education

Department:
Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

GEOGRAPHY P2

MEMORANDUM

NOVEMBER 2008

MARKS: 100

This memorandum consists of 9 pages.

QUESTION 1

The following questions are based on the 1:50 000 topographical map, 3227DD, CAMBRIDGE, as well as the orthophoto map of part of the same area. Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A – D) in the block next to each question (1.1 – 1.10).

1.1 The topographical map reference number represents …

A 32°N27ºW.
B 32ºS27ºE.
C 32ºW27ºN.
D 32ºE27ºS. **B**

1.2 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**

1.3 The contour interval of the orthophoto map is …

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

1.4 The map projection used on the topographical map is …

A Mercator.
B Lambert.
C Gauss Conform.
D Universal transverse. **C**

1.5 The orthophoto map (3227 DD 24) depicts the … part of the topographical map.

A northern
B eastern
C western
D southern **D**

1.6 The exact distance between point **1** and **2** on the topographical map is …

A 21,5 km.
B 215 km.
C 2 150 km.
D 2,15 km. **D**

1.7 The stream in block J6 is in the ... course.

A upper
B lower
C middle
D main **B**

1.8 The coastline in block J7 on the topographical map is mainly ...

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

1.9 The feature marked **3** on the orthophoto map is a/an ...

A excavation.
B embankment.
C cemetery.
D holiday resort. **A**

1.10 The location (coordinates) of the trigonometrical station number 512 in block H5 is ...

A 27°55´13"E 32°56´8"S / 27°55,2'E 32°56,2'S.
B 32°56´8"S 27°55´13"E / 32°56,2'S 27°55,2'E.
C 32°56´8"E 27°55´13"S / 32°56,2'E 27°55,2'S.
D 27°55´13"S 32°56´8"E / 27°55,2'S 32°56,2'E. **B**

(10 x 2) [20]

QUESTION 2

2.1 Calculate the area of the feature marked **4** (in m²) on the topographical map. Show ALL the calculations.

Area = L x B ✓

L = $\frac{1\text{ cm} \checkmark \times 50\,000}{100}$
= 500 m

OR

Area = L x B ✓

L = $\frac{10\text{ mm} \checkmark \times 50\,000}{1\,000}$
= 500 m

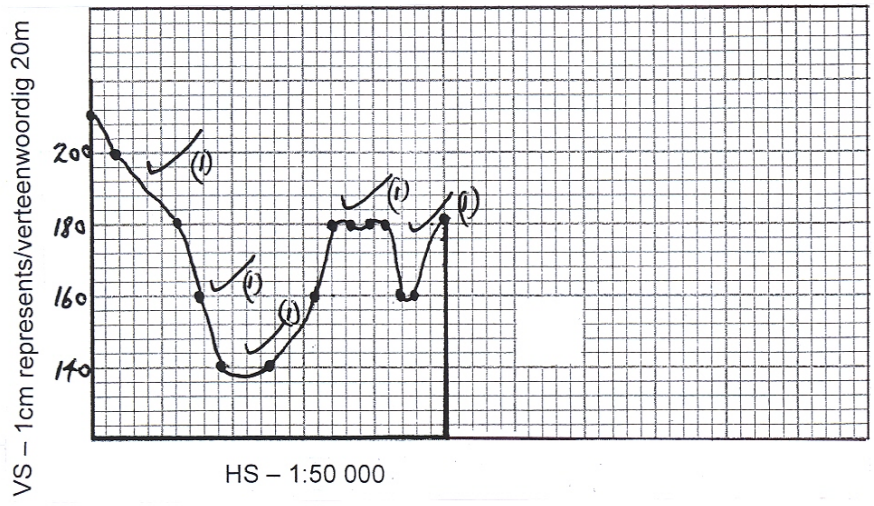
B = $\frac{0{,}3\text{ cm} \checkmark \times 50\,000}{100}$
= 150 m

B = $\frac{3\text{ mm} \checkmark \times 50\,000}{1\,000}$
= 150 m

Area = 500 m x 150 m
= 75 000 m² ✓

Range: 45 000 - 110 000 (4)

2.2 Draw an exact cross-section from trigonometrical beacon number 513 in block H1 to spot height 182 in block G3. Use a vertical scale of 1 cm to represent 20 m.



