NATIONAL SENIOR CERTIFICATE EXAMINATION
SUPPLEMENTARY EXAMINATION – MARCH 2017

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.

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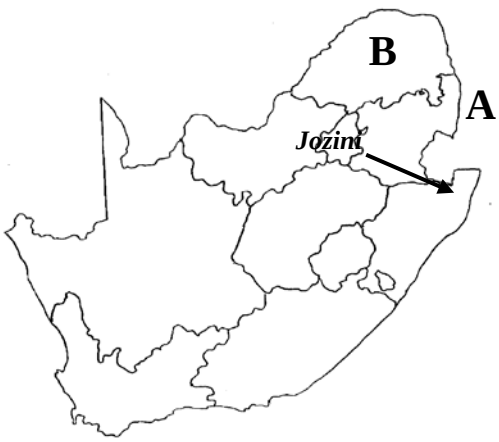
LOCATION MAP: LOCATION OF JOZINI IN SOUTH AFRICA



Jozini is a small town, close to the N2, in northern KwaZulu-Natal.

Tourism is important to the area and the local community initiatives depend on this. Jozini Dam (previously called Pongolapoort Dam) was completed in 1974 and is situated in a river gorge next to the town. The dam was originally built to supply the local farmers on the Makhathini Flats with irrigation water for growing sugar, cotton and maize. The dam is surrounded by private and provincial government reserves and is a protected breeding area for tiger fish.

[Source: <www.jozini.org.za>]

QUESTION 1 ATLAS USE, MAP ORIENTATION AND TECHNIQUES

1.1 Refer to the location map above, as well as the 1:50 000 topographic map extract 2732AC JOZINI, to answer the following questions. Tick the correct box.

1.1.1 The neighbouring country labelled A on the location map above is …

Swaziland	
Lesotho	
Mozambique	✓
Zimbabwe	

(1)

1.1.2 The province labelled B on the location map above is …

Limpopo	✓
Mpumalanga	
Gauteng	
Free State	

(1)

1.1.3 (a) The approximate true bearing of trigonometrical station 41 (Mpondwane) in C1 from spot height 418 (E1) is …

7°	
173°	
187°	
353°	✓

(2)

(b) (i) Is trigonometrical station 41 (Mpondwane) in C1 intervisible from spot height 418 (E1)? Tick the correct option.

YES	NO
	✓

(1)

(ii) **Provide** ONE reason for your answer.

There is a spot height of equal height / the line of vision blocked (2)

1.1.4 The magnetic declination for the topographic map sheet 2732AC JOZINI will be … in 2017. Tick the correct answer.

2° 45' W of True North	
17° 29' W of True North	
20° 14' W of True North	
22° 59' W of True North	✓

(2)

Calculations	
2017 – 2002 = 15 years	*20° 14' + 2° 45'*
15 × 11 = 165'	*= 22° 59'*
165' = 2° 65'	

1.1.5 The length of the Pongolapoort Dam wall (C5) is … m.

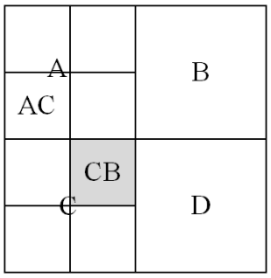
0,1 m	
0,5 m	
100 m	
500 m	✓

1 cm × 500
= 500 m

(2)

1.1.6 The map code of the topographic map sheet to the south east of 2732AC JOZINI is …

2732AB	
2732AD	
2732CB	✓
2732DA	



(2)

1.1.7 A number of fluvial features/ structures (A to C) have been labelled on the 1:50 000 topographic map extract 2732AC JOZINI. **Identify** each labelled feature/ structure by circling the correct underlined word(s).

A (Block F14) constructed dam/ non-perennial water body/ perennial water body

B (Block A10) rapids/ stream braiding/ sand dunes

C (Block C5) reservoir/ communications tower/ water tower (3)

1.2 Relief and gradient

Refer to the 1:50 000 topographic map extract 2732AC JOZINI.

1.2.1 **Calculate** the average gradient from trigonometrical station 12 (G1) to point D (G1).

(a) Difference in height: *458* m *(Range 458–468)* (1)

(b) Distance between the two points: *1 400* m (1)

(c) Gradient: **1:** *3* (2)

Calculations				
(a)	*598,0 – 130 (Range 130–140)* *= 468 (Range 458–468)*	(c)	$G = 1 : \frac{d}{h}$ $\frac{1400}{468}$	Method mark
(b)	*2,8 cm × 500* *= 1400–1500 range*		*1 : 2,99* *(range 1 : 2–4)*	

(d) **Verify** how the answer to Question 1.2.1(c) indicates an accurate description of a gorge/ steep slope.

