basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS/
NATIONAL SENIOR CERTIFICATE EXAMINATIONS

GEOGRAPHY P2

2019

MARKS: 75

TIME: 1½ hours

	EXAMINATION NUMBER:														
	CENTRE NUMBER:														

	M	In	SM	In	DM	In	CM	In	IM	In	MC	EA	EX	RM	In
Q1															
Q2															
Q3															
Q4															
TOT															

**This question paper consists of 13 pages and
1 page for rough work and calculations.**

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RESOURCE MATERIAL

1.   An extract from topographic map 2926BB THABA NCHU.

2.   Orthophoto map 2926 BB 17 THABA NCHU (NORTH)

3.   **NOTE:** The resource material must be collected by schools for their own use.

INSTRUCTIONS AND INFORMATION

1.   Write your EXAMINATION NUMBER and CENTRE NUMBER in the spaces on the cover page.

2.   Answer ALL the questions in the spaces provided in this question paper.

3.   You are provided with a 1 **:** 50 000 topographic map 2926BB THABA NCHU and an orthophoto map 2926 BB 17 THABA NCHU (NORTH) of a part of the mapped area.

4.   You must hand the topographic map and the orthophoto map to the invigilator at the end of this examination session.

5.   You may use the blank page at the end of this question paper for all rough work and calculations. Do NOT detach this page from the question paper.

6.   Show ALL calculations and formulae, where applicable. Marks will be allocated for these.

7.   Indicate the unit of measurement in the final answer of calculations, e.g. 10 km; 2,1 cm.

8.   You may use a non-programmable calculator.

9.   You may use a magnifying glass.

10.   The area demarcated in RED on the topographic map represents the area covered by the orthophoto map.

11.   The following English terms and their Afrikaans translations are shown on the topographic map:

ENGLISH	**AFRIKAANS**
Diggings	Uitgrawings
Furrow	Voor
Golf Course	Gholfbaan
Landing Strip	Landingstrook
Quarry	Steengroef
Rifle Range	Skietbaan
River	Rivier
Sewerage Works	Rioolwerke
Silos	Graansuiers
Cemetery	Begraafplaas

GENERAL INFORMATION ON THABA NCHU

Thaba Nchu is a town in the Free State located 60 km east of Bloemfontein. The town was initially a trading centre, but following the building of a hotel and casino, it has become a major tourist attraction due to its proximity to Bloemfontein. A variety of wildlife and bird species are found here, as well as a hiking trail, a traditional Tswana site and amenities (facilities) for various activities and adventures in the vicinity (surrounding area).
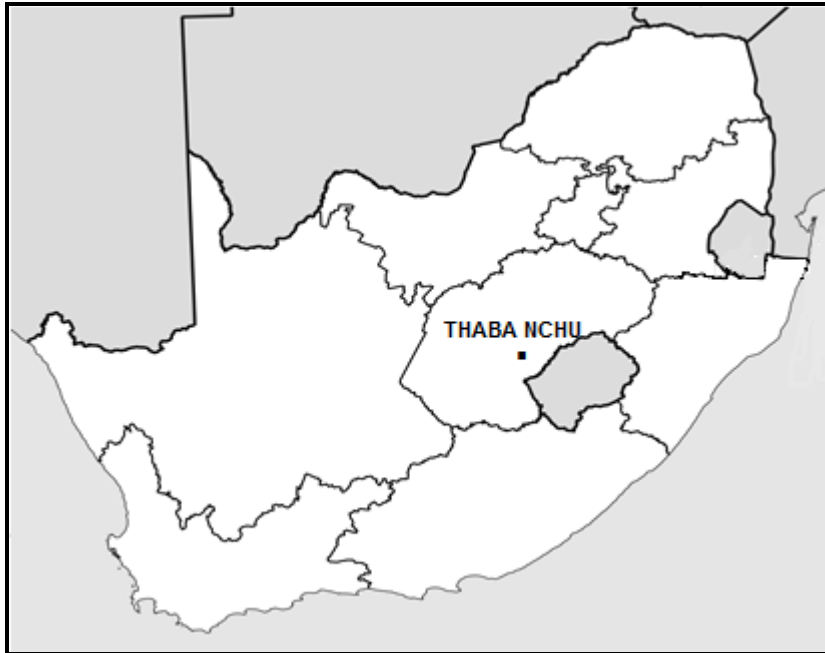
THABA NCHU

[Source: http://en.wikipedia.org/wiki/thaba nchu]

QUESTION 1: MULTIPLE-CHOICE QUESTIONS

The questions below are based on the 1 **:** 50 000 topographic map (2926BB THABA NCHU) as well as the orthophoto map of a part of the mapped 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   Thaba Nchu is situated in …

        A   Limpopo.
        B   Mpumalanga.
        C   the Free State.
        D   Gauteng.

