



Province of the  
**EASTERN CAPE**  
EDUCATION

**NATIONAL  
SENIOR CERTIFICATE**

**GRADE 12**

**SEPTEMBER 2015**

**GEOGRAPHY P2**

**MARKS: 75**

**TIME: 1½ hours**

**NAME:** \_\_\_\_\_

		MARKS	MOD
Q1	15		
Q2	20		
Q3	25		
Q4	15		

TOTAL MARKS	MOD
<b>75</b>	<b>75</b>



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This question paper consists of 14 pages.  
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**RESOURCE MATERIAL**

1. An extract from topographic map 2726 DC ODENDAALSRUS.
2. Orthophoto map 2726 DC 10 ODENDAALSRUS.
3. **NOTE:** The resource material must be collected by the schools for their own use.

**INSTRUCTIONS AND INFORMATION**

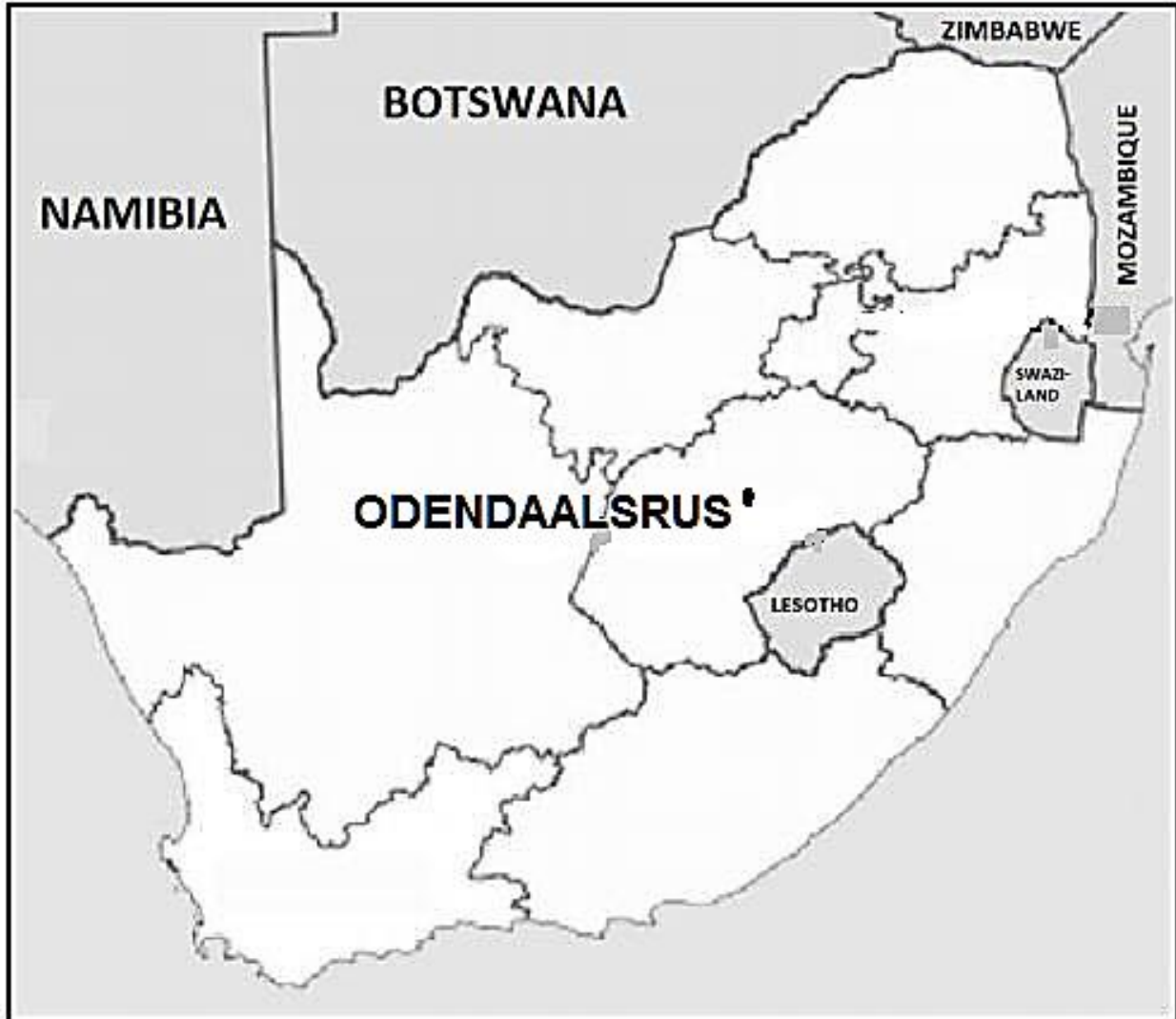
1. Write your NAME in the space provided on the cover page.
2. Answer ALL the questions in the spaces provided in this question paper.
3. You are supplied with a 1 : 50 000 topographic map 2726 DC of ODENDAALSRUS and an orthophoto map of a part of the mapped area.
4. You must hand in the topographic 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 and calculations. DO NOT detach this page from the question paper.
6. Show ALL calculations and formulae, where applicable. Marks will be allocated for this.
7. You may use a non-programmable calculator.
8. A glossary of some of the English and Afrikaans words and their translations appears below.

