



NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2012

GEOGRAPHY: PAPER II

EXAMINATION NUMBER

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Time: 1½ hours

100 marks

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

1. Write your examination number in the appropriate blocks provided above.
 2. This question paper consists of 15 pages. Please check that your question paper is complete.
 3. Read the questions carefully.
 4. Answer ALL the questions in the spaces provided on the question paper.
 5. Carefully study the 1:50 000 topographical map extract 2729DA MEMEL and an accompanying 1:10 000 aerial photograph extract 2729DA 17 MEMEL before answering the questions.
 6. The topographic map has grid lines with markings A to F and 1 to 7 that may be used to identify locations according to blocks.
 7. The topographical map and orthophoto map extracts and your completed Answer Book must be handed to the invigilator at the end of the examination. The maps and photos may be retained by the school for future use.
 8. On page 2 there is a glossary of words. This will help you understand what the words in **bold** in the questions are asking you to do. There is also an English-Afrikaans translation of some words appearing on the map.
 9. A magnifying glass and a calculator may be used.
 10. It is in your own interest to write legibly and to present your work neatly.
 11. You may use page 15 for rough work. No marks will be allocated to rough work.
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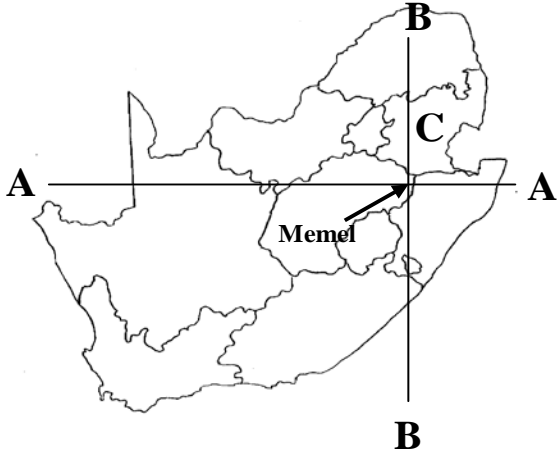
Glossary of terms

WORD	MEANING
Calculate	To work out the value of something using a mathematical method.
Comment	To give your opinion or make a statement about something.
Compare	To point out or show differences and similarities between two or more features/aspects.
Create	To produce or form something out of nothing; to design.
Describe	To say what something is like.
Design	To create a drawing to illustrate something.
Draw	To show by means of a sketch.
Explain	To describe something so that it can be understood.
Identify	To give the details or characteristics of something.
Justify	To support an answer by giving reason, argument or evidence.
Label	To name or give information on a diagram.
Outline	To give the main features or general principles of a subject.
Provide	To put forward or give.
State	To present information or details plainly, directly and simply, without discussion.
Suggest	To put forward ideas, a plan or reasons.

Translation of words**English to Afrikaans**

Clinic	Kliniek
Diggings	Opgrawings
Farm	Plaas
Furrow	Kanaal
Golf course	Gholfbaan
Hill	Koppie
Hippopotamus	Seekoei
Landing strip	Landingstrook
Lowlands	Laagte
Marsh, swamp or wetland	Vlei
Mountain	Berg
Pumpkin	Pampoen
River	Rivier
Road	Pad
Sewerage works	Rioolwerke
Silo	Silo
Stream or river	Spruit
Weir	Dwarsmuur/keerwal

Location map: Location of Memel in South Africa



Memel is the Prussian word meaning 'surrounded by water'. This is an accurate description for this town (founded in 1913) situated in the Drakensberg area of the north-eastern Free State. Memel is a central place which serves the surrounding farming community.

2 km north of Memel is the extensive Seekoeivlei Wetland, a RAMSAR site*, contained in the Seekoeivlei Nature Reserve. Some 220 oxbow lakes have been formed by the Klip River over centuries. The area is characterised by undulating grassland hills with marshes, dams and streams in the shallow valleys.

Average annual rainfall for the area is 500 – 800 mm while the summer average temperature is 24 °C and the winter temperatures range between 0 ° – 18 °C.

[Adapted from: <sabirding.co.za>]

*RAMSAR site – The convention on Wetlands of International Importance, especially as waterfowl habitats, is an international treaty for the conservation and sustainable utilisation of wetlands. It is named after the town Ramsar in Iran.

1. ***Atlas use, map and photograph reading and map projections***

1.1 Refer to the location map above, as well as the topographical map extract to answer the following questions. Tick the correct box.

1.1.1 The line of latitude marked A on the location map above is ...

27 ° 41' E	
27 ° 41' S	
29 ° 34' E	
29 ° 34' S	

(1)

1.1.2 The line of longitude marked B on the location map above is ...

27 ° 34' S	
27 ° 41' E	
29 ° 34' E	
29 ° 41' S	

(1)

- 1.1.3 The central meridian of the Gauss Conform Projection used for the topographical map extract 2927DA Memel is ...