(5)

2.3 Calculate the vertical exaggeration of the cross-section you have drawn in QUESTION 2.2 above. Show ALL the calculations.

VE = $\frac{VS}{HS}$ ✓

VS = 1 cm represents 20 m

= $\frac{1}{2\,000}$ ✓

HS = 1 cm :500 m

= $\frac{1}{50\,000}$ ✓

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

= $\frac{\frac{1}{2\,000}}{\frac{1}{50\,000}}$

= $\frac{1}{2\,000} \times \frac{50\,000}{1}$

= *25 times* ✓

(4)

2.4 Calculate the gradient between **5** on the topographical map and spot height 148 in block H2. Show ALL the calculations.

*Gradient = $\frac{VI}{HE}$ **OR** $\frac{Height}{Distance}$*

VI = 180 m - 148 m
= 32 m ✓

HE = 2,3 cm ✓ x 0,5 km
= 1,15 km
= 1 150 m

OR

HE = $\frac{23\ mm\ ✓ \times 50\ 000}{1\ 000}$
= 1 150m

Gradient = $\frac{32\ m}{1\ 150\ m}$ ✓

= $\frac{1}{35,94}$

= 1 : 35,94 / 1 in 35,94 ✓

(5)

Range: 1:34,38 - 1:37,50

2.5 Account for the location of cultivated land on this slope between **5** and spot height 148.

Flat land / Gentle slope / contours far apart (2)
Close to water source / irrigation possible (2)
Fertile soil (2)
North facing / warmer slope (2)
[ANY ONE] (1 x 2) (2)

[20]

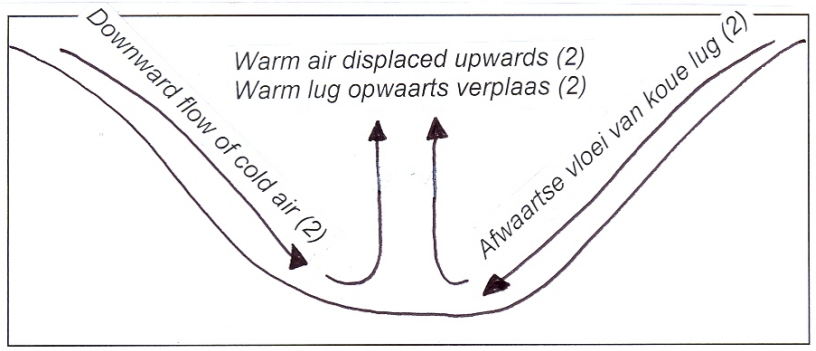
QUESTION 3

3.1 Refer to the orthophoto map.

3.1.1 Identify the landform numbered **6** on the orthophoto map.

Valley (2) (1 x 2) (2)

3.1.2 Use a labelled diagram to show the flow of air at night in the landform that you have identified in QUESTION 3.1.1.



[If air flow indicated but not labelled give single marks]
[Accept plan view]
(2 x 2) (4)

3.1.3 Name the type of wind/air flow you drew in QUESTION 3.1.2 above.

Katabatic wind (2)
Downslope wind (2)
Gravity wind (2)
Mountain breeze (2)
[ANY ONE] (1 x 2) (2)

3.2 Refer to blocks H7 and H8 on the topographical map.

3.2.1 Identify the stream pattern in blocks H7 and H8.

Dendritic (2) (1 x 2) (2)

3.2.2 What is the order of the stream at the point numbered **7** in block H8?

Third order (2) (1 x 2) (2)

3.3 Identify ONE recreational activity in block J8 on the topographical map that would keep tourists visiting the town of Cambridge.