**GLOSSARY**  
**(SOME OF THESE TERMS MAY APPEAR ON THE MAPS.)**

ENGLISH	AFRIKAANS
Canal/Furrow	Kanaal/Voor
Shaft	Skag
Excavations	Uitgrawings
Conveyer belt	Vervoerband
Quarries	Steengroewe
Opencast mine	Oopgroefmyn
Service railway line	Diensspoorlyn
Motor race-track	Motorrenbaan
Hospital	Hospitaal
Stadium	Stadion
Yacht club	Seiljagklub
Slime dam	Slikdam
Aerodrome	Vliegveld
Golf course	Gholfbaan
Sewerage works	Rioolwerke

## GENERAL INFORMATION ON ODENDAALSRUS

The oldest gold mining town in South Africa, Odendaalsrus lies just north of the city Welkom, in the Goldfields Region of the Free State. The surrounding areas are important agricultural land on the Free State.



**SECTION A****QUESTION 1: MULTIPLE-CHOICE QUESTIONS**

The following statements are based on the 1 : 50 000 topographic map 2726 DC ODENDAALSRUS, as well as the orthophoto map of a part of the mapped area. Various options are provided as possible answers to the following statements. Choose the correct answer and write only the letter (A–D) in the block next to the statement.

1.1 The orthophoto map only depicts the ... part of the topographic map.

- A south-eastern
- B northern
- C north-eastern
- D south-western

1.2 The rows of trees, in block **A1**, found close to the mines are used as ...

- A demarcations of farmland.
- B protection for the riverbanks.
- C plantations.
- D windbreaks.

1.3 An orthophoto map is a ... aerial photograph which has contour lines and other labelled features drawn on it.

- A high oblique
- B low oblique
- C horizontal
- D vertical

1.4 When travelling in a southerly direction on the **R30** from Odendaalsrus, in block **B2**, the next central place settlement will be ...

- A Theunissen.
- B Virginia.
- C Welkom.
- D Bloemfontein.

1.5 The mean annual change of the magnetic declination from 1995 to 2000 was ...

- A 14' west.
- B 4' east.
- C 5' west.
- D 5' east.

1.6 The true bearing from trigonometrical station **345**, in block **F1**, to the Yacht Club, in block **I2** is ...

- A 163°.
- B 74°.
- C 343°
- D 170°.

☐

1.7 The main means of transporting water, in block **H3/D2**, from the mines to the dams on the topographic map is by ...

- A furrows and windpumps.
- B canals and windpumps.
- C pipelines and furrows.
- D windpumps.

☐

1.8 The area marked **1** on the orthophoto map is ...

- A a mining area.
- B non-perennial water.
- C a mine dump.
- D a recreational area.

☐

1.9 The aerodrome in block **I2** on the topographic map is found in the ...

- A CBD.
- B rural-urban fringe.
- C residential area.
- D recreational area.

☐

1.10 The feature marked **2** on the orthophoto map is a/an ...

- A minedump.
- B embankment.
- C cemetery.
- D holiday resort.

☐

1.11 The settlement of Odendaalsrus, in block **B3**, originally developed as a ... settlement.

- A mining
- B farming
- C resort
- D junction

☐

1.12 The residential area marked **A** on the topographic map shows a ... street pattern.

- A grid-iron
- B radial
- C concentric
- D irregular

☐

1.13 The natural feature marked B on the topographic map in block G2 is a ...

- A dry pan.
- B perennial river.
- C non-perennial river.
- D marsh and vlei.

