



NATIONAL SENIOR CERTIFICATE EXAMINATION
SUPPLEMENTARY EXAMINATION MARCH 2016

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 15 pages. 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 2528DA CULLINAN and accompanying aerial photograph sheet (Photograph 1 on the Colour Insert) before answering the questions.
6. The topographic map has grid lines with markings A to I and 1 to 6 that may be used to identify locations according to blocks.
7. The topographic map extract, aerial photograph and your completed Answer Book 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	5	Total
Marks	31	11	23	19	16	100
Obtained						

Glossary of terms

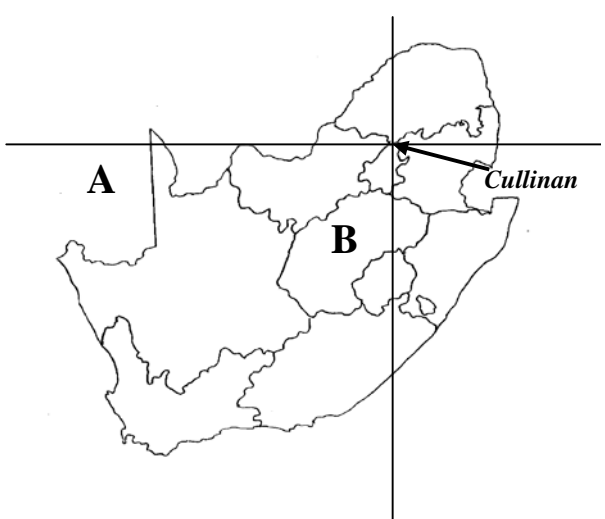
WORD	MEANING
Calculate	To work out the value of something using a mathematical method.
Compare	To point out or show both similarities and differences.
Comment	To give your opinion or to make a statement about something; to write about generally.
Complete	To fill in.
Design	To explain step-by-step a process or plan of action.
Identify	To give the details or characteristics of something.
Indicate	To show or mark the position of something.
Justify	To support an answer by giving reason, argument or evidence.
Match	To connect similar things or things that belong together.
Outline	To give the essential features or main aspects.
Provide	To put forward; 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
Cattle pen	Kraal
Cutline	Snylyn/ kaplyn
Diggings	Delwerye
Farm	Plaas
Fountain/ spring	Fontein
Furrow	Voor
Golf course	Gholfbaan
Holiday resort	Vakansieoord
Landing strip	Landingstrook
Marsh, swamp or wetland	Vlei
Ridge	Rant
River	Rivier
Road	Pad
Sewage disposal works	Rioolverwerkingsaanleg
Stream	Spruit

LOCATION MAP: LOCATION OF CULLINAN IN SOUTH AFRICA



Cullinan is a peaceful, Victorian village, situated about 35 km north-west of Pretoria. The town was established in 1902 and named after Sir Thomas Cullinan who discovered a very rich diamond pipe in the area. Over weekends, artists, bikers and city dwellers escape to this semi-rural community. As a result, many restaurants and Bed-and-Breakfast establishments have opened. Tours of the diamond mine are popular as well as township tours to Refilwe.

The vintage train runs between Pretoria and Cullinan over the weekend. Petra Mining Company purchased the mine from De Beers in 2008.

[Source: <www.cullinanmeander.wozaonline.co.za>]**QUESTION 1 ATLAS USE, MAP ORIENTATION AND TECHNIQUES**

1.1 Refer to the location map above, as well as the topographic map extract 2528DA CULLINAN, to answer the following questions. Tick the correct box.

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

Angola	
Botswana	
Lesotho	
Namibia	

(1)

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

Gauteng	
Free State	
North West	
Northern Cape	

(1)

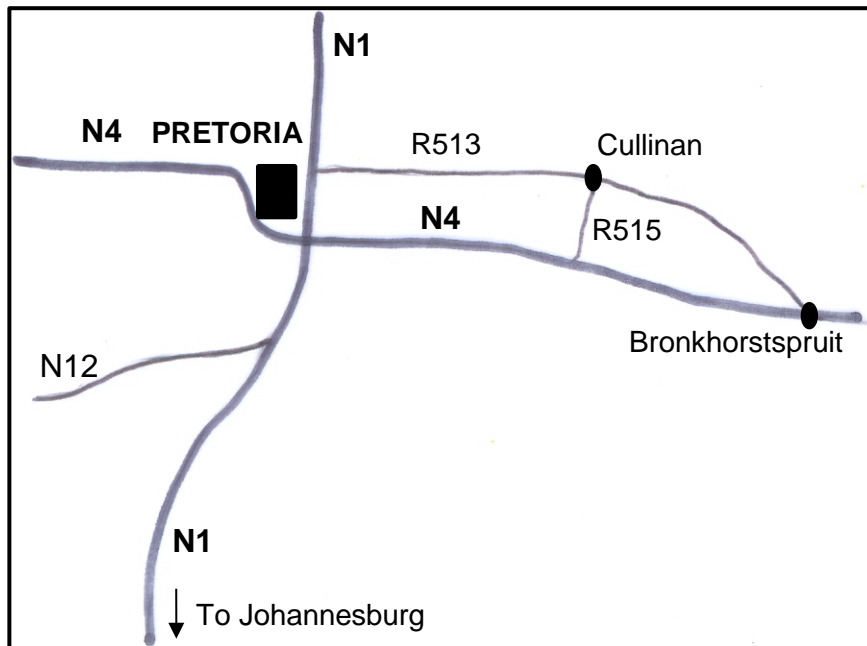
1.1.3 The rail distance (km) to Pretoria station from Rayton station (I2) is ...