1.2   The map code/index of the area south-west of Thaba Nchu is …

        A   2926DC.
        B   2926BC.
        C   2926CC.
        D   2926AC.

1.3   The contour interval of the orthophoto map is … metres.

        A   5
        B   20
        C   1 000
        D   10 000

1.4   The safest direction for aeroplanes to take off using the landing strip at **R** in block **G4** and block **H4**, is in a/an … direction.

        A   easterly
        B   northerly
        C   southerly
        D   westerly

1.5   The stream order of the river at **J** in block **I8** on the topographic map is …

        A   1
        B   2
        C   3
        D   4

1.6   The feature at 29°07'24''S 26°48'24''E/29°07,4'S 29°48,4'E is ...

        A   non-perennial water.
        B   a row of trees.
        C   cultivated land.
        D   a farm boundary.

1.7 The true bearing of spot height 1523 in block **C7** from trigonometrical station 47 in block **B8** on the topographic map is …

A 146°
B 34°
C 220°
D 214°

1.8 The settlement pattern at **K** in block **F2** on the topographic map is …

A nucleated.
B dispersed.
C linear.
D rectangular.

1.9 The slope at line **1** on the orthophoto map is …

A gentle.
B steep.
C concave.
D convex.

1.10 The main factor evident on the topographic map that limits expansion of the cultivated land in an easterly direction in block **F2** is …

A a steep gradient.
B a lack of open space.
C extensive erosion.
D a built-up area.

1.11 The major primary activity in the mapped area is …

A crop farming.
B fruit farming.
C mining.
D forestry.

1.12 An advantage of the street pattern at **L** in block **E7** and block **E8** on the topographic map is that ...

A travelling time is lost.
B you cannot get lost easily.
C it has many winding roads.
D you have to travel greater distances.

1.13　The natural purifier of water, evident in block **F3** on the topographic map, is …

　　A　a perennial river.
　　B　sewage works.
　　C　a storage dam.
　　D　a marsh and vlei.

1.14　The feature at **4** on the orthophoto map is a/an …

　　A　excavation.
　　B　storage dam.
　　C　woodland.
　　D　quarry.

1.15　The dominant drainage pattern in area **M** on the topographic map …

　　A　centripetal.
　　B　radial.
　　C　dendritic.
　　D　trellis.

(15 x 1)　　**[15]**

QUESTION 2: MAP CALCULATIONS AND TECHNIQUES

2.1   Refer to the orthophoto map.

        2.1.1   Calculate, in km², the area of the cemetery at **3** on the orthophoto map. Show ALL calculations. Marks will be awarded for calculations. Clearly indicate the unit of measurement in your final answer.

                    Formula: **Area = length (L) × breadth (B)**

                                                            (5 x 1)   (5)

        2.1.2   Explain why the cemetery at **3** on the orthophoto map appears larger than the same cemetery indicated at letter **N** in block **F4** on the topographic map.

                                                                (1 x 1)   (1)

2.2   Refer to line **O-P** that links trigonometrical station 208 in block **D4** and spot height 1494 in block **D6** on the topographic map.

2.2.1   Calculate the average gradient from trigonometrical station 208 at **O** to spot height 1494 at **P**. Show ALL calculations. Marks will be awarded for calculations. Clearly indicate the unit of measurement in your final answer.

Formula: **Average Gradient** $= \dfrac{\textbf{vertical interval (VI)}}{\textbf{horizontal equivalent (HE)}}$

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

(5 x 1)   (5)

2.2.2   Is the average gradient calculated in QUESTION 2.2.1 steep or gentle?

_____

(1 x 1)   (1)

2.2.3   Explain how the average gradient calculated in QUESTION 2.2.1, influenced human activity in the area surrounding line **O-P**.

