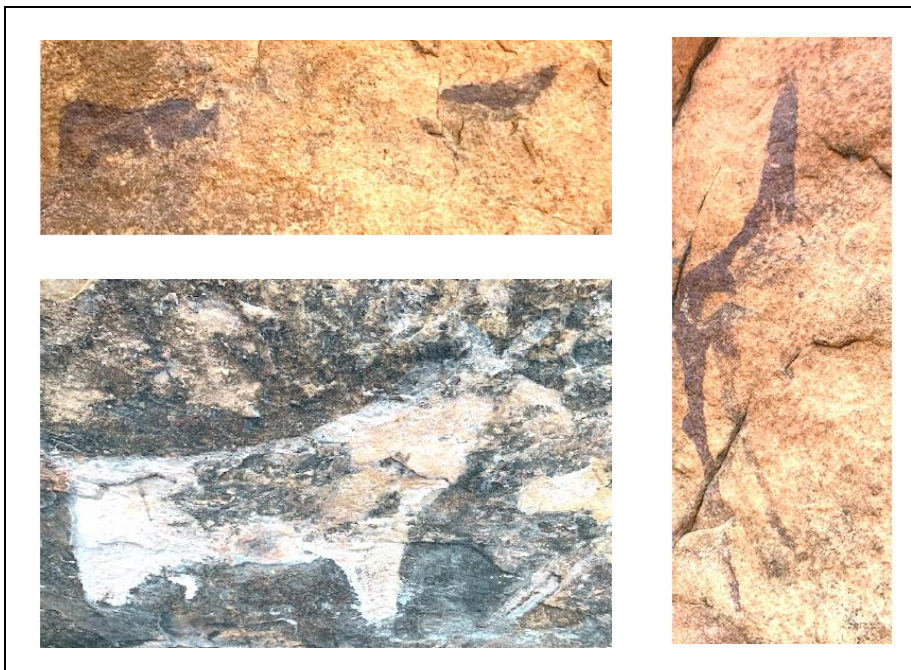
Study the fact file and Figure 8 and answer the questions that follow.

Fact file

- Evidence of human activity in the Waterberg district stretches back as far as the Middle Stone Age.
- Rock paintings in the area show various ethnic groups lived here for centuries.
- Our earliest ancestors could have been frequent visitors many thousands of years before that.
- Settlements were sparsely distributed. While the area came to be dominated by the Pedi in the 18th century, it appears to have been largely a sanctuary to which people fled periodically whilst under threat.
- The area was also settled late by people of European origin, of which there were fewer than 200 residents even as late as the early 20th century.
- Parts of the area, with its fevers (particularly malaria) and tsetse flies, were some of the last areas in South Africa to be settled by whites.
- The Waterberg plateau is devoid of any major mineral deposits. This, together with its unsuitability for forestry, has meant that it has avoided any large-scale development or habitation that could have otherwise detracted from its natural beauty or wilderness quality.
- During the South African War, a concentration camp was set up by the British in Modimolle in 1901.
- Despite the area's rich history across numerous ethnic groups, it still remains sparsely populated.

[Source: <<http://www.olievenfontein.com/index.php/about-waterberg-meander>>]

Figure 8: Rock paintings around Modimolle along the river in blocks A8 and A9



[Source: Examiner's photographs]

4.1

4.1.1	Provide map and fact file evidence showing why humans were eventually drawn to this area.	
4.1.2	Give THREE pieces of map evidence that farming in the area is commercial.	1. 2. 3.
4.1.3	List TWO physical factors that favour farming in this region.	1. 2.
4.1.4	List THREE hardships faced by people currently living in the area.	1. 2. 3.

(10)

4.1.5 The ratio of male to female in Modimolle is almost equal; there are marginally more males than females. The neighbouring district of Molemole to the east, however, has a ratio of 1 male to 36 females, as males leave in search of work. Explain the impact of young, economically active male migration on:

(a) The area that they leave: _____

(1)

(b) The areas to which they migrate: _____

(1)

4.2 Figure 9: Stall located at Phagameng (D9)

[Google street view]

4.2.1 Which sector of the economy is depicted here?

(1)

4.2.2 Explain why stalls, such as this one, are located where they are?

(2)

4.2.3 Describe the following regarding the stall shown in Figure 9.

(a) Threshold population: _____

(1)

(b) Sphere of influence: _____

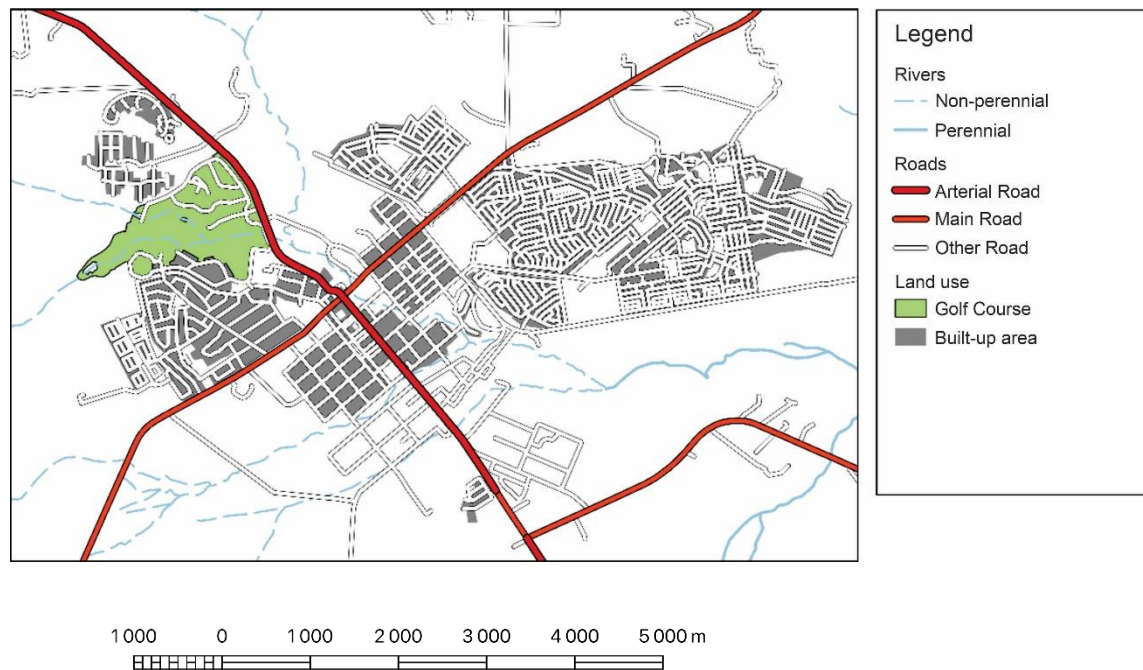
(1)

(c) Range: _____

(1)

4.3 The map below is a copy of the land-use map.

Figure 10: Land-use map generated by GIS



4.3.1 Is raster or vector data shown on this map?

Answer: _____ (1)

4.3.2 Use the map above as a 'paper GIS' and add the following layers:

- (a) The railway line and the railway station.
- (b) The Klein Nylrivier and marsh.
- (c) A buffer of 200 m around the marsh.

(6)
[25]

Q4 subtotal

Total: 100 marks

ADDITIONAL SPACE TO ANSWER QUESTIONS. REMEMBER TO CLEARLY INDICATE AT THE QUESTION THAT YOU USED THE ADDITIONAL SPACE TO ENSURE ALL ANSWERS ARE MARKED.

[illegible]