A gorge has steep sides and the gradient of 1 : 3 indicates a steep slope. There is also a large height change over a short distance, which indicates a steep slope. (2)

1.2.2 **Explain** the importance of cutlines in F1 and G1.

Lines along which vegetation has been cleared for servitudes to be constructed. These are for powerlines. (2)

[24]

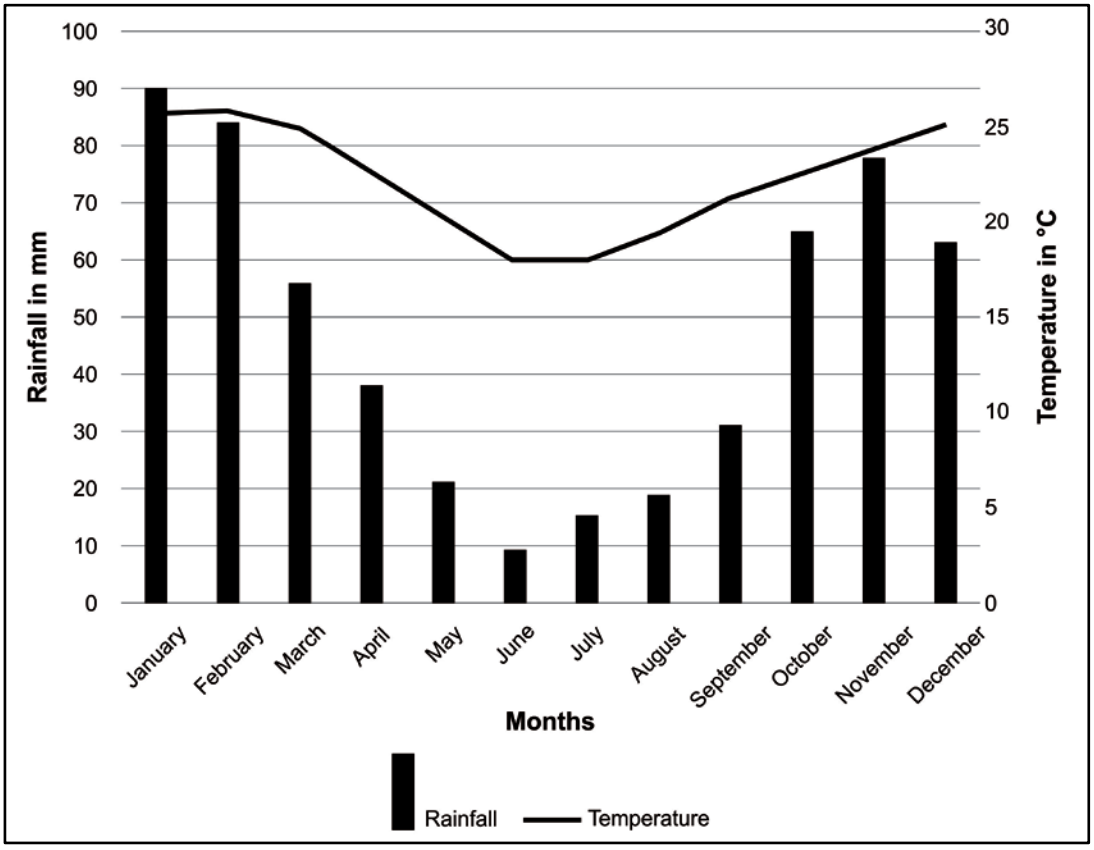
Q1 subtotal

QUESTION 2 CLIMATE AND DRAINAGE ANALYSIS

Study the topographic map extract 2732AC JOZINI.

2.1 Study Figure 1, a climate graph for Jozini.

Figure 1: Climate graph – Jozini



2.1.1 **Calculate** the total annual rainfall for Jozini.

569 mm *(Accept range 560–580 mm)* (2)

2.1.2 **Identify** the warmest month in Jozini and **estimate** the temperature for that month.

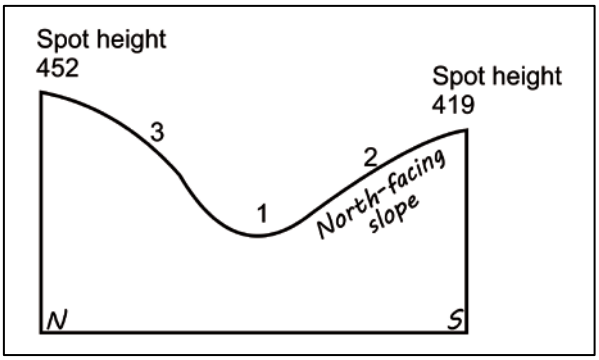
Month: *February*, Temperature: (*25 / 25,8* °C *26* °C) (3)

2.1.3 **Calculate** the range in the average annual temperature for Jozini.

