NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2008

GEOGRAPHY: PAPER II

MARKING GUIDELINES

Time: 1½ hours 100 marks

These marking guidelines are prepared for use by examiners and sub-examiners, all of whom are required to attend a standardisation meeting to ensure that the guidelines are consistently interpreted and applied in the marking of candidates' scripts.

The IEB will not enter into any discussions or correspondence about any marking guidelines. It is acknowledged that there may be different views about some matters of emphasis or detail in the guidelines. It is also recognised that, without the benefit of attendance at a standardisation meeting, there may be different interpretations of the application of the marking guidelines.

Glossary

WORD	MEANING
Calculate	To work out.
Classify	To divide into groups or types.
Determine	To arrive at an answer, to make a decision.
Explain	To make clear; give reasons; give causes.
List	To present a list of names, facts, aspects or items.
Outline	Give the main features or general principles of a subject.
Predict	To say what you think will happen, to say in advance.
State	To present information or details plainly, without discussion.
Substantiate	To prove the truth of.

Translation of words

English to Afrikaans

Lookout Hut	Uitkykhut
Lookout Tower	Uitkyktoring
Birthplace	Geboorteplek
Firebreak	Voorbrand
Waterfall	Waterval
Lake	Meer
Town Hall	Stadsaal
Sewerage Works	Rioolwerke
Hill	Heuwel/ Koppie
Caravan Park	Woonwapark
Farm	Plaas

Position of Greytown in South Africa

Voortrekkers laid out this picturesque country town at the base of Greytown Hill in the 1850s using the neat grid system first employed at nearby Pietermaritzburg in the KwaZulu-Natal Midlands. Now it is the centre of a large farming area with important timber plantations.

[Adapted from: <pmb-midlands.kzn.org.za>]

1. *Map projections and atlas use*

Tick the correct answer.

1.1 The map projection used to draw the Greytown 1:50 000 topographical map is ...

Lambert	
Mercator	
Gauss Conform (Conformal)	✓
Peter	

(2)

1.2 The central meridian for this projection for the Greytown 1:50 000 topographical map is ...

30° S	
31° E	✓
19° E	
19° S	

(2)

1.3 The ocean marked A on the outline map of South Africa above (page 3) is the ...

Indian	
Agulhas	
Benguela	
Atlantic	✓

(2)

1.4 The important harbour at B on the map (page 3) is ...

Richards Bay	
Cape Town	
Saldanha Bay	✓
Coega (Ngqura)	

(2)

1.5 The important mining product exported through the harbour at B (map page 3) is ...

Diamonds	
Gold	
Iron ore	✓
Coal	

(2)

1.6 The province marked C on the map (page 3) is ...

Free State	
Mpumalanga	✓
Limpopo	
Gauteng	

(2)

12 marks

Q1 sub-total

2. *Map Skills*

Study the 1:50 000 topographical map (2930BA Greytown) to answer the following questions. Tick the correct box.

2.1 The highest point on the topographic map extract is 1880 metres above sea level (F1).

True	
False	✓

(1)

2.2 The road distance from central Greytown (F4) to Mooi River is 63 kilometres.

True	
False	✓

(1)

2.3 The drainage pattern in D1 is dendritic.

True	✓
False	

(1)

2.4 It is evident from the surrounding contours that Merthley Lake (D2, D3, E2, E3) is a shallow lake.

True	✓
False	

(1)

2.5 De Rust (G1) is an isolated rural settlement.

True	✓
False	

(1)

2.6 The latitude of the lookout hut (F2) is ...

29° 02' 13" E	
29° 02' 13" S	
29° 01' 47" E	
29° 01' 47" S	✓

(2)

2.7 The longitude of the lookout hut (F2) is ...

30° 35' 18" S	
30° 35' 42" E	
30° 35' 18" E	✓
30° 35' 42" S	

(2)

2.8 The dam wall of Merthley Lake (D2, D3, E2, E3) is located in ...

D2	
D3	✓
E2	
E3	

(2)

2.9 The cemetery (F4, G4) lies in which urban land-use zone?

Residential	
Zone of transition	
Industrial	
Rural-urban fringe	✓

(2)

13 marks

Q2 sub-total

3. *Map Calculations: Area, Gradient, Bearing, Speed*

3.1 **Determine** the **approximate** area (m^2) of the large unnamed dam in E5, E6, F5, F6.

