

GEOGRAPHY: PAPER II

EXAMINATION NUMBER

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Time: 1½ hours

100 marks

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

1. Write your examination number in the appropriate blocks provided above.
2. This question paper consists of 16 pages, a topographic map and a Colour Insert of one page (i). Please check that your paper is complete.
3. Read the questions carefully.
4. Answer ALL the questions in the spaces provided on the question paper.
5. Carefully study the 1:50 000 topographic map extract 2428CD BELA-BELA and the accompanying aerial photograph sheet (Photograph 2 of the Colour Insert) before answering the questions.
6. The topographic map has grid lines with markings A to G and 1 to 11 that may be used to identify locations according to blocks.
7. The topographic map extract, aerial photograph and your completed question paper must be handed to the invigilator at the end of the examination. The maps and photos may be retained by the school for future use.
8. On page 2 there is a glossary of words. This will help you understand what the words in **bold** in the questions are asking you to do. There is also an English-Afrikaans translation of some words appearing on the map.
9. A magnifying glass and calculator may be used.
10. It is in your own interest to write legibly and to present your work neatly.
11. You may use the back page for rough work. No marks will be allocated to rough work.

FOR MARKER'S USE ONLY

Question	1	2	3	4	Total
Marks	25	24	35	16	100
Obtained					

Glossary of terms

WORD	MEANING
Account for	To justify, and provide reasons for something, using a short explanation.
Calculate	To work out the value of something using a mathematical method.
Classify	To arrange in categories or groups according to shared qualities.
Compare	To estimate, measure, or note the similarity or dissimilarity between things.
Demonstrate	To show that you understand something, to illustrate and explain (can give examples).
Describe	To say what something is like.
Design	To explain step-by-step a process or plan of action.
Discuss	To write about something in detail.
Draw	To create a picture.
Explain	To describe something so that it can be understood.
Give	To provide.
Identify	To give the details or characteristics of something.
Justify	To support an answer by giving reason, argument or evidence.
Match	To connect similar things or things that belong together.
Provide	To give.
Suggest	To put forward ideas, a plan or reasons.
Verify	To prove that something is true.

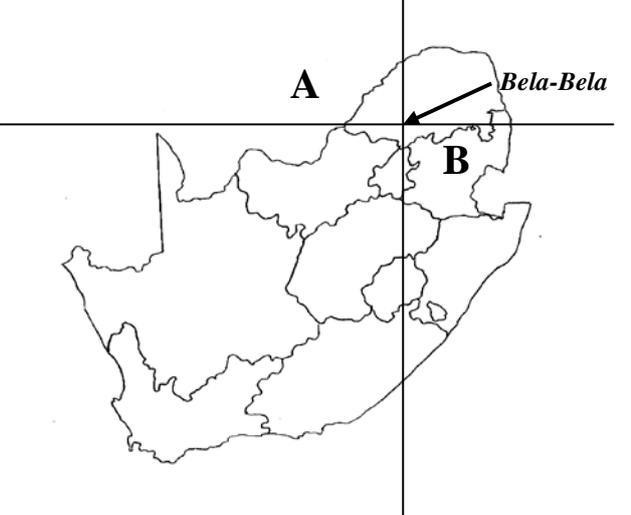
Translation of words

English to Afrikaans

Caravan Park	Karavaanpark
Cutline	Snylyn/ kaplyn
Diggings	Delwerye
Farm	Plaas
Fountain/ spring	Fontein
Furrow	Kanaal/Voor
Game Reserve	Wildtuin
Golf course	Gholfbaan
Holiday resort	Vakansieoord
Landing strip	Landingstrook

Marsh, swamp or wetland	Vlei
Mineral hot springs	Warmwaterbronne
Mountain	Berg
Nature Reserve	Wildtuin
Ridge	Rant
River	Rivier
Road	Pad
Sewerage works	Rioolwerke
Stream	Spruit/ stroom

Location map: Location of Bela-Bela in South Africa

	<p>The town is situated in the Waterberg district of Limpopo Province and lies about 10 km from the N1 road between Pretoria and Polokwane. Bela-Bela meaning '<i>the pot that boils</i>', derives its name from the geothermic hot springs around which the town was built. Bela-Bela was originally known as Warmbaths or Warmbad.</p> <p>Bela-Bela is a popular health and holiday destination attracting both local and foreign tourists. The town lies on the Springbok Flats, a fertile basin, dominated by agricultural activities, conservation and wildlife farming.</p>
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[Adapted from: <www.warmbath.co.za> and <www.umbono.com>]

QUESTION 1 ATLAS USE, MAP ORIENTATION AND TECHNIQUES

1.1 Refer to the location map above, as well as the topographic map extract 2428CD BELA-BELA, to answer the following questions. Tick the correct box.