☐

1.14 The road connecting Odendaalsrus with Virginia, via Welkom, is a ...

- A national road.
- B main road.
- C arterial road.
- D other road.

☐

1.15 What recreational facility is found at the co-ordinates  
27°54'10"S 26°42'45"E/27°54,2'S 26°42,8'E on the topographic map?

- A Diggings
- B Horse riding club
- C Caravan park
- D Phakisa motor racing track

☐

(15 x 1) (15)

**TOTAL SECTION A: 15**

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

- 2.1 If you were travelling SSE (south south east) on a train (**5** on orthophoto map), would Oudensdaal be to your east or west?

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(1 x 1) (1)

- 2.2 Are points **4** to point **5** on the orthophoto map intervisible?  
Give a reason for your answer.

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(2 x 1) (2)

- 2.3 Calculate the area of the demarcated (marked off) region on the topographic map, which illustrates the area covered by the orthophoto map, in square kilometres (km<sup>2</sup>).  
Show ALL calculations. Marks will be awarded for calculations.

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(6 x 1) (6)

- 2.4 Calculate the average gradient from spot height **1341**, in block **C4**, to spot height **1357**, in **D6**. Use the straight-line distance between the two spot heights.  
Show ALL the calculations. Marks will be awarded for calculations.

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(6 x 1) (6)

2.4.1 Is the gradient that you calculated in QUESTION 2.4 steep, or gentle?

\_\_\_\_\_ (1 x 1) (1)

2.4.2 Explain your answer to QUESTION 2.4.1.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (2 x 1) (2)

2.5 Explain why the Gert Combrink Dam in block **B/C 3** appears larger on the orthophoto map, marked **12**, than on the topographic map.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (1 x 1) (1)

2.6 State the contour interval of the orthophoto map.

\_\_\_\_\_ (1 x 1) (1)

