



education

Department:
Education
REPUBLIC OF SOUTH AFRICA

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

GEOGRAPHY P2

MEMORANDUM

EXEMPLAR 2008

MARKS: 100

TIME: 1½ hours

This memorandum consists of 7 pages including the cover page.

QUESTION 1

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

1.1 The number of the map to the west of the map 2726 DC ODENDAALSRUS is ...

- A 2726 DA.
- B 2826 BA.
- C 2726 DD.
- D 2726 CD.

D

1.2 The exact location (co-ordinates) of the windpump/windmill in block E5 is ...

- A $26^{\circ}43'09''\text{S } 27^{\circ}55'05''\text{E}$.
- B $27^{\circ}55'05''\text{S } 26^{\circ}43'09''\text{E}$.
- C $26^{\circ}40'05''\text{S } 27^{\circ}50'10''\text{E}$.
- D $27^{\circ}50'10''\text{S } 26^{\circ}40'05''\text{E}$.

B

1.3 The direction of spot height 1385 (block F 6) from spot height 1364 (block E5) is ...

- A south-west.
- B west.
- C south-east.
- D south.

C

1.4 The man-made feature labelled **A** on the topographical map in block E6 is a ...

- A main road.
- B arterial route.
- C secondary road.
- D national road.

A

1.5 The contour interval of the topographical map is ...

- A 5 m.
- B 20 m.
- C 10 m.
- D 25 m.

B

1.6 The natural feature marked **B** on the topographical map in block G2 is a ...

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

D

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

- A Mercator.
- B Lambert.
- C Gauss conform.
- D Universal tranverse.

C

1.8 The orthophoto map only depicts the ... part of the topographical map.

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

D

1.9 The flight direction of the aeroplane when the photographs for the orthophoto map were taken, was ...

- A southwards.
- B westwards.
- C eastwards.
- D northwards.

B

1.10 The area marked 1 on the orthophoto map is a ...

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

B

(10 x 2)

[20]

QUESTION 2

2.1 Calculate actual (real) distance from point 5 to point 6 on the orthophoto map. Show ALL the calculations. Express your answer in kilometres.

$$\begin{aligned} \text{Distance} &= \text{distance in cm} \times \text{scale} / 100\,000 \text{ (1)} \\ &= 16 \text{ cm} \times 10\,000 \text{ (1)} \quad \text{OR} \quad (16 \times 0,1) \text{ km (1)} \\ &= 1,6 \text{ km (1)} \quad \quad \quad = 1,6 \text{ km. (1)} \end{aligned}$$

Range: 1,5 km – 1,7 km

(3)

2.2 How long would you take to travel from point 5 to point 6 if you travelled at 80km/h? Show your calculations.

$$\begin{aligned} \text{Time} &= \text{Distance} / \text{Speed} \\ &= 1,6 \text{ km} / 80 \text{ km/h (1)} \\ &= 0,02 \text{ hrs or } 1,2 \text{ minutes or } 1 \text{ minute } 12 \text{ seconds (1)} \end{aligned}$$

Range: 0,01 hrs to 0,3 hrs

(2)

2.3 The following cross-section was drawn from point **7** to point **8** on the orthophoto map.
Use both the topographical map and the orthophoto map to identify **P**, **Q** and **R**.

P : Road/R34 (2)
Q : Diggings (2)
R : Service lines/power lines (2) (3x2) (6)

2.4 Calculate the vertical exaggeration for the cross-section. Show ALL calculations.

$VE = VS / HS$
Vertical scale : 1 cm = 10 m
= 1 : 1000 or 1 /1000 (1)
Horizontal scale = 1 : 10 000 (1)
 $VE = 1 / 1\ 000 \times 10\ 000 / 1$ or $1 / 1\ 000 / 1 / 10\ 000$
= 10 times (1) (3)

2.5.1 Calculate the average gradient for the cross-section. Show ALL calculations.

$Gradient = VI / HE$ (1)
 $VI = 1325,9 - 1309,1$ (1) = 16,8 m (1)
 $HE = 7,4\ cm \times 50\ 000 \div 100$ (1) [7,3cm – 7,5 cm]
= 3700 m [3650 m – 3750 m] (1)
 $Gradient = 16,8 \div 3700\ m$
= 1 : 220.238 (1)
[Range:217,261 – 223,214] (6)

2.5.2 Is the gradient that you calculated in QUESTION 2.5.1 steep or gentle?

Gentle (2) (1x2) (2)

