Province of the
EASTERN CAPE
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 11

NOVEMBER 2012

GEOGRAPHY P2 MEMORANDUM

MARKS: **100**

This memorandum consists of 10 pages.

SECTION A

QUESTION 1: MULTIPLE-CHOICE QUESTIONS

The following statements are based on the 1:50 000 topographical map 3418 BB SOMERSET WEST and the orthophoto map 3418 BB 7 of the same 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 mapped area to the west of Somerset West 3418 BB is …

A 3419 AA.
B 3418 BD.
C 3418 BA.
D 3419 BD

C

1.2 The contour interval on the orthophoto map is …

A 5.
B 10.
C 20.
D 2.

A

1.3 The ocean current found to the south-west of the town Somerset West is the ...

A Mozambique.
B Peruvian.
C Benguela.
D Cape Town.

C

1.4 The number 3418 on the topographical map and orthophoto map represents the ...

A flight number of the sequence.
B time and date of the map.
C magnetic declination.
D latitude and longitude of the area.

D

1.5 The Steenbras River (L6) is flowing in a/an ... direction.

A easterly
B north-easterly
C north-westerly
D south-westerly

D

1.6 The tertiary economic activity found at O on the orthophoto map is a …

A post office.
B caravan park.
C golf course.
D marsh and vlei.

C

1.7 The coastline in block K6 on the topographical map is mainly ...

A smooth.
B dry.
C rocky.
D sandy.

C

1.8 The true bearing from the X (G5) to The Domes trigonometrical station Δ 9 (B8) is …

A 32°.
B 212°.
C 40°.
D 220°.

A

1.9 When travelling by train in an easterly direction from Streenbras Station (I 12) the next station will be ...

A Caledon.
B Elgin.
C Belville.
D Cape Town.

B

1.10 The feature found at grid reference at 34°04'45"S and 18°46'05"E is the ...

A sewerage works.
B built-up area.
C Macassar Beach.
D cultivated lands.

A

(10 x 2) (20)

TOTAL SECTION A: 20

SECTION B

QUESTION 2: MAPWORK TECHNIQUES AND CALCULATIONS

2.1 Calculate the average gradient between trigonometrical beacon Δ 148 (block C8) and the benchmark 21.1 (block G7). Show ALL calculations.

GRADIENT = $\frac{VI}{HE}$ ✓

VI = 1 003,1 – 21,1 m = 982 m ✓

HE = 15,4 x 0,5 = 7,7 km (7,7 x 1 000) = 7 700 m ✓

Gradient = $\frac{VI}{HE}$

= $\frac{982}{7\ 700}$ m ✓

= 1 : 7,84 (Range 1: 7,74 – 1: 7,94) ✓ (5)

2.2 Calculate the area of block A1 on the topographical map. Show ALL your calculations and express your answer in km².

AREA = L x B ✓

L = $\frac{3,7}{2}$ (or 3,7 ✓x 0,5)

B = $\frac{3,1}{2}$ (or 3,1 ✓ x 0,5) (Allow for 1 mm less or more)

= 1,55 km x 1,85 km ✓

= 2,867 km² ✓ (Range = 2,7 – 3,04 km²) (5)

2.3 What do contour lines, trigonometrical stations, spot heights and bench marks all have in common?

All represent height or altitude above sea level. ✓✓ (2)

2.4 Refer to trigonometrical beacon 112 (block J9) and trigonometrical beacon at T (block M6). Are the two places intervisible?
Give ONE reason for your answer.

Answer:
Yes ✓ (1)

Reason:
T is higher than trigonometrical beacon 112. ✓✓
There is no obstruction between T and trigonometrical beacon 112. ✓✓
(Any 1 x 2) (2)

