Province of the
EASTERN CAPE
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 11

NOVEMBER 2011

GEOGRAPHY P2 MEMORANDUM

MARKS: 100

		MARKS	MOD
Q1	20		
Q2	20		
Q3	40		
Q4	20		

TOTAL MARKS	MOD
100	100

This memorandum paper consists of 9 pages.

SECTION A

QUESTION 1: MULTIPLE-CHOICE QUESTIONS

The following statements are based on the 1:50 000 topographical map 3424 BB HUMANSDORP and the orthophoto map 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 contour interval on the topographical map is …*

A *20 m*
B *50 m*
C *5 m*
D *2 m*

A

1.2 *The reference number of the topographic map directly north west of the map 3424 BB Humansdorp is ...*

A *3424 BA.*
B *3324 DC.*
C *3424 BC.*
D *3324 DD.*

B

1.3 *The geomorphological feature found along the line 3 – 4 on the orthophoto map is a ...*

A *spur.*
B *cliff.*
C *waterfall.*
D *valley.*

D

1.4 *The approximate altitude of the cemetery at 9 on the orthophoto map is …*

A *128 m.*
B *120 m.*
C *132 m.*
D *110 m.*

A

1.5 *The functional zone marked 10 on the orthophoto map indicates ...*

A *a residential zone.*
B *a zone of manufacturing industries.*
C *a cemetery.*
D *a high income residential area.*

B

1.6 *Constructive waves found at block F10 are …*

A *strong back wash.*
B *weak swash.*
C *plunging breakers.*
D *spilling breakers.*

D

1.7 *What is the recreational facility found at 34°02'20''S and 24°55'10''E on the topographical map?*

A *Caravan Park*
B *Model aircraft club*
C *Golf course*
D *School*

C

1.8 *The exact straight line distance between point 13 and 10 on the orthophoto map is …*

A *890 m.*
B *17 km.*
C *1,78 km.*
D *1780 km.*

C

1.9 *The scale of the topographical map (1:50 000) is … than that of the orthophoto map (1:10 000).*

A *5 times smaller*
B *5 times larger*
C *40 times smaller*
D *40 times larger*

A

1.10 *The contour interval of the orthophoto map is …*

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

A

(10 x 2) (20)

TOTAL SECTION A: 20

SECTION B

QUESTION 2: MAPWORK TECHNIQUES AND CALCULATIONS

2.1 A fishing vessel hits the coastal rocks at Seekoeipunt (block E11) and a rescue boat is launched from Q (block F10) on the topographical map.

2.1.1 What is the true bearing from Q to Seekoeipunt (block E11) where the stricken vessel is found?

True Bearing = 53° [52° − 54°] ✓✓ (2)

2.1.2 The sea rescue boat travelled at 60 km / hour. How long did it take to reach the fishing vessel from Q to Seekoeipunt (block E11)?

Time = $\frac{Distance}{Speed}$

DISTANCE: $\frac{5{,}0 \text{ cm x } 50\,000 \text{ cm}}{100\,000 \text{ cm}}$

2,5 km ✓

$\frac{2{,}5 \text{ km } ✓}{60 \text{ km/h}}$

0,0416 km x 60 ✓

= 2,49 or 2'30" / 2 min 30 sec ✓✓ (5)

2.2 Calculate the magnetic bearing from P to Q for the year 2011.

Difference in years = 2011 – 2001
= 10 years ✓

Mean annual change until 2011… = 10 x 9' W
= 90' W (1° 30' W) ✓

MD for 2011 = 25° 29'
= $\frac{+✓1° 30'}{26° 59' \text{ W } ✓}$

Magnetic bearing = TB + MD

= 200° + 26° 59' ✓ [Range 202° − 204°]
= 226° 59' W of TN ✓ [Range 224° 59' − 228° 59'] (6)

2.3 *Calculate the average gradient from the trigonometrical Δ station 292 (block D9) to Q (block F10) on the topographical map. Use the formula below.*

Gradient = $\frac{VI}{HE}$ $\frac{(Vertical\ Interval)}{(Horizontal\ Equivalent)}$

VI = 47,3 – 0 m = 47,3 m ✓

HE = 7,9 cm ✓ x 0,5 = 3,95 km ✓ (7,8 – 8,0)

Gradient = VI / HE

= 47,3 / 3 950 m ✓

= 1: 83,5 (Range 1: 82.4 – 1: 84,56) ✓ (5)

2.4 *What manmade structures, blocks the view between the trigonometrical Δ station 292 (block D9) and Q (block F10) on the topographical map?*

Built up area
Buildings ✓✓ (2)

TOTAL SECTION B: 20

SECTION C

QUESTION 3: MAP INTERPRETATION AND ANALYSIS

3.1 *The Indian Ocean plays a major role in determining the climate of Jeffrey's Bay.*

