

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

SEPTEMBER 2014

**GEOGRAPHY P2
MEMORANDUM**

MARKS: 75

This memorandum consists of 11 pages.

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

The following statements are based on the 1 : 50 000 topographical map 3332 CA OUDTSHOORN, 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 map reference north east of the topographical map of 3322 CA Oudtshoorn, is ...

A 3222AC.
B 3321DB.
C 3321BD.
D 3322AD.

D

- 1.2 The contour interval on the orthophoto map is ...metres.

A 5
B 10
C 20
D 2

A

- 1.3 The type of stream channel of the Olifants River found at **A** in block **I6/7** the topographical map is ...

A meandering channel.
B braided channel.
C non-perennial.
D rock-controlled channel.

B

- 1.4 Identify the constructed feature **8** on the orthophoto map.

A School
B Factory
C Bus station
D Railway station

D

- 1.5 The location (co-ordinates) of the trigonometrical station number **307** in block **D9** is ...

A 22°09'39"E 33°33'55"S / 22°09,7'E 33°33,9'S.
B 33°36'10"S 22°11'25"E / 33°36,2'S 22°11,4'E.
C 33°33'55"S 22°08'39"E / 33°33,9'S 22°08,7'E.
D 33°03'55"E 22°09'39"S / 33°03,9'E 22°09,7'S.

C

1.6 The type of rural settlement pattern found at **B** in block **C14** on the topographical map is ...

- A dispersed.
- B linear.
- C nucleated.
- D irregular.

C

1.7 The landform in the vicinity of **C** in block **C12** on the topographical map is a ...

- A gorge.
- B saddle.
- C waterfall.
- D spur.

D

1.8 Altitude (height) in block **I15** is represented by ...

- A a benchmark and contour lines
- B a spot height and a bench mark
- C a trigonometrical station and a bench mark
- D contour lines and a spot height

D

1.9 The race track in block **F11** is found in the ... topographical map.

- A CBD
- B rural-urban fringe
- C residential area
- D slum

B

1.10 The map projection used on the orthophoto map is ...

- A Universal Transverse.
- B Lambert.
- C Gauss Conform.
- D Mercator.

C

1.11 The feature marked **2** on the orthophoto map is a ...

- A dam.
- B sewage disposal works.
- C furrow.
- D water reservoir.

B

1.12 The feature found at **D** (block **D3**) on the topographical map is ...

- A erosion.
- B a dry pan.
- C sand.
- D a prominent rock outcrop.

A

1.13 The secondary economic activity taking place at 3 on the orthophoto map is ...

- A farming.
- B manufacturing.
- C sewerage works.
- D education.

B

1.14 The dams that are found in the rural areas of Oudtshoorn are mainly used for ...

- A recreation.
- B domestic purposes.
- C industrial purposes.
- D irrigation.

D

1.15 The rows of trees (block **H12**) found close to the farms along the Oliphant's River are ...

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

D

(15 x 1) (15)

TOTAL SECTION A: 15

SECTION B

QUESTION 2: MAPWORK TECHNIQUES AND CALCULATIONS

- 2.1 Calculate the distance of the Oudtshoorn runway from point **4** to point **5** on the orthophoto map. Show ALL the calculations. Express your answer in kilometres.

Distance = distance in cm x scale / 100 000 ✓

$$= \frac{(17 \text{ cm} \times 10\,000)}{100\,000} \checkmark \quad \text{OR} \quad (17 \times 0,1) \text{ km} \checkmark$$

$$= 1,7 \text{ km} \checkmark$$

$$= 1,7 \text{ km} \checkmark$$

$$\text{range: } 1,68 \text{ km} - 1,72 \text{ km} \quad (3)$$

- 2.2 The following cross-section was drawn overlooking the Oliphant's River from point **X** (block **K8**) to point **Y** (block **I9**) on the topographical map.

- 2.2.1 Use the topographical map to identify the features **E**, **F**, **G** and **H** on the cross-section.

E : Highgate ostrich farm /secondary road ✓

F : Cultivated land ✓

G : Row of trees/furrow ✓

H : Olifants River ✓ (4)

- 2.2.2 What is the horizontal scale of the cross section above?

1 : 50 000 ✓ (1)

- 2.2.3 Name the type of slope is found between **X** and **Y**.

Concave ✓ (1)

- 2.3 Calculate the vertical exaggeration of the cross-section, with a vertical scale of 1 cm to represent 20 m, and by using the horizontal scale in the answer to QUESTION 2.2.2 above.

Show ALL your calculations.

$$VE = \frac{VS}{HS} \checkmark$$

$$\text{OR} \quad VE = \frac{VS}{HS} \checkmark$$

$$HS = 1 \text{ cm} : 500 \text{ m}$$

$$VS = 1 \text{ cm} : 20 \text{ m} \checkmark$$

$$= 1/20 \div 1/500 \checkmark$$

$$= 1/20 \times 500/1 \checkmark$$

$$= 25 \text{ times} \checkmark$$

$$HS = 1 \text{ cm} : 50\,000 \text{ cm}$$

$$VS = 1 \text{ cm} : 20 \text{ m} (1 \text{ cm} : 2000 \text{ cm}) \checkmark$$

$$= 1/2000 \div 1/50\,000 \checkmark$$

$$= 1/2000 \times 50\,000/1 \checkmark$$

$$= 25 \text{ times} \checkmark$$

(5)

- 2.4 The Oudtshoorn aerodrome is located in block **G12** on the topographical map.

From which direction do planes land at the aerodrome?

SSW or SW ✓ (1)

- 2.5 Calculate the present magnetic declination in the mapped area.

Show ALL your calculations.