1.1.1 The neighbouring country labelled A on the location map above is ...

Botswana	
Lesotho	
Namibia	
Zimbabwe	

(1)

1.1.2 The province labelled B on the location map above is ...

Free State	
Gauteng	
Mpumalanga	
North West	

(1)

1.1.3 The map reference number for the map sheet to the north east of 2428CD BELA-BELA is ...

2428CA	
2428DA	
2428DC	
2429DA	

(1)

1.1.4 The road distance (km) to Mabula travelling along the R516 from point X (E3) is ...

5 km	
10 km	
29 km	
34 km	

(2)

1.1.5 The approximate true bearing of trigonometrical beacon 65 (C2) from trigonometrical beacon 7 at Buyskop (C6) is ...

84°	
96°	
98°	
276°	

(2)

1.1.6 Refer to the topographic map extract 2428CD BELA-BELA and Figure 1 below.

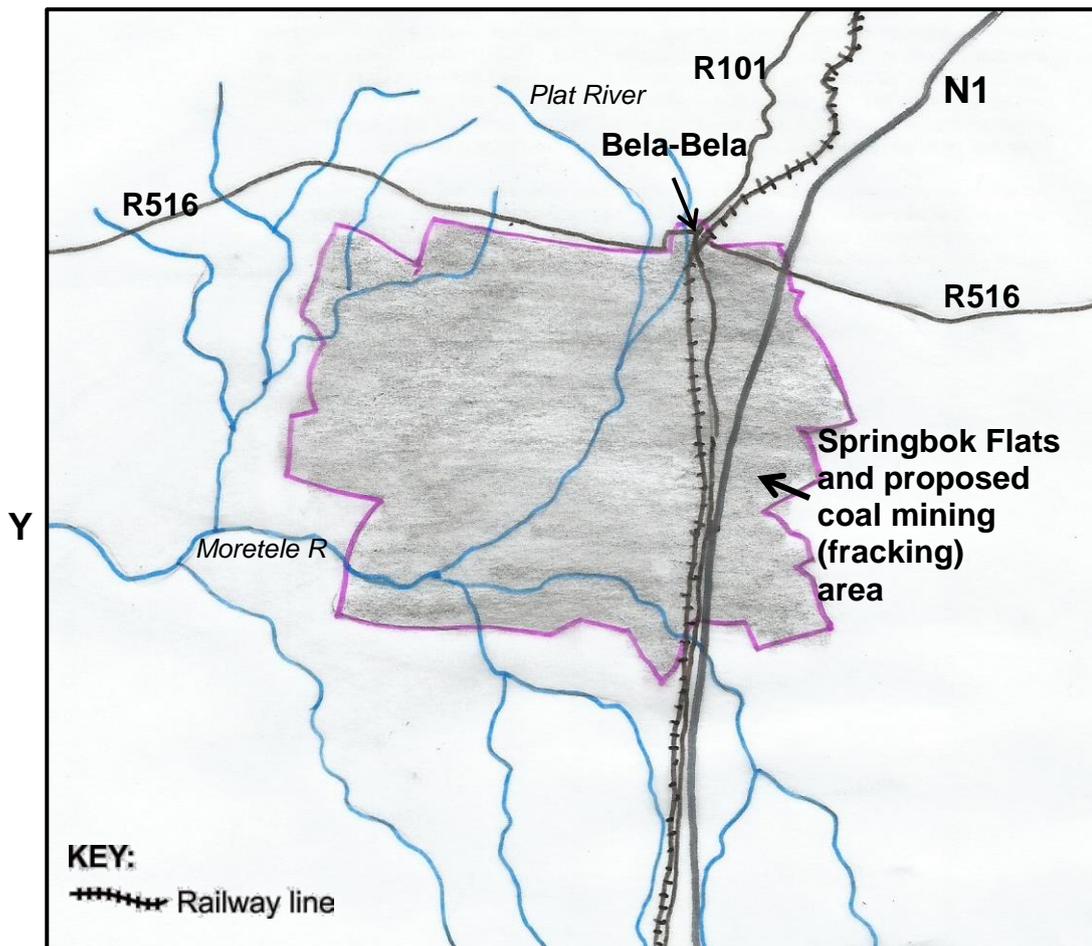


Figure 1: Main communication links and drainage features, Bela-Bela, Limpopo

- (a) In which general direction is the Moretele River draining at point Y on Figure 1?