18° E	
27° S	
29° E	
27° E	

(1)

- 1.1.4 The province labelled C on the location map (page 3) is ...

Free State	
Gauteng	
Kwa-Zulu Natal	
Mpumalanga	

(1)

- 1.1.5 The road distance (km) on the 1:50 000 topographic map extract from the junction (E4) of the R34 and R722 to Vrede is ...

6,7 km	
50 km	
56,7 km	
64,5 km	

(2)

- 1.2 Refer to the aerial photograph extract as well as the topographic map extract.

- 1.2.1 The time at which the aerial photograph was taken was approximately ...

06:00	
08:00	
12:00	
17:00	

(2)

- 1.2.2 A number of natural and constructed features have been labelled on the aerial photograph extract. **Identify** these features.

R _____

S _____

T _____

U _____

V _____

(10)

- 1.2.3 *Tone* refers to the relative brightness or colour of features on a photograph.

Compare and **explain** the tone of feature R with that of feature V.

Feature R _____

Feature V _____

(4)
[22]

Q1 sub-total

2. **Map skills and calculations: the natural environment**

Refer to the topographic map extract.

2.1 Photograph 1 is taken from point X (B7) looking towards Mhloshana (C7).

Photograph 1: View from point X looking towards Mhloshana

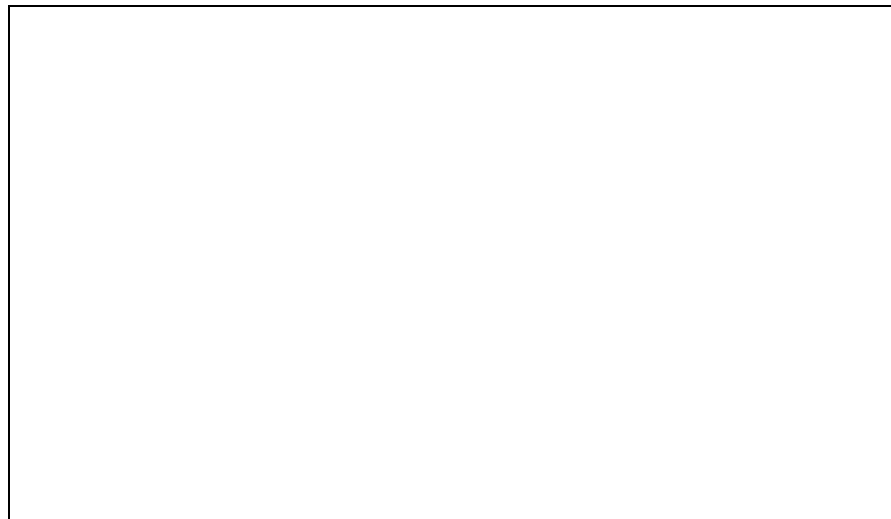


[Examiner's photograph]

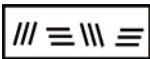
2.1.1 (a) **Draw** a labelled field sketch of Mhloshana in the box provided below.

Label the following:

- a gentle slope
- a rocky outcrop
- the spot height



(4)

(b) **Explain** the use of the symbol  shown on Mhloshana.

(2)

- 2.1.2 What type of farming takes place in the area shown in Photograph 1 (page 6)? **Justify** your answer.

Type of farming _____

Justification _____

(3)

- 2.1.3 **State** the direction from point X (B7) to Mhloshana (spot height 1852).

(2)

- 2.1.4 The true bearing from point X (B7) to the farm Glen Allen (C5) is approximately ...

45 °	
138 °	
220 °	
270 °	

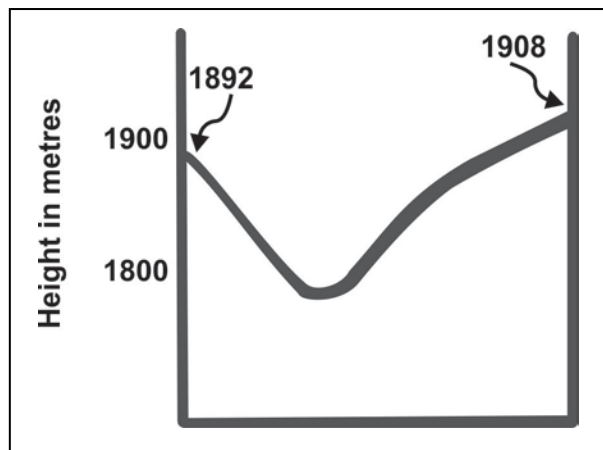
(2)

2.2 Microclimate

Refer to the topographic map extract.

Study the sketch cross-section below drawn of a valley from spot height 1892 (E6) to spot height 1908 (F7).