Hiking(2)
Camping / Caravan park (2)
Fishing / angling (2)
Swimming (2)
Sailing (2)
Snorkeling / diving (2)
Skiing (2)
Surfing (2) (1 x 2) (2)
[ANY ONE]

3.4 Compare the street pattern at Dorchester Heights in blocks H3/4 and I3/4 to that of Vincent in block J4 on the topographical map in terms of the following:

	DORCHESTER HEIGHTS	**VINCENT**
Street pattern	*(Planned) irregular (2)* *Free pattern (2)* *[ANY ONE]*	*Gridiron(2)* *Block (2)* *Rectangular (2)* *[ANY ONE]*
Advantage	*Free flow of traffic (2)* *Avoid steep roads (2)* *Not boring (2)* *Increase land value (2)* *Aestethic (2)* *Less accidents (2)* *Cost effective (2)* *Easy crime control (2)* *[ANY ONE]*	*Easy to lay out plots (2)* *Easy to subdivide (2)* *Easy to find your way (2)* *Accessible (2)* *Easily modified (2)* *[ANY ONE]*
Disadvantage	*Get lost easily (2)* *No focal point (2)* *Difficult laying out plots (2)* *Difficulty to subdivide (2)* *Limited access (2)* *[ANY ONE]*	*Wastes time and petrol (2)* *Traffic congestion (2)* *Easy to hijack motorists (2)* *Boring / monotonous (2)* *Steep roads (2)* *More accidents (2)* *Sressful / road rage (2)* *[ANY ONE]*

(6 x 2) (12)

3.5 Name the primary and secondary economic activity found in block I3 on the topographical map.

Primary: *crop farming / cultivation (2)*
forestry / woodlands (2)
fishing (2)
[ANY ONE]

Secondary: *factories / industries / manufacturing (2)* (2 x 2) (4)

3.6 Refer to the orthophoto map to answer the questions on Nompumelelo which is an informal settlement near CAMBRIDGE.

3.6.1 Give ONE characteristic of an informal settlement.

A settlement that has not been planned (2)
A settlement built of scrap material (2)
A settlement occupied mostly by low-income and unemployed people (2)
Area not cared for (2)
No / few services (or example) (2)
No infrastructure (2)
High housing density (2)
Small buildings / plots (2)
Informal economic activities (2)
[ANY ONE. Accept reasonable answer] (1 x 2) (2)

3.6.2 What challenges are posed to the local government by this type of settlement?

Demand for running water (2)
Demand for sanitation (2)
Demand for infrastructure (2)
Demand for houses (2)
Demand for employment opportunities (2)
Probing crime (2)
[ANY TWO. Accept reasonable answer] (2 x 2) (4)

3.7 Indicate whether Bonza Bay in block J7 on the topographical map is a high-income or low-income residential area. Give TWO reasons for your answer.

High-income residential area (2)

REASONS: Next to coast / ocean view (2)
Next to nature reserve (view) (2)
Next to river (view) (2)
Far away from the industries and CBD (2)
Near the recreational facilities (2)
Larger houses (2) (3 x 2) (6)
Larger plots / low density (2)
[ANY TWO REASONS]

[42]

QUESTION 4

4.1 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 (2)
[CONCEPT] (1 x 2) (2)

4.2 Differentiate between *vector data* and *raster data*.

Vector: Real world is shown by means of points, lines and polygons (2)
Raster: Real world features shown by means of pixels (2)
[CONCEPT] (2 x 2) (4)

4.3 Classify the following data as vector or raster.

4.3.1	Image	*Raster (2)*	(1 x 2) (2)
4.3.2	Polygons	*Vector (2)*	(1 x 2) (2)

4.4 Name any TWO components of GIS.

People / users (2)
Software / computer programmes (2)
Data / information / maps / photos (2)
Applications (2)
Hardware / computer (2)
Procedure (2) (2 x 2) (4)
[ANY TWO]

4.5 Your friend lives in Nompumelelo and he / she woulld like to open a business in the area. How could you make use of GIS in order to ensure the success of his business?

Find information about other existing businesses (competition) (2)
Find the total population in order to analyse the potential market (2)
Find financial statistics that show growth (2)
Determine income of people in order to establish whether business will be feasible (2)
Determine demand for business (2)
Work out routes for deliveries (2) (2 x 2) (4)
Find ideal location for business (2)
Determine crime hotspot areas (2)
[ANY TWO. Any reasonable answers]

[18]

TOTAL: 100