_____ (2)

- (b) Refer to the topographic map extract. **Verify** the statement that the Mineral Hot Springs in Bela-Bela (E3) are approximately 10 km from the N1.

 _____ (2)

- (c) The N1, R101 and R516 roads, as well as the railway links, generally follow straight routes. **Provide** map evidence to **suggest** what this tells us about the relief of the area.

 _____ (2)

1.2 **Geographic techniques**

Refer to the topographic map extract 2428CD BELA-BELA to answer the questions. Tick the correct box.

- 1.2.1 The latitude reference of the ground sign **G** in F4 is ...

28° 18' 40" E	
28° 18' 40" S	
24° 54' 40" S	
24° 54' 40" E	

(2)

- 1.2.2 The mean magnetic declination for the topographic map extract 2428CD BELA-BELA in 2015 will be ...

16° 35' W of True North	
16° 47' W of True North	
16° 23' W of True North	
16° 23' E of True North	

(2)

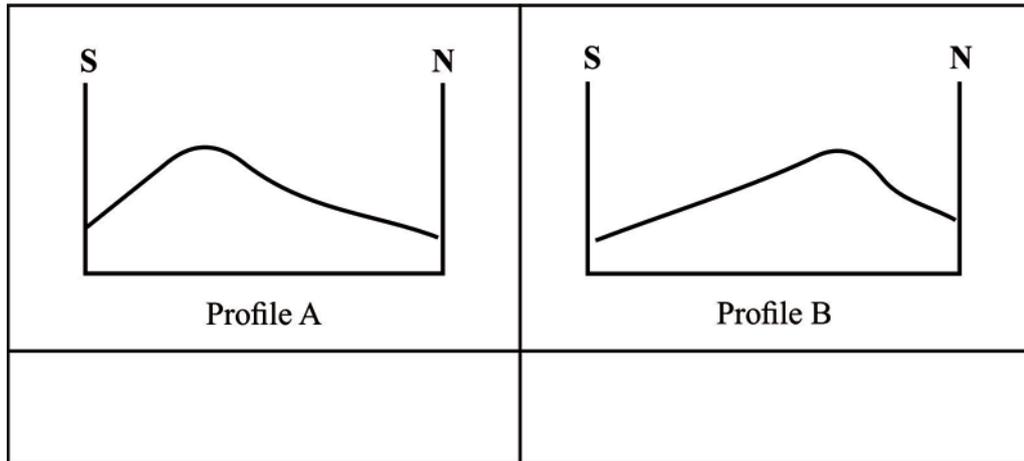
- 1.2.3 (a) There are several cutlines indicated on the mapped area (e.g. B2 and E6). **Draw** the correct map symbol for a cutline in the block below.

(1)

(b) **Explain** what a cutline is.

(2)

1.2.4 (a) The Waterberg range is sloping to the north (B3). **Match** this statement to the sketch cross section that represents the correct profile of the Waterberg on Bospoort farm (B3). Tick the correct option.



(2)

(b) (i) Is trigonometrical station 65 (C2) intervisible from spot height 1396 (B1)?

Tick the correct answer.

YES	
NO	

(1)

(ii) **Justify** your answer to (i) above.