Sketch cross-section from spot height 1892 (E6) to spot height 1908 (F7)



[Note: This sketch cross-section has been enlarged and exaggerated.]

- 2.2.1 Fill in and **label** the following features on the sketch cross-section above:

- north-facing slope
- south-facing slope
- river
- footpaths or cattle tracks
- cultivated land

(5)

- 2.2.2 **Suggest** a reason why the cultivated land is located where it is on the sketch cross-section.

(2)

- 2.2.3 Grade 12 students recorded the following temperatures at midday at selected sample sites (numbered 1 to 3) on the 1:50 000 topographic map in the valley (Question 2.2).

18 °C	24 °C	27 °C
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Complete the table by writing the correct temperature below each site.

Site	Site 1	Site 2	Site 3
Temperature			

(3)

- 2.2.4 The students spent the night in the valley. They camped overnight at Site 1.

- (a) In which direction would smoke from their campfire drift at 22:00? Tick the correct answer.

Down valley towards the Klip River	
Upslope towards the spot height 1892	
Up valley towards the reservoir	
Upslope towards the spot height 1908	

(2)

- (b) **Provide** an explanation for your answer in Question 2.2.4(a).

(2)

2.3 Refer to the topographic map extract.

Calculate the average gradient from trigonometrical beacon 280 (A4) to point Y (A5).

2.3.1 Difference in height: _____ m (1)

2.3.2 Distance between the two points: _____ m (1)

2.3.3 Gradient: **1:** _____ (2)

Calculations:

2.3.4 Tick the description which best fits the gradient calculated in Question 2.3.3 above.

Flat	
Gentle	
Steep	
Extremely steep	

(2)

2.4

2.4.1 Is Mhloshana (C7) intervisible from spot height 1908 (F7)?

(2)

2.4.2 **Provide** a reason for your answer.

(2)

[37]

Q2 sub-total

3. *GIS and Research*

Seekoeivlei (in blocks A5 to D5) is a wetland of international importance. The Memel municipality is planning to develop a number of tourist lodges just outside the nature reserve. It is important that any development close to a RAMSAR site is sustainable. The company conducting the environmental impact assessment (EIA) on the proposed development uses a GIS to evaluate the potential impacts.

- 3.1 Study Figure 1 below which shows the boundary of Seekoeivlei Nature Reserve.

On Figure 1, fill in the main rivers which flow into the reserve:

- Wildemanspruit
- Klipriver
- Pampoenspruit

(3)

- 3.2 **Create** a buffer zone (GIS processing) of 1 cm around the nature reserve. (Hint: follow the boundary of the reserve.)

(2)

Figure 1: Boundary of Seekoeivlei Nature Reserve



3.3 Complete the table below by answering the following questions.

3.3.1 **Identify** THREE activities within or on the buffer zone boundary which could impact negatively on the Seekoeivlei Nature Reserve.

3.3.2 Give the block reference of each activity identified in Question 3.3.1.

3.3.3 For each activity identified in Question 3.3.1, **outline** the possible negative impact this could have on the wetland.

3.3.1 Activity	3.3.2 Block reference	3.3.3 Possible negative impact on the wetland
(3)	(3)	(6) [17]

Q3 sub-total

4. ***Settlement and economic activities***

Refer to the aerial photograph and the topographic map extracts.

4.1 Tick the correct answer.

According to the urban hierarchy, Memel is classified as a ...

City	
Hamlet	
Metropolitan area	
Minor country town	

(2)

4.2 **Describe** TWO factors that determined the site of Memel. Use map/photo evidence and your knowledge of settlements.

- _____

- _____

(4)

4.3 Note the avenue of trees along the north-western boundary of the town. **Suggest** ONE important function of these trees.

(2)

4.4 **Comment** on the importance of fire breaks around Memel.

(2)

4.5 **Calculate** the area (hectares) of the formal town area of Memel, as marked by the dashed line on the aerial photograph extract. Assume that the area is a rectangle.

Note 1 ha = 10 000 m².

Calculations:

Area of Memel _____ ha

(4)

- 4.6 Study the collage of photographs below which show the various activities offered to the locals and tourists visiting Memel.

Figure 2: Collage of photographs showing activities offered in Memel



The town is known for its outdoor and adventure activities, for example, the annual Mahem Festival. **Design** a geographical advertisement which promotes this weekend festival highlighting the many attractions that Memel and the Mahem Festival offer (see Figure 2).

You will be awarded marks for the:

- geography of the advertisement (location factors, geographical details and map) (4)
- marketing or focus of the advertisement (the festival and other related activities) (4)
- presentation of the advertisement (2)

Advertisement for Memel and the annual Mahem Festival



[24]

Q4 sub-total

Total: 100 marks

Rough work (Not for marks)