GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

GAUTENG DEPARTMENT OF EDUCATION

PREPARATORY EXAMINATION

2019

10782

GEOGRAPHY

PAPER 2

TIME: 1½ hours

MARKS: 75

NAME AND SURNAME:	

QUESTION NUMBER	Q1	Q2	Q3	Q4	TOT
MARKER					
MODERATOR					
MARK SCORED					
TOTAL	15	20	25	15	75

GEOGRAPHY: Paper 2

10782E

X10

GAUTENG DEPARTMENT OF EDUCATION

PREPARATORY EXAMINATION

GEOGRAPHY
(Paper 2)

TIME: 1½ hours

MARKS: 75

RESOURCE MATERIAL

1. An extract from the topographic map 3318DD STELLENBOSCH
2. Orthophoto map 3318 DD 18 STELLENBOSCH
3. **NOTE**: The resource material must be collected by schools for their own use.

INSTRUCTIONS AND INFORMATION

1. Write your NAME and SURNAME in the space provided on the cover page.
2. Answer ALL the questions in the spaces provided on this question paper.
3. You are supplied with a 1 : 50 000 topographic map (3318DD STELLENBOSCH) and an orthophoto map (3318 DD 18 STELLENBOSCH) 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 the 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 correct unit of measurement in your final answer for all calculations. No marks will be awarded for answers with no / incorrect units of measurement.
8. You may use a non-programmable calculator and a magnifying glass.
9. The area demarcated in RED on the topographic map represents the area covered by the orthophoto map.

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

ENGLISH	AFRIKAANS
Furrow	*Voor*
Golf course	*Gholfbaan*
River	*Rivier*
Sewage works	*Rioolwerke*

GENERAL INFORMATION ON STELLENBOSCH

Stellenbosch is situated 50 kilometres east of Cape Town, along the banks of the Eerste River at the foot of the Stellenbosch Mountain. It is the second oldest European settlement in the province and became known as the City of Oaks (Eikestad) due to the large number of oak trees in the area. The region has a Mediterranean climate with hot dry summers and cool wet winters. Stellenbosch lies at the foot of the Cape Fold mountain range, with fertile valleys which makes it favourable for viticulture. Grapes grown in this area are mainly used for wine production (counts as the most important wine area of South Africa), as opposed to table grapes.



[Source: *http://en.wikipedia.org/wiki/Stellenbosch, Western Cape*]

QUESTION 1: MULTIPLE-CHOICE QUESTIONS

The questions below are based on the 1 : 50 000 topographic map (3318DD STELLENBOSCH) 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 correct answer and write only the letter (A – D) in the block next to each question.

1.1 The province situated directly north of Stellenbosch is …

A Western Cape Province.
B Eastern Cape Province.
C Northern Cape Province.
D KwaZulu-Natal.

1.2 The index code of the map directly north-west of the Stellenbosch map is …

A 3318 DB.
B 3318 DC.
C 3318 DA.
D 3318 BA.

1.3 The direct distance between spot height 1210 in block **E14** and trigonometrical station 390 in block **F10** on the topographical map, is … km.

A 6,25
B 6,45
C 6,14
D 6,34

1.4 The dam wall (**J**) in block **B7** is … metres above sea level.

A 240
B 220
C 200
D 260

1.5 The landform at **1** on the orthophoto map is a …

A valley.
B spur.
C saddle.
D ridge.

1.6 Point **K** in block **H3** on the topographic map, where the Eerste River and the Bloukliprivier meet, is called a / an …

A watershed.
B interfluve.
C confluence.
D source.

1.7 The stream order at **L** in block **E13** on the topographic map is a … order.

A first
B second
C fourth
D third

1.8 The Eerste River in block **G5** on the topographic map is an example of a / an … river.

A permanent
B exotic
C periodic
D episodic

1.9 The blue dotted line at **M** in block **H10** on the topographic map indicates a / an …

A non-perennial river.
B perennial river.
C underground tunnel.
D underground pipeline.

1.10 The street pattern at **2** on the orthophoto map is ...

A linear.
B irregular.
C radial.
D gridiron.

1.11 Stellenbosch is an example of a … town.

A gap
B industrial
C central place
D specialised

1.12 The tertiary economic facility at **3** on the orthophoto map is ...

A educational.
B a medical clinic.
C a shopping centre.
D a financial institution.

1.13 The shape of rural settlements found at **N** in block **D3** on the topographic map is …

A linear.
B round.
C T-shaped.
D stellar.

1.14 The point symbol in block **E6** on top of the Papegaaiberg is a …

A communications tower.
B monument.
C place of worship.
D cemetery.