Average width of dam: **400 – 600** m (1)

Average length of dam: **1 450 – 1550** m (1)

Approximate area of dam: **580 000 – 930 000** m^2 (1)

Working

3.2 Emma and Patricia are doing an adventure race and have to cycle from trigonometric station 56 on Kelly Hill (C1) along the path under the powerline to the point numbered 1 (C2).

3.2.1 **State** the length of their ride (assuming they ride in a straight line):

1 400 – 1 500 m (1)

3.2.2 **State** the difference in altitude between their starting and finishing points:

200 – 220 m (1)

3.2.3 **Determine** the average gradient of their ride.

1:6 – 1:7,5 (2)

Working + 1 mark for method if answer is wrong.

3.2.4 If their ride takes 20 minutes, **determine** their average speed in kilometres per hour.

4 – 5 km/h (2)

Working + 1 mark for method if answer is wrong.

3.2.5 **Determine** the true bearing of their ride.

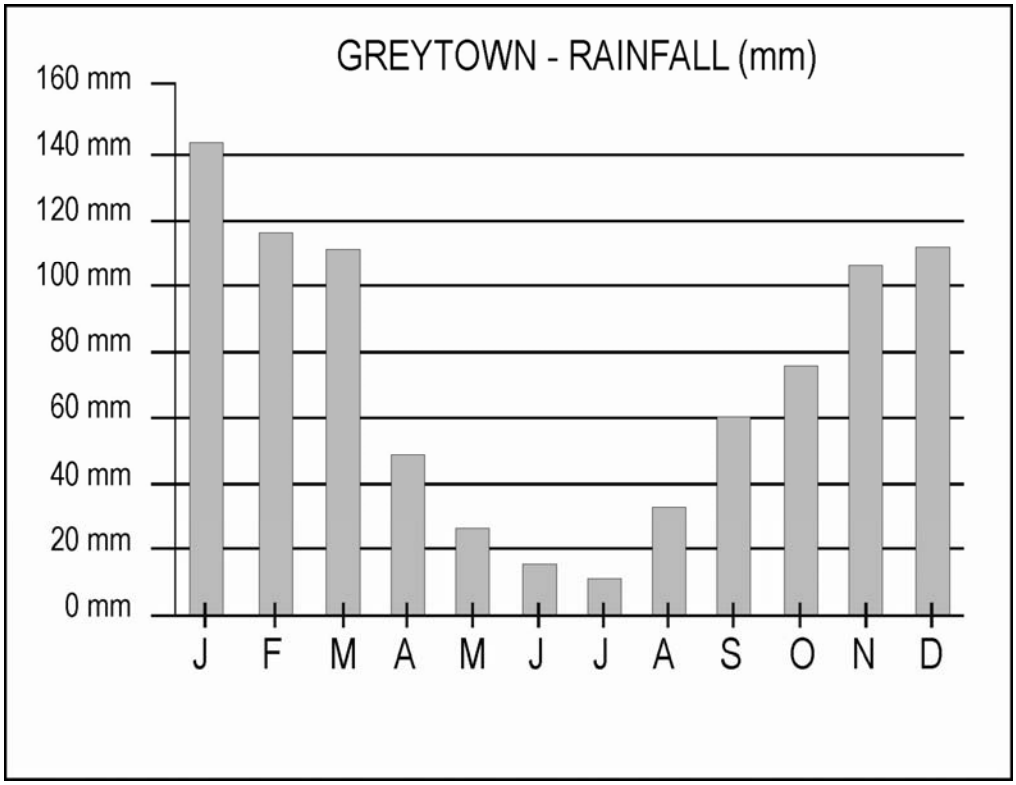
145° – 150° = 2
140° – 144°
151° – 155° = 1 (2)

11 marks

Q3 sub-total

4. *Map Interpretation: Water supply (People and their needs)*

The graph below shows Greytown's average monthly rainfall figures.