Justification: _____

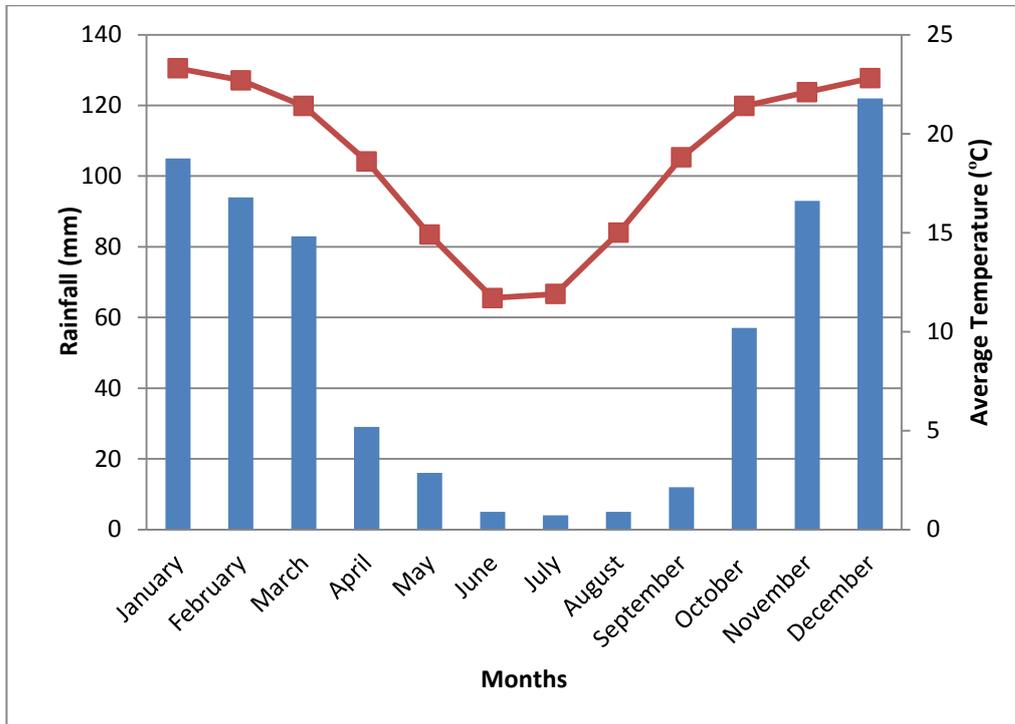
(2)

[25]

Q1 subtotal

QUESTION 2 CLIMATE AND DRAINAGE OF THE AREA

2.1 Study Figure 2, a climate graph for Bela-Bela.



[Source: <www.en.climate-data.org>]

Figure 2: Climate graph: Bela-Bela

2.1.1 Calculate the approximate total annual rainfall (mm) for Bela-Bela.

_____ mm (2)

2.1.2 Given the above rainfall data (Question 2.1.1), suggest why there are many non-perennial rivers surrounding the Bela-Bela area.

 _____ (2)

2.1.3 Calculate the range (°C) in the average annual temperature.

_____ °C (2)

2.2 **Drainage of the area**

Refer to the topographic map extract 2428CD BELA-BELA.

2.2.1 **Identify** the dominant drainage pattern in B3-4.

_____ (2)

2.2.2 Refer to B3 and C3. **Provide** evidence that **suggests** that water is critical to farming in the area.

- _____

- _____

(4)

2.3 Flooding at Klein-Kariba Holiday Resort

Refer to A5 and B5 on the topographic map extract 2428CD BELA-BELA, the Fact File and Photographs 1A and 1B below.

FACT FILE

The Klein-Kariba Holiday Resort is located in a beautiful gorge in the Waterberg Mountains. A variety of self-catering accommodation is offered and there is a supermarket, restaurant and 9-hole golf course. Hiking, game viewing and water sports are favourite activities.

In March 2014 two flash floods hit the resort, damaging the electricity and sewage systems, accommodation and entertainment areas.

The resort's buildings had been built above the 100-year flood mark as required by law.

[Adapted from: <www.atkvkleinkariba.caravanparks.co.za> and <www.thebeat.linmedia.co.za>]

Photograph 1A: Flood damage at Klein-Kariba Holiday Resort



Photograph 1B: The river in flood at Klein-Kariba Holiday Resort



[Source: Lessing, V, 2014]