1.15 The large-scale farming activity in Jonkershoek in block **G11** on the topographic map is …

A fishing.
B livestock.
C fruit.
D forestry.

(15 x 1) **[15]**

QUESTION 2: MAP CALCULATIONS AND TECHNIQUES

2.1 Refer to the area indicated as **4** on the orthophoto map.

Calculate the area of the farm indicated as **4** in km². Show ALL calculations. Marks WILL be awarded for calculations. Clearly indicate the unit of measurement in your final answer.

Formula: **Length x Breadth**

_____

_____

_____

_____

_____

_____

(5 x 1) (5)

2.2 With reference to the calculation of gradient on the topographical map:

2.2.1 Calculate the gradient of the slope between trigonometrical beacon 397 (block **G9**) and trigonometrical beacon 404 (block **G9**) on the topographical map. Show ALL calculations. Marks WILL be awarded for calculations.

Formula = $\frac{\textbf{Vertical interval}}{\textbf{Horizontal distance}}$

_____

_____

_____

_____

_____

(5 x 1) (5)

2.2.2 Comment on the gradient of the slope calculated in Question 2.2.1.

_____

_____

(1 x 2) (2)

2.3 Refer to the topographical map.

2.3.1 Calculate the magnetic bearing from spot height 1104 in block **G13** to spot height 1110 in block **G15** for the current year. Show ALL calculations. Marks WILL be awarded for calculations.

Difference in years: 2019 – 2015 = 4 years

Mean Annual Change: 7' westwards

Total Annual change: _____

Magnetic declination: _____

True bearing: _____

Magnetic bearing: _____

_____

(4 x 1) (4)

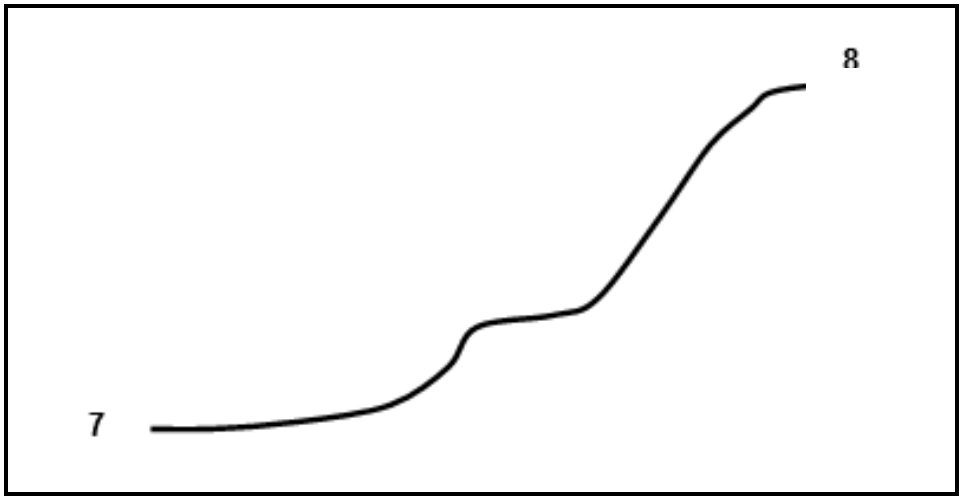
2.3.2 Explain why *true bearing* is used rather than *compass direction* in the aviation industry.

_____

_____

(1 x 2) (2)

2.4 Refer to line **7** – **8** on the orthophoto map. The following is a free-hand cross-profile from **7** to **8** on the orthophoto map.



Indicate the exact location of the following on the cross-profile.
Use the key indicated below:

Dam – D
Recreational area – R (2 x 1)

(2)

[20]

QUESTION 3: APPLICATION AND INTERPRETATION

3.1 Refer to the Jonkershoek area in the south-eastern corner of the topographic map.

3.1.1 Identify the landform found between points **O** and **P** in Jonkershoek.

_____

(1 x 1) (1)