25,8 – 18 = 7,8 °C *Accept range (7–9 °C)*
26 – 18 = 8 °C (2)

2.2 Study Figure 2 below which shows a sketch cross section from spot height 452 (A3) to spot height 419 (B2). Three sites have been numbered on the cross section. Note that the cross-section is not drawn to scale.

Figure 2: Sketch cross section



Grade 12 students recorded the following temperatures at midday at selected sample sites (numbered 1 to 3) on Figure 2.

18 °C	**24 °C**	**32 °C**

2.2.1 **Complete** the table by writing the correct temperature below each site.

SITE	**Site 1**	**Site 2**	**Site 3**
TEMPERATURE	*24 °C*	*32 °C*	*18 °C*

(3)

2.2.2 **Indicate** the north-facing slope on the sketch cross section (Figure 2). (2)

2.2.3 **Provide** ONE piece of map evidence to justify your answer in Question 2.2.2.

The vegetation cover (woodland) on the south-facing slopes in the area (A2 and A3). / Because spot height 419 is facing towards spot height 452. [spatial orientation] (2)

2.3 The predominant drainage pattern in G1 is … Tick the correct answer.

dendritic	
parallel	✓
radial	
rectangular	

(2)

[16]

Q2 subtotal

QUESTION 3 PHOTOGRAPH ANALYSIS, RURAL AND URBAN SETTLEMENTS

Refer to the 1:50 000 topographic map extract and the accompanying 1:10 000 aerial photograph.

3.1 3.1.1 FOUR constructed features (E to H) have been labelled on the accompanying 1:10 000 aerial photograph. **Identify** these features.

E *Canal*

F *Weir / wall (could be a wall that dams up river – weir)*

G *Shop (shopping centre) / store*

H *School* (4)

3.1.2 **Name** the river labelled I on the aerial photograph.

iNkwane River (2)

3.2 Refer to the 1:50 000 topographic map extract 2732AC JOZINI and the accompanying 1:10 000 aerial photograph.

3.2.1 **Describe** TWO **site** factors that led to the development of Jozini.

- *Defence site – good view of the surrounding area*
- *Dry-point site – out of the danger of flooding*
- *Flat land on plateau in area*
- *Plateau is surrounded by mountains* (4)

3.2.2 (a) **Compare** the street patterns of the town of Jozini (C4) and Makhonyeni (D8).

Jozini: *Planned irregular, some even haphazard / cobweb / spiderweb.*

Makhonyeni: *Grid / parallel* (4)

(b) **Account for** the differences in the street patterns of Jozini and Makhonyeni.

Jozini – hilly area, so streets follow the relief.
Makhonyeni – flat area, thus easy to plan a grid pattern / older patterns.
(Could talk about typical 'betterment' settlement layout in former homeland.) (2)

3.2.3 Study Photographs 1 and 2 below. These show a typical Saturday morning in the business area of Jozini. Refer also to the 1:10 000 aerial photograph.

Photograph 1

Photograph 2

[Source: J Hosking, 2016]

(a) **Provide** ONE reason for the location for the business centre of Jozini.

Along the main road, where shops and businesses are easily accessible. (2)

(b) (i) **Classify** the settlement of Jozini as a high-order or low-order service centre. Tick the correct answer.

High-order service centre	Low-order service centre
	✓

(1)

(ii) **Verify** your classification by using evidence from Photographs 1 and 2, the topographic map extract 2732AC JOZINI and the 1:10 000 aerial photograph.

Limited number of shops; ATM teller (Photograph 1), rather than bank; no high-rise buildings, Pep Stores in Photograph 2, is found in nearly all small towns. Topographic map indicates a relatively small settlement. (2)

3.3 Refer the 1:50 000 topographic map extract 2732AC JOZINI.

3.3.1 Locate the experimental farm in blocks A 11–12 and B 11–12.

(a) **Classify** the main type of economic activity taking place at the experimental farm.

Research, quaternary (1)

(b) **Explain** the purpose of an experimental farm.

To look at good farming practice; to look at growing GM crops; for training and teaching local farmers; developing new varieties/ insect/ drought resistant. (2)

3.3.2 Refer to the farming activities that are taking place in A6–7, B6–7 and B9–10, C9–10.

Compare the farming patterns evident in the two areas by **completing** the table below.