2.5 Calculate the magnetic declination for the year 2012. Show ALL calculations.

Difference in years **=** 2012 – 2002 = 10 years ✓

Mean annual change = 10 x 6' W
= 60' W ✓ = 1°00' W of TN

MD for 2012 **=** 23°53 '
+ ✓1° 00' ✓
= 24°53' W ✓

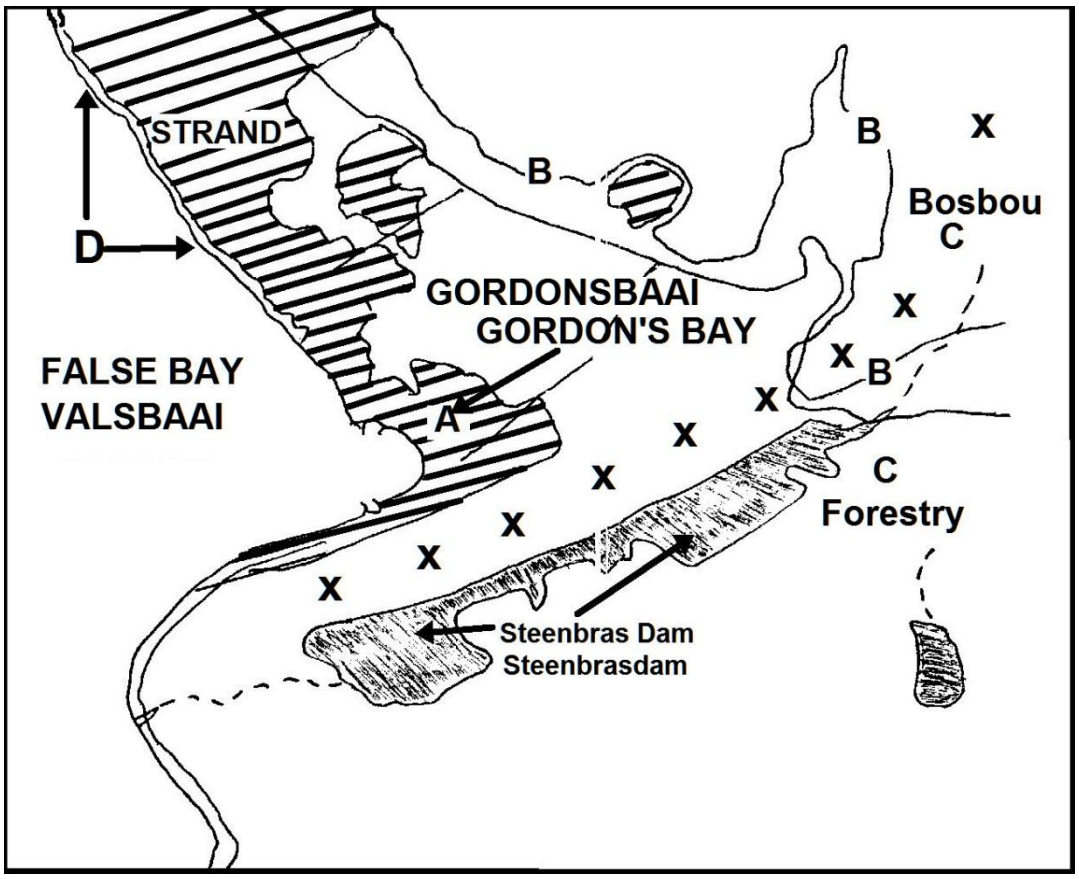
(5)

TOTAL SECTION B: 20

SECTION C

QUESTION 3: MAP INTERPRETATION AND ANALYSIS

3.1 The sketch map below represents the area covered by the topographical map. Study the topographical map and then indicate the features, referred to in 3.1.1 – 3.1.5 as accurately as possible on the sketch map.



Reference		**Verwysing**
River	- - - - - - - -	**Rivier**
Roads	_____	**Paaie**
Railway		**Spoorweg**
Built-up areas		**Beboude gebiede**

3.1.1 What is the name of the town marked **A** on the map?

Gordon's Bay ✓ (1)

3.1.2 Use the letter **B** to indicate the railway line linking Elgin with Somerset West.

On sketch B ✓ (1)

3.1.3 What primary activity is situated at C?

Forestry ✓ (1)

3.1.4 Use (XXXX) to indicate the Hottenstots Holland Mountains.

On sketch X ✓ (1)

3.1.5 Use the letter D to indicate where constructive waves would be found.

On sketch D ✓ (1)

3.2 Rainfall over the mapped area is seasonal and at times unreliable. Give TWO pieces of evidence, from the map, of measures farmers use to overcome the problem of water shortage during times of low rainfall.