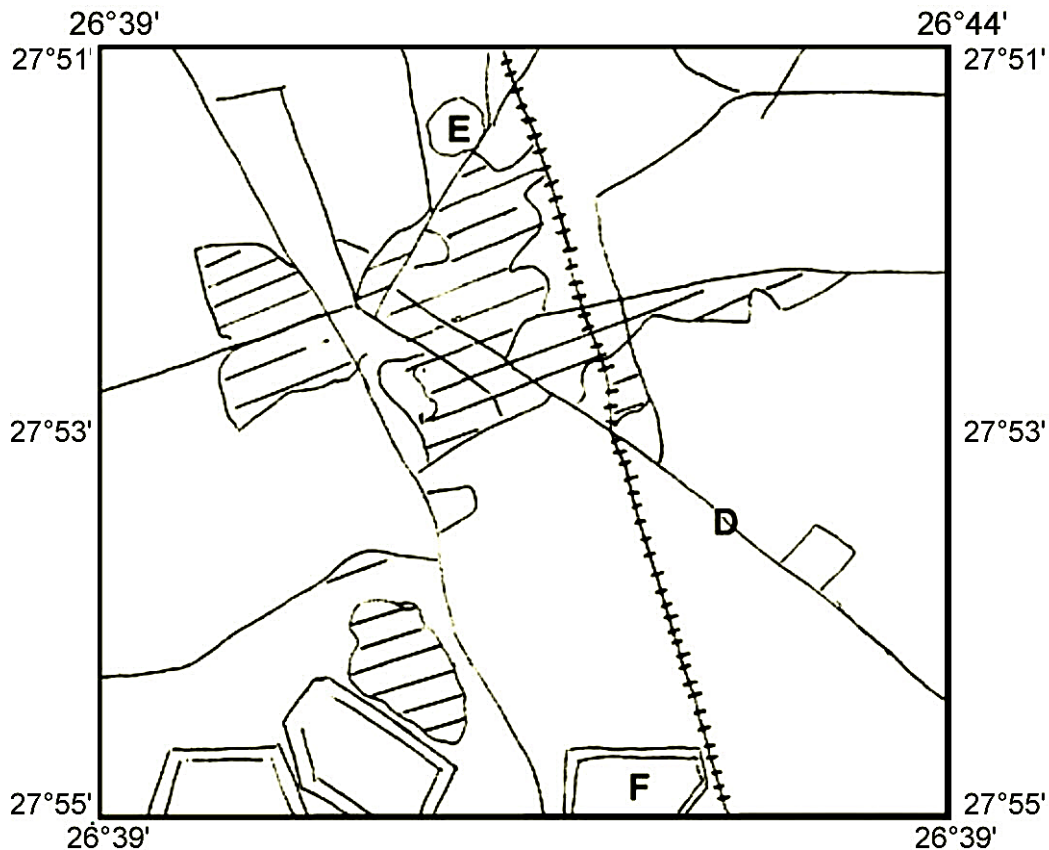
**TOTAL SECTION B: 20**



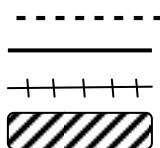
## SECTION C

## QUESTION 3: MAP INTERPRETATION AND ANALYSIS

- 3.1 The sketch map below represents the area covered by the topographic map. Study the topographic map and then indicate the features, referred to in (3.1.1–3.1.4) as accurately as possible on the sketch map.

Reference

River  
Roads  
Railway  
Built-up areas

Verwysing

Rivier  
Paaie  
Spoorweg  
Beboude gebied

- 3.1.1 The reference number of the topographic map.

\_\_\_\_\_ (1 x 1) (1)

- 3.1.2 Indicate on the sketch the trigonometrical station **286** (block **C5**) with a letter **C** and give its height.

**C** = (ON THE SKETCH)

\_\_\_\_\_ (2 x 1) (2)

- 3.1.3 Give the destination of the main arterial road leading south east marked **D**.

**D** = \_\_\_\_\_

(1 x 1) (1)

- 3.1.4 Identify the human activities at the following places:

**E** = \_\_\_\_\_

**F** = \_\_\_\_\_

(2 x 1) (2)

- 3.2 Give ONE piece of evidence, in block **A2**, from the topographical map that supports the fact that gold mining takes place in the area.

\_\_\_\_\_  
\_\_\_\_\_

(1 x 2) (2)

- 3.3 Locate Free State Geduld Mine, in blocks **E3** and **E4**.

- 3.3.1 List THREE services or facilities that support this mine.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(3 x 1) (3)

- 3.3.2 Over recent decades, gold has declined in importance. What impact has this had on the economy of Odendaalsrus?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(1 x 2) (2)

- 3.4 Explain TWO environmental impacts of gold mining in the area.

\_\_\_\_\_  
\_\_\_\_\_

(2 x 2) (4)

- 3.5 Identify the types of rural/urban land uses at **9**, **10** and **11** on the orthophoto map. Give a reason for the choice of the original site in each case.

SITE	TYPE	CHOICE OF SITE
<b>9</b>		
<b>10</b>		
<b>11</b>		

(6 x 1) (6)

- 3.6 Refer to the **R30** arterial road, in block **H3**, on the topographic map. State ONE advantage of the **R30** bypassing the town of Welkom.

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(1 x 2) (2)

**TOTAL SECTION C: 25**

**SECTION D****QUESTION 4: GEOGRAPHICAL INFORMATION SYSTEMS (GIS)**

4.1 State THREE processes when working with GIS.

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(3 x 1) (3)

4.2 Data storage in GIS should be in a form of ...

1. 

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2. 

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(2 x 1) (2)

4.3 There are hundreds of data-collecting satellites orbiting earth.

4.3.1 Define the term *remote sensing*.

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(1 x 1) (1)

4.3.2 Satellites gather data by using a/an (active/passive) system.  
(Choose the correct word.)

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(1 x 1) (1)

- 4.4 Another new mining development is planned for the Odendaalsrus. A GIS specialist has been called in to assist the mining developers with conducting an **EIA** (Environmental Impact Assessment) for the project.

4.4.1 Evaluate why a GIS analysis would be beneficial.

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(2 x 2) (4)

4.4.2 Identify the TWO layers the specialist would use for this study.

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(2 x 1) (2)

4.4.3 Motivate each of the answers given in QUESTION 4.4.2.

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(2 x 1) (2)

**TOTAL SECTION D: 15**  
**GRAND TOTAL: 75**



**ROUGH WORK AND CALCULATIONS**