3.1.1 *Explain TWO ways in which the Indian Ocean influences the climate of the area.*

Advection of warm moist air / Humid ✓✓
Moderate effect of ocean. ✓✓
Temperature range small due to warm ocean. ✓✓
Ocean currents – Mozambique warm T °C ✓✓ (Any 2) (2 x 2) (4)

3.1.2 *Does the mapped area receive seasonal rainfall or rainfall throughout the year?* (1)

Seasonal ✓

(1 x 1)

3.1.3 *Give ONE reason for your answer.*

Many dams ✓✓
Non-perennial rivers ✓✓ (Any 1) (1 x 2) (2)

3.2 3.2.1 *Farming in the block E8 on the topographical map consists of intensive production (developed farms). Provide TWO pieces of evidence to support this statement.*

It is commercial because there is a dam nearby. ✓✓
There is good water supply. ✓✓
The farm is well organised. ✓✓
There is a road and a railway line nearby. ✓✓
Farm has a name. ✓✓
There are farm boundaries. ✓✓(Any reasonable answer) (2 x 2) (4)

3.2.2 *List TWO factors favouring farming in the area.*

On a flood plain – fertile soil ✓✓
Flat land ✓✓
Close to rivers for irrigation
Numerous rivers and dams ✓✓
Good transport network(road / rail) ✓✓
Market ✓✓ **(**Any 2) (2 x 2) (4)

3.3 3.3.1 *Identify the physical feature at X on the topographical map.*

Marsh / Vlei / Wetland ✓✓ (1 x 2) (2)

3.3.2 *Explain the importance of the above feature for the environment.*

Purifies water in nature ✓✓
Reduces flooding ✓✓
Promotes wild (bird) life. ✓✓ **(**Any 2) (2 x 2) (4)

3.4 *Explain how longshore drift / beach migration would occur in the region of Q (block F10) with a prevailing Southwest wind.*

Swell is perpendicular to the SW winds – waves approach shore ✓
and swash moves up beach at oblique angle ✓
Water returns at 90° to the coast ✓
Sand moves down / up the beach in NE direction ✓ (4 x 1) (4)

3.5 *Identify the geomorphological feature across the Seekoeiriviermond in block F10 on the topographical map.*

Sandbar ✓✓ (1 x 2) (2)

3.6 *Name TWO factors that will affect the size of the waves in the coastal area shown on the topographical map.*

The fetch of the wave – distance that the wind blows over the surface ✓✓
Length and time the wind has been blow ✓✓
The strength of the wind ✓✓
The direction of the wind ✓✓ **(**Any 2) (2 x 2) (4)

3.7 The Humansdorp / Jeffreys Bay areas have been intensely used for tourism / ecotourism. Justify this statement by giving THREE features from the map.

1. Caravan park (A11) ✓✓
2. Waterways / Marina Martinique (E11) ✓✓
3. Golf course (C11) ✓✓
Recreation areas (D11) ✓✓
Nature reserves – Kabeljous (A12) ✓✓
Holiday resorts – Kromriviermond (I6) ✓✓

(Any 3 other reasonable answers.)
(3 x 2) (6)

3.8 Refer to the topographical map and list THREE services that Humansdorp provide for its inhabitants.

Post office ✓
Police station ✓
Schools ✓
Sewage works ✓
Station ✓
Hospital ✓ (Any 3) (3 x 1) (3)

TOTAL SECTION C: 40

SECTION D

QUESTION 4: GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

4.1 4.1.1 *Explain what a Geographical Information Systems (GIS) is.*

Computer based technology and method for collecting, analysing, managing, modelling and presenting geographical data for a wide range of uses. ✓✓ (Concept) (1 x 2) (2)

4.1.2 *Name any TWO components of GIS.*

People / users ✓✓
Software / computer programmes ✓✓
Data / information / maps / photos ✓✓
Applications ✓✓
Hardware / computer ✓✓
Procedure ✓✓ (Any 2) (2 x 2) (4)

4.2 *Classify the following data as vector or raster.*

4.2.1 *An image:*

Raster ✓✓ (2)

4.2.2 *Polygons:*

Vector ✓✓ (2)

4.3 *How does data acquisition differ from data input?*

4.3.1 *Data acquisition:*

All data collected – paper maps, satellite images, aerial photographs, field data, text information ✓✓ (2)

4.3.2 *Data input:*

Putting data into computer. ✓✓ (2)

4.4 *Explain any THREE examples or ways that GIS can be used to improve or influence everyday life for South Africans.*

Improving flood defences ✓✓
Urban planning ✓✓
Rural planning ✓✓
Improving availability of education ✓✓
Finding minerals for mining ✓✓
Preventing crime ✓✓ (Any 3 other relevant examples) (3 x 2) (6)

TOTAL SECTION D: 20

GRAND TOTAL: 100