Furrows ✓✓
Wind pumps ✓✓
Canals ✓✓
Dams ✓✓

(Any 2 x 2) (4)

3.3 Give a reason for the winding (bending, meandering) course of the N2 to the north-east of Gordon's Bay on the topographical map.

Hilly ✓✓
Mountainous ✓✓
Rugged landscape ✓✓
Sir Lowry's Pass ✓✓

(Any 1 x 2) (2)

3.4 Name the predominant type of agriculture practised along the banks of the Kogelberg Dam (blocks M14 and M15).

Orchards and vineyards ✓✓
Citrus farming ✓✓

(Any 1 x 2) (2)

3.5 Give a reason for the cultivation of rows of trees on the farms in blocks M14 and M15.

Act as a wind breaker ✓✓
Prevent soil erosion ✓✓
Aesthetic reasons / beautification ✓✓

(Any 1 x 2) (2)

3.6 The industrial area of Somerset West (block F6) has an ideal (very good) location. Give and explain THREE factors that influence its location.

- Good transport network (road/rail). ✓✓
- Flat land for expansion. ✓✓
- Cheaper land away from city centre. ✓✓
- Away from built-up area – less threat of pollution. ✓✓
- Water supply from the Steenbras Dam. ✓✓
- Good labour supply from the surrounding residential areas. ✓✓

(Any 3 x 2) (6)

3.7 Identify the cultural (man-made) features labelled **P**, **Q**, **R** and **S** on the orthophoto map. Choose from the list below. Use the topographical map as an aid to determine your answers.

P = Shopping Centre ✓✓
Q = School ✓✓
R = Factory ✓✓
S = Reservoir ✓✓

(4 x 2) (8)

3.8 Identify ONE physical factor that resulted in the area becoming a popular holiday destination.

Sea / Beaches ✓✓
Mountain ✓✓

(Any 1 x 2) (2)

3.9 Somerset West is an important tourist destination. Using map evidence, list any THREE recreational opportunities that the town offers to tourists.

Golf course ✓✓
Recreational grounds ✓✓
Hiking trails ✓✓
Beach / Macassar Resort / Picnicking ✓✓
Wine Estates ✓✓
Caravan Park ✓✓
Nature Reserve ✓✓
Fishing ✓✓
(Any Reasonable answer.)

(Any 3 x 2) (6)

3.10 In which province of South Africa is Somerset West situated?

Western Cape ✓

(1 x 1) (1)

3.11 Which major city is situated nearest (closest) to Somerset West?

Cape Town ✓✓

(1 x 2) (2)

TOTAL SECTION C: 40

SECTION D

QUESTION 4: GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

4.1 Differentiate between spatial and attribute data.

Spatial: Data that is linked to a specific location. ✓✓

Attribute: Data that expresses a number of qualities and characteristics of spatial data. ✓✓
(Concept)

(2 x 2) (4)

4.2 Provide a real example of the following from the topographical map blocks A8, L9 and L10.

Point:
Spotheights: **.**1015 ✓✓ **.**1090 ✓✓ **.**1075 ✓✓ **.**188 ✓✓ (Any 1)

Line:
Track and hiking trail ✓✓
Row of trees (windbreak) ✓✓
Other road/Secondary road ✓✓
Non-perennial rivers ✓✓ (Any 1)

Polygon (Area):
Buildings ✓✓
Cultivated land ✓✓
Orchards and vineyards ✓✓
Reservoir ✓✓
School ✓✓
Dams ✓✓ (Any 1)

(3 x 2) (6)

4.3 Differentiate between vector and raster data.

Vector: Uses points, lines and areas inside a polygon to define data stored in a computer. ✓✓

Raster: Each area is divided into rectangular grid cells and each rectangular cell contains an attribute value and its location coordinates. ✓✓
(Concept)

(2 x 2) (4)

4.4 What is a Geographic Information System (GIS)?

GIS is a computer-based technology and method for collecting, analysing, managing, modelling and presenting geographical data for a wide range of users. ✓✓
(Concept)

(1 x 2) (2)

4.5 Name any TWO components of a GIS.

People / users ✓✓
Software / computer programmes ✓✓
Data / information / maps / photos ✓✓
Applications ✓✓
Hardware / computer ✓✓
Procedure ✓✓

(Any 2 x 2) (4)

TOTAL SECTION D: 20

GRAND TOTAL: 100