Difference in years = 2014 – 2010

= 4 years ✓

Total annual change = 4 x 5' W

= 20' W ✓

Magnetic declination = 25°33'W + ✓ 20' W

= 25°53' ✓

= 25°53' W ✓ (5)

TOTAL SECTION B: 20

SECTION C**QUESTION 3: MAP INTERPRETATION AND ANALYSIS**

3.1 Suggest TWO factors that favoured the siting of Oudtshoorn.

In a valley / Flat land ✓
 Perennial river passes near town ✓
 [Any TWO]

(2 x 1) (2)

3.2 What type of town is Oudtshoorn classified as?

Central Place town ✓

(1 x 1) (1)

3.3 Explain how the farming community surrounding Oudtshoorn relies on the town for survival.

It provides the surrounding rural farming area
 with urban goods and services ✓✓
 Market ✓✓
 e.g. seed, tractors, banks, co-ops ✓✓
 [Any TWO]

(2 x 2) (4)

3.4 Give ONE reason, visible on the orthophoto map, why this specific location marked **6** was selected for the cemetery.

More peaceful ✓✓
 Large piece of land available ✓✓
 Land cheaper on outskirts of the city ✓✓
 Land is flat ✓✓
 Outside city ✓✓
 Room for expansion ✓✓
 Accessibility ✓✓
 [Any ONE]

(1 x 2) (2)

3.5 Commercial farming occurs along the Olifants River.

3.5.1 Explain any TWO factors (besides the factors related to water supply), that favoured this (commercial) type of farming.

Extensive flat land ✓✓
 Fertile soil on the flood plain ✓✓
 Good network of roads and railways ✓✓
 Good supply of electricity ✓✓
 Large piece of land available ✓✓
 [Any TWO]

(2 x 2) (4)

- 3.5.2 How do farmers access water from the Oliphant's River (block **H9/10**) for their farms?

Furrows ✓/Canal

(1 x 1) (1)

- 3.6 3.6.1 Identify the primary economic activity labelled **I** found at Safari in block **H10** on the topographical map.

Ostrich farming ✓

(1 x 1) (1)

- 3.6.2 Explain ONE way in which this activity (answer to QUESTION 3.6.1) contributes to the economy of Oudtshoorn.

Tourism ✓✓

Provided employment ✓✓

Developed the infrastructure ✓✓

Developed the region ✓✓

Provide raw materials for the industries ✓✓

Food supply / food security ✓✓

Foreign exchange earner ✓✓

[Any ONE]

(1 x 2) (2)

- 3.7 State ONE measure used by engineers in the construction of the railway line to overcome the uneven topography.

Follow contour of land ✓✓

Follow mountain pass ✓✓

[Any ONE]

(1 x 2) (2)

3.8 Compare the street pattern at **1** to that of **7** on orthophoto map in terms of the following:

	1	7
STREET PATTERN	(Planned) irregular ✓ Free pattern ✓ [ANY ONE]	Gridiron ✓ Block ✓ Rectangular ✓ [ANY ONE]
DISADVANTAGE	Get lost easily ✓ No focal point ✓ Difficult laying out plots ✓ Difficulty to subdivide ✓ Limited access ✓ [ANY ONE]	Wastes time and petrol ✓ Traffic congestion ✓ Easy to hijack motorists ✓ Boring/monotonous ✓ Steep roads ✓ More accidents ✓ Stressful/road rage ✓ [ANY ONE]

(4 x 1) (4)

3.9 Refer to blocks **B11/12** on the topographical map.

3.9.1 Identify the type of drainage pattern **E**.

Dendritic ✓

(1 x 1) (1)

3.9.2 What type of underlying rock structure is responsible for this pattern at **E**?

Massive igneous **or** massive sedimentary rocks of uniform resistance to erosion. ✓

(1 x 1) (1)

TOTAL SECTION C: 25

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

- 4.1 Match a statement in COLUMN A with a concept from COLUMN B.
Write only the letter (A–F) of the correct term next to the number
(4.1.1–4.1.5) as given below, for example 4.1.6 G.

COLUMN A		COLUMN B	
4.1.1	data that can be used by different organisations	B	Data sharing ✓
4.1.2	global positioning system	D	GPS ✓
4.1.3	the observation of the earth from a distance using satellites to gather information	E	Remote sensing ✓
4.1.4	a method of storing GIS data as rectangular grid cells/pixels	A	Raster ✓
4.1.5	the detail with which a map depicts the location and shape of the feature	C	Spatial resolution ✓

(5 x 1) (5)

- 4.2 Image **5** on the orthophoto map has a poor resolution. How can we use GIS to improve the clarity of the photographed image?

High resolution camera ✓✓

Use of large scale map ✓✓

Capture smaller area ✓✓

[ANY ONE – Accept other]

(1 x 2) (2)

- 4.3 The following questions refer to the Greystone Game Park in block F4 on the topographical map, which makes use of GIS systems to help manage the sustainability of the reserves.

- 4.3.1 Name the GIS data manipulation process that the green shading represents.

Buffering ✓

(1 x 1) (1)

- 4.3.2 Give TWO explanations of the significance of the green shading around the Greystone Game Park.

Protection of wildlife ✓✓

Preservation of habitat ✓✓

Prevention of human settlement into the reserve ✓✓

[ANY TWO – Accept others]

(2 x 2) (4)

- 4.3.3 You are tasked to create an attribute table for the Greystone Game Park in block **F4**. Name THREE attributes you would consider including in your GIS.

Park address ✓

Contact information ✓

Geographic position – usually spatial data ✓

Number of people ✓

Type of animals ✓

Number of buildings ✓

Drainage – rivers/dams ✓

Vegetation cover ✓

Relief of land ✓

[ANY THREE – Accept other]

(3 x 1) (3)

TOTAL SECTION D: 15
GRAND TOTAL: 75