Criteria	**Farming area in blocks** A6–7, B6–7	**Farming area in blocks** B9–10, C9–10	
Scale of farming	*Small scale*	*Large scale*	
Size of the land units	*Small / less than 1 ha*	*Large / greater than 20 ha*	
Economic value of the farming	*For family consumption/ subsistence farming / food security*	*To be sold at the commercial market / money*	
Water resources available	*Non-perennial rivers 1 reservoir / BhuKwuni*	*Phongola River Canal for irrigation / Dams / Balanhlanya*	(8 × 1) (8)

3.4 Locate the Jozini Tiger Lodge in C4 on the topographic map extract 2732AC JOZINI. Refer to Photograph 3, the Fact File, and the 1:10 000 aerial photograph 2732 JOZINI.

FACT FILE

Jozini Tiger lodge is situated along the banks of the Jozini (Pongolapoort) Dam, in the heart of northern KwaZulu-Natal. The dam and Pongola Game Reserve is surrounded by World Heritage Sites as well as some of the most acclaimed nature reserves in the world, all of which are about a 1-hour drive away: for example, Sodwana Bay, Imfolozi, Mkhuze and Ndumo Game Reserves. The Tiger fishing tournament in October draws anglers from around the world. Jozini Dam is the most southern lake where tiger fish are endemic. These tiger fish are declining in most rivers due to pollution, water extraction and obstructions like weirs and dams that prevent their passage up or downstream to suitable spawning sites along flooded river banks and lake shores.

Photograph 3: Jozini Tiger Lodge

[Source: <www.jozini.org.za>]

3.4.1 **Provide** TWO reasons for the location of the Jozini Tiger Lodge.

- *North-facing (warm and sunny)*
- *Access to the dam for boating (jetties)*
- *Close to the water*
- *Very scenic – looking across the dam at the surrounding gorges*
- *One of the few places where Tiger fish is still bred*
- *Surrounded by world heritage sites* (4)

3.4.2 The topographic map extract suggests that the Jozini Tiger Lodge is a hospital. **Explain** why errors such as this could occur when compiling a map.

An error in recording when in the field or in translation; could have originally been a hospital, before the dam was built. (2)

3.4.3 **Suggest** THREE recreational activities tourists could participate in when staying at the Jozini Tiger Lodge.

- *Boating/ skiing/ water activities/ swimming*
- *Fishing*
- *Game drives*
- *Visit other reserves*
- *Cruising on a large boat – bird and game-watching*
- *Participate in the Tiger Fishing tournament*
- *Hiking*
- *Hunting* (3)

[41]

Q3 subtotal

QUESTION 4 RURAL SETTLEMENT ISSUES: SOCIAL JUSTICE – LAND REFORM

4.1 Refer to the topographic map extract 2732AC JOZINI. Focus on the blocked area A9–12, B9–12, C9–12 and D9–12. This area is marked by means of a red box on the topographic map extract 2732AC JOZINI.

Complete the land-use map of the area marked in the blocks in Figure 3 by **labelling** and/ or sketching in the following features:

4.1.1 **Label:**

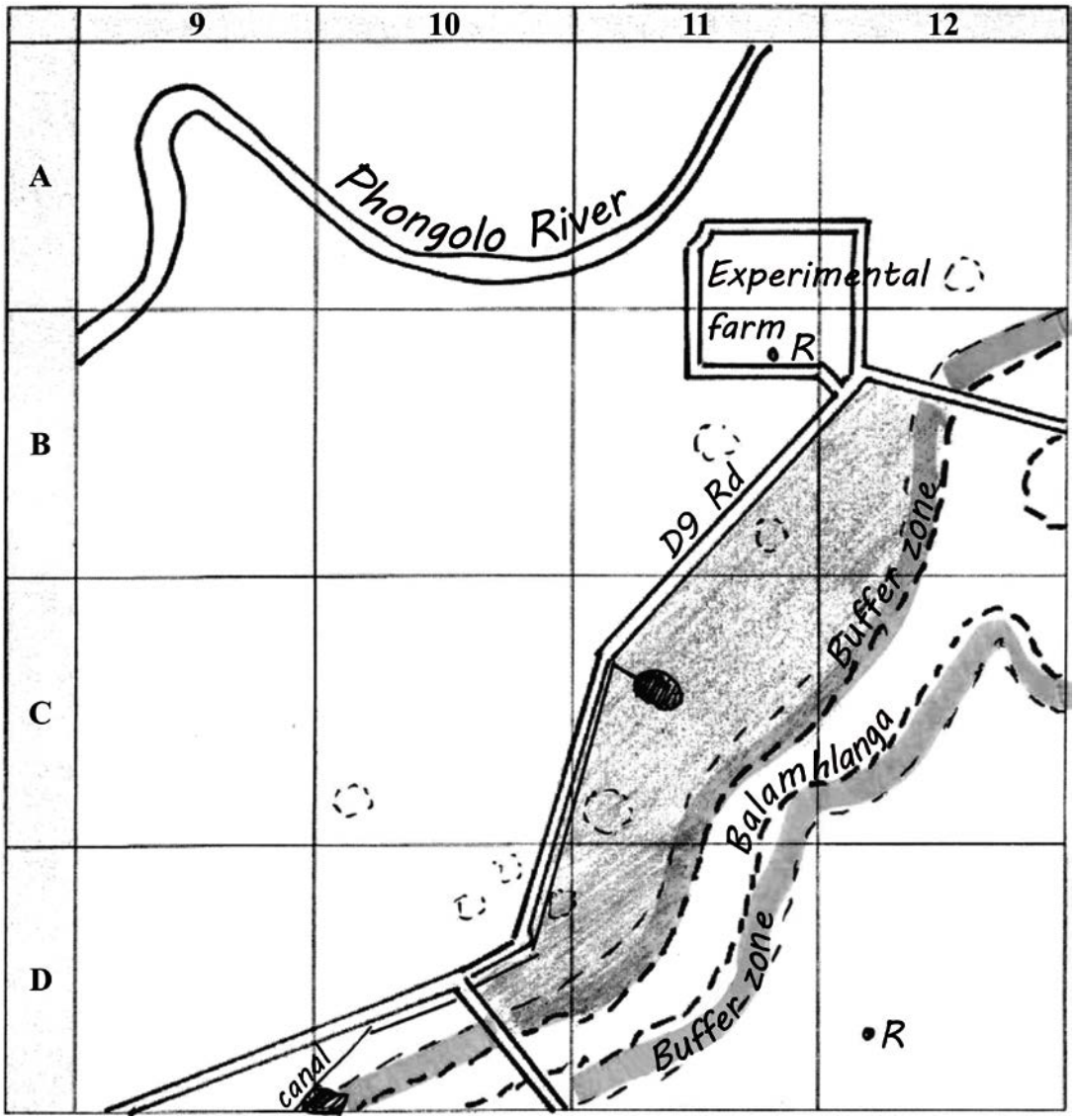
- The Phongolo River
- Balamhlanga seasonal pan
- D9 Rd (road)
- Experimental farm (4)

4.1.2 Fill in/ sketch and **label** the following:

- The canal system in the area
- All human-constructed water features (4)

You should compile a key on Figure 3 to assist with the labelling.

Figure 3: Land-use map (Question 4.1.1 and 4.1.2)



Key:

Symbol	Description
	Dirt road
	Land-claim area awarded to claimants
	Buffer zone
	Constructed dam(s) / perennial water / not constructed
canal	*Canal*
R	*Reservoirs*

(8 marks max)

4.2 An area of land close to the Balamhlanga pan had been subject to a land-claim and this land has been awarded to FIVE claimants. The area has been shaded in on Figure 3 (page 15).

As a member of the Makhathini Landowners Trust, you have been asked to carry out a survey to assist with the subdivision of the land to ensure effective land-use and farming practice takes place.

4.2.1 **Draw** in a 0,5 cm buffer zone surrounding the Balamhlanga seasonal pan on Figure 3 . (2)

4.2.2 **Suggest** the importance of putting in a buffer zone around the Balamhlanga seasonal pan, before dividing the land.

So that this land is not built on or used; to prevent damage and crop loss; preserve the water body (for water management), eco/environmental considerations / preventing loss of housing if flooding occurs. (2)

4.2.3 **Outline** how you would fairly divide the area that has been awarded to the land claimants. There are five families who have been awarded an equal portion of the land.

- *Find the area of the land that has been awarded – large rectangle.*
- *Divide into five strips from the road to the buffer zone, so each farmer has road and water access.*
- *Survey boundaries and put in fencing.*
- *Try and allow communal access to water from dam in C11.* (4)

4.2.4 **Complete** the table below which reflects the attribute information that applies to one newly sub-divided farm.

Attribute information

Details

Size of the farm	*± 20 ha*
Access to water	*Canal* *Balamhlanga seasonal pan*
Access to transport routes	*Along the main dirt/ sand road – D9 Road; accessible from Jozini (P449).*

(3)

[19]

Q4 subtotal

Total: 100 marks

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