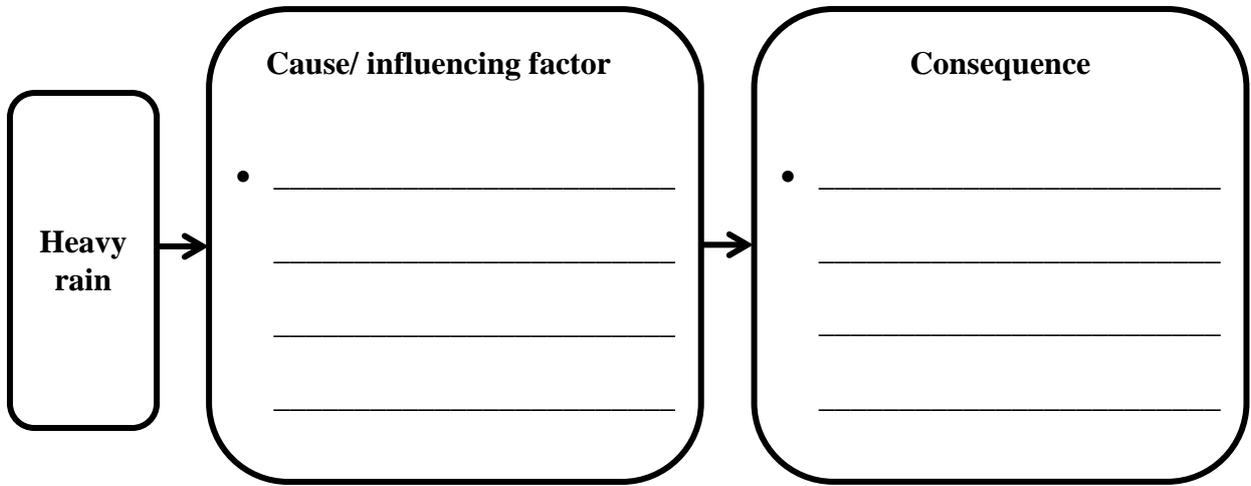
2.3.1 Give TWO characteristics of a flash flood.

- _____

- _____

(4)

2.3.2 Using the flow diagram below, **demonstrate** your understanding of why a devastating flash flood occurred in *this* river gorge of Klein-Kariba. Complete the information on the flow diagram.



(4)

2.3.3 The Klein-Kariba Holiday Resort is being rebuilt after the floods. **Discuss** TWO recommendations you would make to the redevelopers and owners of the resort to avoid future flood damage.

- _____

- _____

(4)
[24]

Q2 subtotal

QUESTION 3 PHOTOGRAPH ANALYSIS, GIS CONCEPTS, RURAL AND URBAN LAND-USE

Refer to Photograph 2 below as well as the topographic map extract 2428CD BELA-BELA to answer the following questions. A colour image is provided in the Colour Insert. The area shown on Photograph 2 is marked by a black block on the topographic map extract 2428CD BELA-BELA.

Photograph 2: Land-use to the south of Bela-Bela



3.1 FOUR features (A – D) have been labelled on Photograph 2. **Identify** these features.

- A _____
- B _____
- C _____
- D _____

(8)

3.2 Refer to the topographic map extract 2428CD BELA-BELA.

3.2.1 The street pattern of Bela-Bela (Y in D3) is predominantly ... (Tick the correct option)

Grid	
Haphazard	
Modern planned	
Radial	

(2)

3.2.2 The farming activity at Welgelee (F6-7) is ... (Tick the correct option)

Extensive	
Intensive	
Plantations	
Orchards/ vineyards	

(2)

3.2.3 **Provide** ONE reason why Bela-Bela is classified as a central place town.

(2)

3.3 Refer to the topographic map extract 2428CD BELA-BELA as well as Photograph 2 on page 11/ page (i) of the Colour Insert.

There are numerous agricultural small holdings to the west of the Aventura Warmbad Game Reserve (E1-2, F1-2, G1-2).

3.3.1 In which land-use zone are these small holdings found?

(1)

3.3.2 **Account for** the location of these small holdings.

- ---

- ---

(4)

- 3.4 3.4.1 Study the Aventura Warmbad Game Reserve (E2-3, F2-3, G2-3) and Sondela Nature Reserve (C8-11, D8-11, E8-11, F9-11, G9-10).

Complete Table 1 below to **compare** various features of the two reserves.

Table 1: Comparing Aventura Warmbad Game Reserve and Sondela Nature Reserve

Features	Aventura Warmbad Game Reserve	Sondela Nature Reserve
Amenities and/ or facilities	<hr/> <hr/>	<hr/> <hr/>
Recreational activities	<hr/> <hr/>	<hr/> <hr/>
Access to the freeway (N1)	<hr/> <hr/>	<hr/> <hr/>

(12)

3.4.2 Circle the correct underlined answer in the statements below.

- (a) The information you have entered in Table 1 above is referred to as raster/ attribute/ spatial data. (2)
- (b) The area within the boundary of Sondela Nature Reserve forms a point/ line/ polygon data set. (2)

[35]

Q3 subtotal

QUESTION 4 ECONOMIC ACTIVITIES

Study the Fact File below.