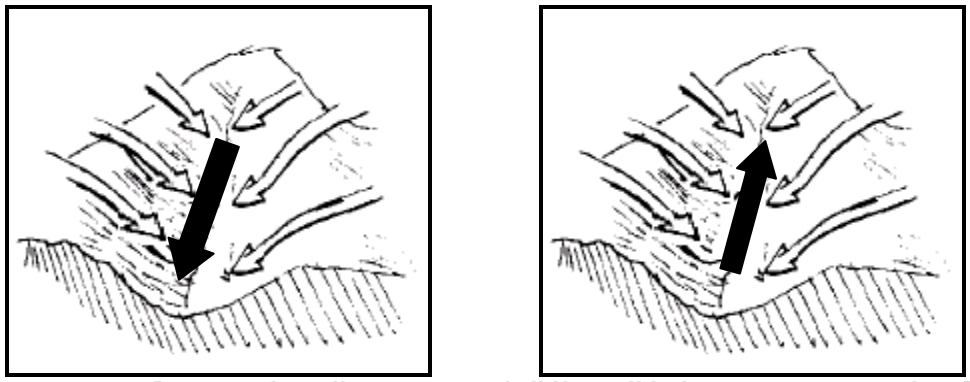
3.1.2 Name the local wind that will develop during the night at the landform identified in Question 3.1.1.

_____

(1 x 1) (1)

3.1.3 (a) Which one of the following, FIGURE 3.1.3 **A** or 3.1.3 **B** illustrates the wind identified in Question 3.1.2.

FIGURE 3.1.3 A **FIGURE 3.1.3 B**



[Source: *http://raanz.org.nz/wiki/pmwiki.php?n=TM.Meteorology*]

_____

(1 x 1) (1)

(b) Explain your answer to Question 3.1.3 (a).

_____

_____

_____

_____

(1 x 2) (2)

3.1.4 Describe the weather conditions and precipitation that the settlement next to the dam in block **H12** will experience because of the nocturnal winds.

_____

_____

(1 x 2) (2)

3.2 Refer to the Banghoek river drainage basin in blocks **F13** and **F14** on the topographic map.

3.2.1 Identify the drainage pattern formed by the river system in blocks **F13** and **F14**.

_____

(1 x 1) (1)

3.2.2 With reference to the topographic map, name TWO physical features that caused the river system to form the drainage pattern identified in Question 3.2.1.

_____

_____

(2 x 1) (2)

3.2.3 (a) Is the drainage density of the Banghoek river system in blocks **F13** and **F14** high or low?

_____

(1 x 1) (1)

(b) Explain how the TWO physical features identified in your answer to Question 3.2.2 influenced the drainage density of the drainage basin.

_____

_____

_____

_____

_____

(2 x 2) (4)

3.3 Refer to the settlements in Partysvallei in blocks **D6** and **D7** and Idasvallei in blocks **E8** and **E9** on the topographic map.

3.3.1 Compare the settlements in Partysvallei and Idasvallei by completing the following table.

	PARTYSVALLEI	IDASVALLEI
Street pattern		
Flow of traffic		

(4 x 1) (4)

3.3.2 In which land-use zone did both these residential areas develop?

_____

(1 x 1) (1)

3.4 Refer to the Kanonkop farm in block **A7*.***

3.4.1 Identify the product farmed on the Kanonkop farm.

_____

(1 x 1) (1)

3.4.2 Is this farmer practising intensive or extensive farming?

_____

(1 x 1) (1)

3.4.3 (a) Does the Kanonkop farm practise small-scale or large-scale farming?

_____

(1 x 1) (1)

(b) Motivate your answer with evidence from the topographic map.

_____

(1 x 2) (2)

[25]

QUESTION 4: GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

4.1 You are contracted by the municipality of Stellenbosch to do a paper GIS of the town's accessibility and infrastructure in block **E10** on the topographic map.

4.1.1 What is *data layering*?

_____

_____

(1 x 1) (1)

4.1.2 Identify TWO layers of data from block **E10** on the topographic map that you will use to draw a paper GIS map.

_____

_____

(2 x 1) (2)

4.1.3 Explain with reference to block **E10**, how these different data layers can be used effectively to study the accessibility and infrastructure of an area.

_____

_____

_____

(1 x 2) (2)

4.2 Refer to the orthophoto map.

4.2.1 What is *spatial resolution*?

_____

_____

(1 x 1) (1)

4.2.2 Study the following TWO extracts from the orthophoto map.

PHOTO A **PHOTO B**



(a) Which of the above photo extracts has a higher resolution?

_____

(1 x 1) (1)

(b) Give a reason for your answer to Question 4.2.2(a).

_____

_____

(1 x 2) (2)

4.3 The circles on the orthophoto map indicate the sphere of influence around the University of Stellenbosch **(9)** and a school **(10)**.

4.3.1 Suggest a reason for the difference in the sphere of influence of the university and the school.

_____

_____

_____

(1 x 2) (2)

4.3.2 Describe the type of data that needs to be gathered to be able to draw these circles on the orthophoto map.

_____

_____

_____

_____

_____

_____

(2 x 2) (4)

[15]

TOTAL: 75

END

ROUGH WORK AND CALCULATIONS

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