4 km	
38 km	
42 km	
48 km	

(2)

1.1.4 Study Figure 1, a route map.

Figure 1: A route map showing the area around Cullinan



- (a) **Outline** the route you would take to Cullinan if you were travelling from Johannesburg.

(2)

- (b) **Justify** your choice of route in Question 1.1.4 (a) above.

(2)

1.2 Geographic techniques

1.2.1 **Complete** the following information for trigonometrical station 44 (F2).

Latitude		S
Longitude		E
Altitude		m

(6)

- 1.2.2 The magnetic declination for the topographic map extract 2528DA CULLINAN in 2016 will be ...

16° 52' W of True North	
17° 00' W of True North	
18° 44' E of True North	
18° 44' W of True North	

(2)

- 1.2.3 The approximate true bearing of trigonometrical station 44 (F2) from trigonometrical station 53 (D2) is ...

20°	
70°	
160°	
190°	

(2)

- 1.2.4 Locate the Premier Diamond Mine in E1/E2. Assume the mine is a rectangle. The approximate area of the mine (m²) is ...

0,45 m ²	
900 m ²	
400 000 m ²	
900 000 m ²	

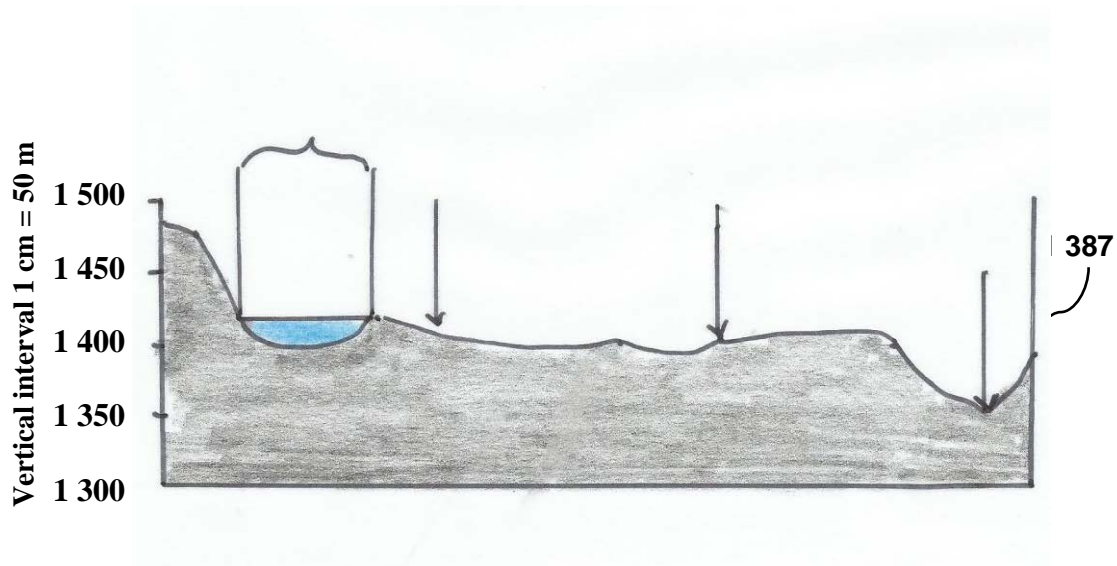
(2)

Calculation

1.2.5 Cross section and relief analysis

Study the cross section from trigonometrical station 53 (D2) to spot height 1387 (B4) below. The vertical interval of 1 cm to 50 m is used on the cross section.

Cross section from trigonometrical station 53 (D2) to spot height 1387 (B4)



- (a) A number of features have been labelled on the cross section. **Identify** these features.

A _____

B _____

C _____

D _____

(4)

- (b) **Calculate** the vertical scale of the cross section as a representative fraction.

1: _____

(2)

Calculation

- (c) **Calculate** the vertical exaggeration of the cross section (page 6).

VE = _____times (2)

Calculation

- 1.2.6 (a) Is trigonometrical station 44 (F2) intervisible from trigonometrical station 53 (D2)? Tick the correct answer.