FACT FILE

Umbono Mining is currently conducting an Environmental Impact Assessment of the Springbok Flats, an area shown on Figure 1 (page 4). The coalfield to be fracked is a remnant of the main Karoo basin. The area is dominated by maize, sorghum, cotton, sunflower and cattle farming activities as well as a variety of conservation and wildlife farming activities such as game farms, tourist lodges and hunting operations.

There are a number of major holiday resorts in the area such as Bela-Bela Forever and ATKV Klein Kariba, many game farms, a few golf estates and nature reserves such as Sondela. Industry and mining are not significant in the area.

[Source: <www.umbono.com>]

4.1 **Classify** the type of economic activity that is taking place at:

Towoomba Research Farm (F5, 6). _____ (2)

4.2 **Describe** TWO advantages of the proposed coal mining (fracking) for the area.

- _____
 - _____
- _____ (4)

4.3 Various stakeholders have met at several public meetings and are against fracking occurring in the area.

Design a PowerPoint presentation to persuade the mining company not to go ahead with the proposed mining.

Slides should include:

- Impact on game/ nature reserves
- Impact on agriculture
- Impact on water (surface and ground)

You will be marked on the geographical content and concepts of your slides. You must make specific reference to places that will be affected (block/ grid references).

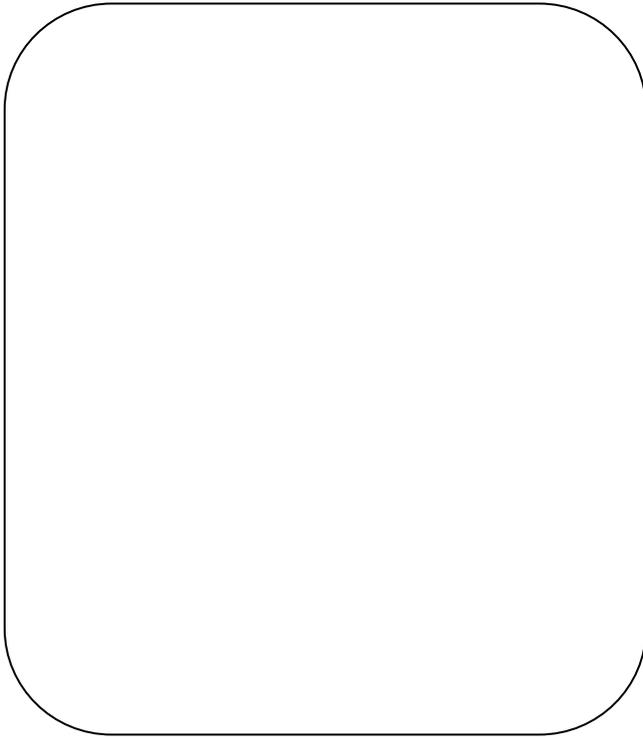
Use relevant points and suitable titles or subtitles on your slides (on page 15).

Marking rubric for presentation

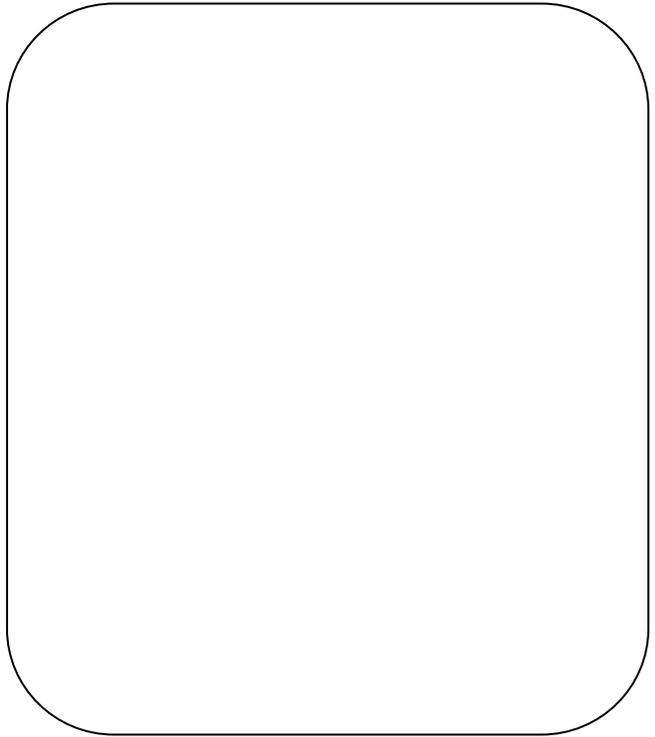
Criteria	Maximum marks
Relevant geographical points or factors: <ul style="list-style-type: none"> • Reference to location is important; it may include a map • Factors not favourable to mining in the area – use of specific subheadings provided • 3 slides 	6
Title slide	2
Overall presentation	2
Total	10