4.1 Study the graph and **calculate** Greytown's average **annual** rainfall.

800 – 900 mm OR 67 – 75 mm (2)

Calculation

4.2 Farmers in E6 cultivate grazing grass in winter for their cattle. Using the data from the graph, give TWO reasons why irrigation is necessary on these farms.

4.2.1 **Lowest rainfall is in June and July with about 10 – 15 mm each (winter).** (2)

4.2.2 **Grazing grass needs water to grow. Hence the need for irrigation.** (2)

4.3 Merthley Lake (D2, D3, E2, E3) is the only source of water for the municipal area of Greytown. Sometimes water restrictions have to be imposed on the residents.

State TWO reasons (using evidence from the map) why Merthley Lake alone cannot adequately meet the water needs of the people of Greytown.

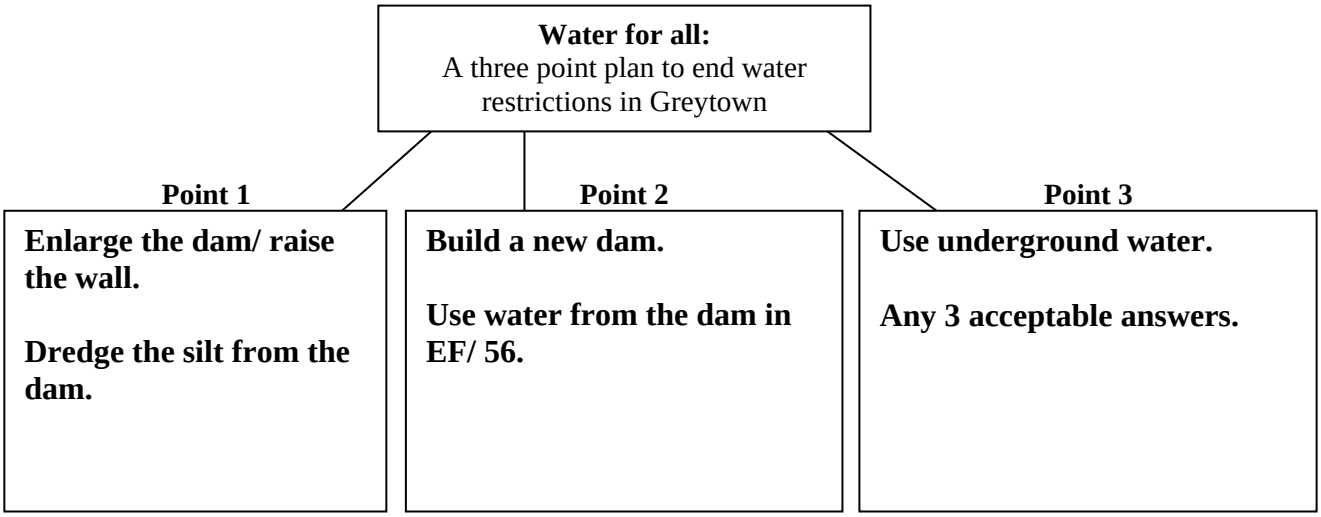
4.3.1 **Too small, water level too low/ shallow. Large surface area/ evaporation**

Non perennial tributaries. Small catchment area. (2)

4.3.2 **Droughts, dry periods. Increase in population. Forests use water.**

Forests use water. Any two acceptable answers. (2)

4.4 As a water consultant, you have been asked to advise the Greytown Municipality on the sustainable use of their water supply. Using the mind map below, **outline** a three-point plan that would make water restrictions no longer necessary. Your plan must use information from the map and the orthophoto.



1. Identify the aspect = 1
2. Relate it to the environment of the map = 1
3. Justify the solution = 1

(3 x 3 = 9)

19 marks

Q4 sub-total

5. *Orthophoto skills:* *The topographical map must be studied together with the orthophoto map to answer these questions.*

5.1 Compared with the topographical map, the orthophoto map is ... Tick the correct box.

Five times larger	✓
Two times larger	
The same scale	
Two times smaller	
Five times smaller	

(2)

5.2 **State** the land use at the following places on the orthophoto map.