_____

_____

_____

(1 x 1)   (1)

2.3   Refer to the topographic map.

2.3.1   Calculate the magnetic declination for the current year (2019). Show ALL calculations. Marks will be awarded for calculations. Clearly indicate the unit of measurement in your final answer.

Difference in years: _____

Mean annual change: _____

Total change: _____

Magnetic declination for 2019:   _____

_____

_____
(5 x 1)   (5)

2.3.2   Explain how a person can use the magnetic declination for 2019 to reach Eden Dam in block **G12** from trigonometrical station 340 in block **F11**.

_____

_____

_____

_____
(2 x 1)   (2)
[20]

QUESTION 3: APPLICATION AND INTERPRETATION

3.1   Does the mapped area receive annual rainfall or seasonal rainfall? Give ONE reason evident on the topographic map.

Answer: _____

Reason: _____

_____
                                                                                              (1 + 1)   (2)

3.2   Refer to block **G5** on the topographic map. The built-up nature of the suburb, Ratlou, has resulted in fairly high temperatures.

3.2.1   Identify TWO factors evident in block **G5** that could reduce the temperature in Ratlou.

_____

_____
                                                                                    (2 x 1)   (2)

3.2.2   Explain how ONE of these factors mentioned in QUESTION 3.2.1 reduces the temperature in Ratlou.

_____

_____
                                                                                    (1 x 2)   (2)

3.3   Refer to blocks **I9**, **I10** and **I11** on the topographic map.

3.3.1   Describe the general topography (slope) of the southern section of blocks **I9**, **I10** and **I11** and support your answer with evidence from the topographic map.

Answer: _____

Evidence: _____

_____
                                                                                    (1 + 2)   (3)

3.3.2 Explain how the general topography (slope) described in QUESTION 3.3.1 influenced the settlement pattern of the area.

_____

_____

_____

_____

(2 x 2) (4)

3.4 Refer to block **H3** on the topographic map.

3.4.1 Identify the main activity that is causing an environmental injustice in block **H3**.

_____

(1 x 2) (2)

3.4.2 Explain how the activity, identified in QUESTION 3.4.1, causes an environmental injustice.

_____

_____

_____

_____

(2 x 2) (4)

3.5 Refer to industrial zone **2** on the orthophoto map.

3.5.1 Does this zone have heavy or light industries? Give a physical factor to support your answer.

Answer: _____

Reason: _____

_____

(1 + 2) (3)

3.5.2   Is residential area **5**, located close to industrial zone **2**, a low- or high-income residential area?

_____

                    (1 x 1)   (1)

3.5.3   Explain why the residents of residential area **5** prefer to live close to the industrial zone.

_____

_____

                    (1 x 2)   (2)

                [25]

QUESTION 4: GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

4.1   Refer to block **C2** on the topographic map.

4.1.1   Vector data is data that consists of points, lines and polygons. Identify the following vector data in block **C2**:

A point feature related to altitude: _____

A line feature that creates accessibility: _____

A polygon feature related to a primary activity: _____

                    (3 x 1)   (3)

4.1.2   Explain how the line feature in QUESTION 4.1.1 advantaged the primary activity, also mentioned in QUESTION 4.1.1.

_____

_____

                    (1 x 2)   (2)

4.2   Refer to area **M** on the topographic map.

4.2.1   Define the term *attribute data.*

_____

_____

                    (1 x 1)   (1)

4.2.2 The Department of Tourism wants to promote area **M** as a tourist attraction. Discuss TWO attributes that are found in area **M** that they could use to attract tourists.

_____

_____

_____

_____
(2 x 2) (4)

4.3 Refer to area **M** on the topographic map.

4.3.1 Define the term *remote sensing.*

_____

_____
(1 x 1) (1)

4.3.2 Explain how remote sensing could assist in monitoring the environmental impact of tourists on area **M**.

_____

_____

_____

_____
(2 x 2) (4)
[15]

GRAND TOTAL: **75**

ROUGH WORK AND CALCULATIONS

(NOTE: Do NOT detach this page from the question paper.)