POWERPOINT PRESENTATION

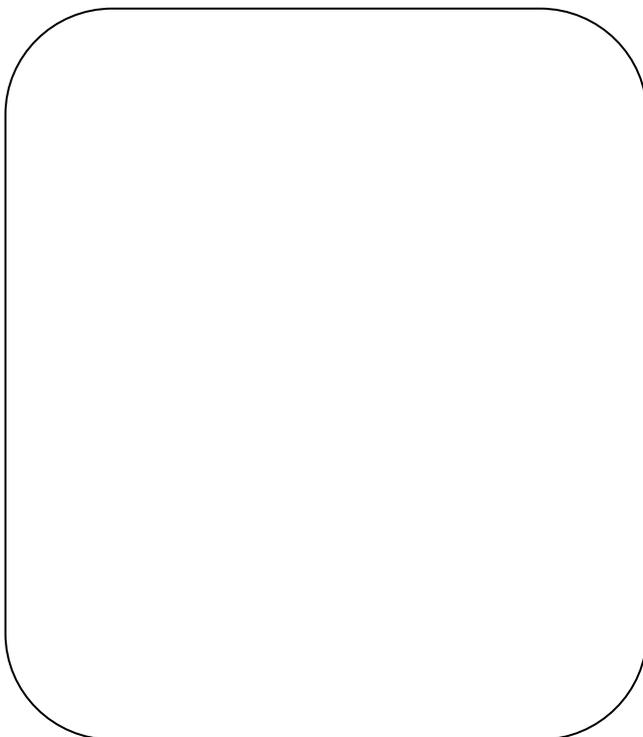
Slide 1 (Title)



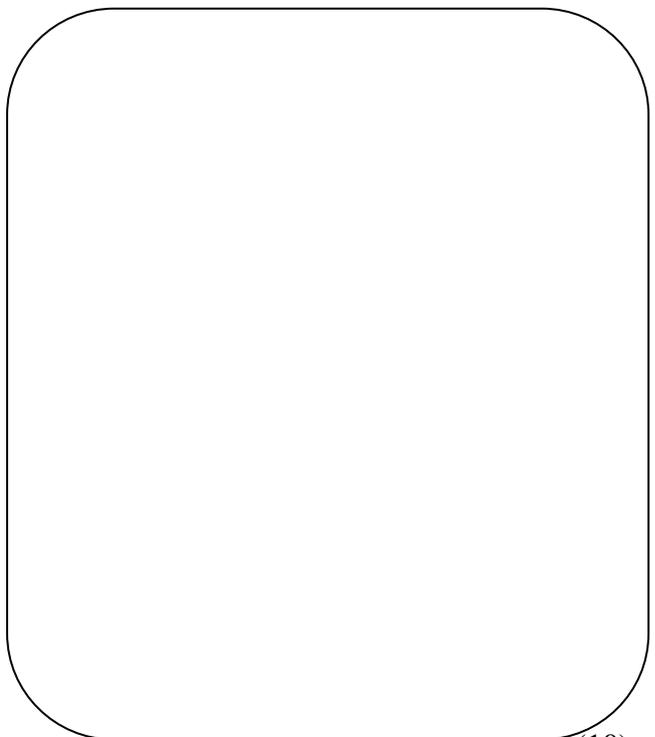
Slide 2 Impact on game/ nature reserves



Slide 3 Impact on agriculture



Slide 4 Impact on water (surface and ground)



(10)
[16]

Q4 subtotal

Total: 100 marks

Rough work (Not for marks)