Z **School/ Education** (2)

Y **Residential** (2)

X **Cemetery** (2)

5.3 The CBD (Central Business District) of Greytown is found at the outlined area marked W on the orthophoto map. Give TWO pieces of evidence to substantiate this statement.

5.3.1 **Tallest/ largest buildings. Most intensive land use**

Centre of town (2)

5.3.2 **Most vehicles**

Focus of roads

Typical CBD buildings (2)

12 marks

Q5 sub-total

6. *Map Interpretation: Landforms and Transport*

6.1 Study the arterial route numbered 622 on the topographic map from where it joins the map in A6 to its junction with the R74 in E5.

6.1.1 Along what natural feature does this road travel for most of the route?

Butte	
Homoclinal ridge	
Watershed	✓
Tor	

(1)

6.1.2 **Explain** TWO reasons why the civil engineers chose this feature on which to build the road (622).

(a) **Crosses no rivers therefore no flooding therefore no bridges.** (2)

(b) **Gentlest gradient/ flattest land therefore easiest to build on.** (2)

5 marks

Q6 sub-total

7. *Map Interpretation: Settlement*

7.1 **Classify** the **type** of settlement located at 2 (G2 on the topographic map).

(1) (1)

Nucleated rural **Grouped = 1**

Clustered = 1 **Rural Hamlet = 1** (2)

7.2 **Predict** THREE possible effects that HIV/ AIDS could have on the settlement at 2 (G2).

7.2.1 **Less labour** **Rural Urban Migration**

Famine (2)

7.2.2 **Poverty**

Fewer children at school (2)

7.2.3 **Orphans**

Any THREE acceptable answers (2)

7.3 The Greytown Municpality has determined that there is a need for a large new high-income residential area. As a town planner you have been commissioned to recommend the best site. There are three possible sites which have been numbered 3 (G4), 4 (G5) and 5 (F5) on the topographical map.

Predict the best site for this new development and write a report to the municipality in which you **substantiate** TWO reasons for selecting that site and ONE reason why each of the other two sites are not suitable.

I have chosen site **5** because …

7.3.1 **Lake frontage**

Close to CBD (2)

OR

I have chosen site **3** because …

7.3.1 **Good view** **Road = rail access**

Close to CBD **Close to hospital** **Close to river** (2)

7.3.2 **Forests**

Quiet/ peaceful, Good view (2)

Site **4** is **unsuitable** because …

Close to sewerage works

Close to railway

Close to other residential areas (2)

OR

Site **5** is **unsuitable** because …

No road access **No services**

Remote **Cold – South facing**

Too steep ∴ Expensive (2)

Site **3** is also **unsuitable** because …

Close to railway

Close to cemetery

(2)

7.4 You have decided to use a Geographic Information System (GIS) to help make your decision in Q7.3. **State** THREE GIS layers (themes) that you would select to help make your recommendation.

7.4.1 **Soils.** **Existing roads.** (2)

7.4.2 **Slopes.** **Geology.** (2)

7.4.3 **Existing buildings.** **Any acceptable theme.** (2)

Existing services. **Crime map.**

Traffic densities. **Aspect/ relief.**

Drainage. **Vegetation.**

22 marks

Q7 sub-total

8. *Fieldwork and Micro-climatology*

8.1 Peter and Lucas have studied the micro-climatology of the area covered by the topographic map for their Grade 12 Geography research assignment.

One result they found was that at midday the temperatures around the Town Hall (F4) were higher than those at the Golf Course (F5). They determined that the reason for this was that the Town Hall was in the town centre with tar and cement surfaces and artificial heat sources while the Golf Course consisted mainly of grass and trees in a natural area.

Study Block F3 on the topographical map and **list** TWO **other** micro-climate results and the explanations that they could have obtained from their fieldwork study of the area in block F3.

Result: **North facing slope warmer/ drier**

OR south facing slope cooler/ wetter (1)

Explanation: **Aspect** (2)

Result: **SE winds at night** (1)

Explanation: **Katabatic flow**

Rainfall higher on SE slope – relief rainfall

Radiation fog in valleys

Altitude – colder at top

Anabatic flow – day

MUST use F3 (2)

6 marks

Q8 sub-total

Total: 100 marks