2.5.3 Explain your answer to QUESTION 2.5.2.

For every 1 m you rise vertically you cover 217,261 – 223,214] (2) (1x2) (2)
[24]

QUESTION 3

3.1 The mapped area experiences seasonal rainfall. Provide evidence from the map to support the statement.

Non-perennial rivers (2)
Furrows (2)
Canals and dams (2)
[Any ONE] (1x2) (2)

- 3.2 It is evident on the map that groundwater is used during the dry season to supplement surface water. Provide evidence from the map to support this statement.
- Windpumps/windmills (2)* (1x2) (2)
- 3.3 Find the golf course in block A3 on the topographical map.
- 3.3.1 Which physical feature played a role in selecting the site of the golf course?
- Marshes and vlei (2)* (1x2) (2)
- 3.3.2 What is the advantage of selecting the site close to the feature mentioned in QUESTION 3.2.1?
- Enough water to water the golf course (2)* (1x2) (2)
- 3.3.3 Why would the site selected for the golf course not be suitable for a residential area?
- Unstable (2)*
Soil too moist (2)
Too much underground water/wetland (2)
Buildings can be damaged/collapse easily (2)
Breeding ground for mosquitos (2)
 [Any TWO] (2x2) (4)
- 3.4 Refer to both the orthophoto and topographical map and identify the features labelled **2**, **3** and **4** on the orthophoto amp.
- 2 : *Conveyer belt (2)*
 3 : *Cemetery/graveyard (2)*
 4: *Sewerage works (2)* (3x2) (6)
- 3.5 Find the Phakisa motor race-track in block D4.
- 3.5.1 In which urban land-use zone is the race-track?
- Rural urban fringe (2)* (1x2) (2)
- 3.5.2 Why would one find the race-track in the land-use zone mentioned in QUESTION 3.5.1?
- Noise (2)*
Away from CBD (2)
Large space available (2)
Land flat (2)
Accessible for people from both towns (2)
 [Any TWO] (2x2) (4)

- 3.6 The two urban settlements, Odendaalsrus and Welkom, can be seen on the topographical map.
- 3.6.1 In terms of the urban hierarchy, which of the two settlements will have a higher hierarchical order?
- Welkom (2)* (1x2) (2)
- 3.6.2 Give a reason for your answer to QUESTION 3.5.1.
- Much bigger in size (2)*
Larger CBD (2)
More services shown (2)
[Any ONE] (1x2) (2)
- 3.6.3 Which settlement will have a larger sphere of influence?
- Welkom (2)* (1x2) (2)
- 3.6.4 Give a reason for your answer to QUESTION 3.5.3.
- More shops (2)*
More higher order functions (2)
Serves a larger catchment area (2)
[Any ONE] (1x2) (2)
- 3.6.5 What is the dominant (main) street pattern of Odendaalsrus in block B3?
- Grid/rectangular/block (2)* (1x2) (2)
- 3.6.6 State ONE advantage of the street pattern in QUESTION 3.5.5.
- Easy to lay out (2)*
Easy for subdivision of land (2)
Do not get lost easily (2)
[Any ONE] (1x2) (2)

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QUESTION 4

- 4.1 Geographical Information Systems (GIS) can store, manage, analyse and display data. To manage the data in GIS you must look at the different parts that make up the system.

Name any TWO parts of GIS that make up the system.

Hardware (2)

Software (2)

Data (2)

People (2)

Methods (2)

[Any TWO]

(2x2) (4)

- 4.2 There are two main types of data, namely spatial data and attribute data. Differentiate between *spatial data* and *attribute data*.

Spatial data refers to information linked to a specific location through co-ordinates and represented by points, lines or polygons (2)

Attribute data refers to a descriptive quality or characteristic (2)

(2x2) (4)

- 4.3 State whether the following types of spatial data are vector, raster or image data:

4.3.1 *Vector data (2)*

4.3.2 *Raster data (2)*

4.3.3 *Vector data (2)*

(3x2) (6)

- 4.4 Geographical information is obtained in a number of ways.

- 4.4.1 Name any TWO ways in which geographical information can be obtained.

Surveys (2)

Maps (2)

Aerial photographs (2)

Fieldwork (2)

Statistics (2)

Administrative records (2)

Satellite Images (2)

[Any TWO]

(2x2) (4)

- 4.4.2 What is a *geographical data base*?

Digitally recorded information from sources such as maps, photographs, satellite images and so forth (2)

(1x2) (2)

[20]

GRAND TOTAL: 100