YES	<input type="checkbox"/>
NO	<input type="checkbox"/>

(1)

- (b) **Justify** your answer.

Justification: _____

(2)

[31]

Q1 subtotal

QUESTION 2 DRAINAGE IN THE AREA

2.1 Refer to the topographic map extract 2528DA CULLINAN.

2.1.1 In which general direction is the Elands River flowing at point X (B4)?

_____ (1)

2.1.2 **Provide** ONE reason for your answer.

_____ (2)

2.2 Locate the farm named Skonsie (D4).

2.2.1 The owners of this farm have planned their water resources effectively.
Verify this statement.

- _____

- _____
_____ (4)

2.2.2 **Suggest** the effect that the water management strategies on Skonsie may have on the flow and quality of water entering the Elands River (D5).

Flow: _____

Quality: _____

_____ (4)

[11]

Q2 subtotal

QUESTION 3 PHOTOGRAPH ANALYSIS, GIS CONCEPTS AND LAND-USE

Refer to Photograph 1 below, as well as the topographic map extract 2528DA CULLINAN, to answer the following questions. A colour image is provided in the Colour Insert. The area shown on Photograph 1 is marked by a black block outline on the topographic map extract 2528DA CULLINAN.

Photograph 1: Land-use around Premier Diamond Mine

[<Google earth image>]

- 3.1 FOUR features (A – D) have been labelled on Photograph 1.
Identify these features.

A _____
B _____
C _____
D _____

(8)

- 3.2 The following average summer temperatures have been recorded for the area at sites B, C and E on Photograph 1 (page 9/Colour Insert).

Average Temperature	24 °C	21 °C	19 °C
3.2.1 Site (B, C or E)			
3.2.2 Reason	_____	_____	_____
	_____	_____	_____
	_____	_____	_____

- 3.2.1 With reference to the features labelled on Photograph 1, **match** an area (B, C or E) with its respective temperature on the table above. (3)

- 3.2.2 **Provide** a reason for each choice. (6)

- 3.3 The current mine office block is too small for the expanding mining operations. A site marked Y (Photograph 1) has been earmarked for the construction of new offices, a hospital and an administration block.

A GIS firm has been contracted to carry out an Environmental Impact Assessment (EIA) on the feasibility of site Y as the new proposed mine office site.

- 3.3.1 **Outline** ONE physical theme/ set of data the GIS specialists need to consider when conducting this study.

- _____
_____ (2)

- 3.3.2 **Suggest** ONE locational theme/ set of data that would be required to analyse the suitability of this site.

- _____
_____ (2)

- 3.3.3 **Outline** the importance of high resolution photographs in compiling an accurate EIA.

- _____
_____ (2)

[23]

Q3 subtotal

QUESTION 4 SETTLEMENT

Refer to the topographic map extract 2528DA CULLINAN.

- 4.1 **Indicate** if the following statements are True or False. Tick the correct box.
Provide a reason for your answer.

Locate the settlement of Kiepersol in H2.

- 4.1.1 Kiepersol is an example of a small town.

True	
False	

Reason _____

(3)

- 4.1.2 Originally, Kiepersol was positioned on a good defence site.

True	
False	

Reason _____

(3)

- 4.1.3 Kiepersol is an example of a wet-point settlement.

True	
False	

Reason _____

(3)

- 4.2 Refer to the topographic map extract 2528DA CULLINAN, as well as Photograph 1. The existence and location of Refilwe (C2) is a legacy of the South African city model.

Provide TWO pieces of evidence to prove this statement.

- _____

- _____

(4)

4.3 **Compare** the building density in Refilwe (C2) and Cullinan (E2).

Refilwe _____

Cullinan _____

(4)

4.4 **Comment** on the suitability of the site of the sewage disposal works in F4.

(2)

[19]

Q4 subtotal

QUESTION 5 ECONOMIC ACTIVITIES

Refer to the topographic map extract 2528DA CULLINAN.

- 5.1 **Provide** ONE example of each of the following economic activities that take place in the mapped area. Give the block reference for the activity.

Economic activity	Example	Block reference
Primary		
Tertiary		

(4)

- 5.2 **Suggest** ONE benefit of mining to the settlement of Cullinan.

- _____




(2)

- 5.3 Apart from being a mining town, Cullinan has become very popular with tourists over the past few years. A popular tour is that of the Petra Diamond Mine, a working mine.

Design an information page for a tourism website for the Cullinan area.

Include information on location, the variety of activities to do and where to stay.

Use the template on page 14.

CULLINAN	TOURISM	HOME PAGE
Location (Include a location map)	→	(4)
What to do? Historical 	→	(2)
What to do? Cultural 	→	(2)
Where to stay? 	→	(2)

[16]**Q5 subtotal****Total: 100 marks**

Rough work (Not for marks)