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basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

GEOGRAPHY P2

NOVEMBER 2017

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 15 pages and 1 page for rough work and calculations.

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RESOURCE MATERIAL

1. An extract from topographical map 2627CD PARYS

2. Orthophoto map 2627 CD 19 PARYS

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 topographical map (2627CD PARYS) and an orthophoto map (2627 CD 19 PARYS) of a part of the mapped area.

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

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

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

7. Indicate the correct unit of measurement in the final answer of calculations. NO marks will be allocated for answers with incorrect units.

8. You may use a non-programmable calculator and a magnifying glass.

9. The area demarcated in RED on the topographical map represents the area covered by the orthophoto map.

10. The following English terms and their Afrikaans translations are shown on the topographical map:

ENGLISH	**AFRIKAANS**
Aerodrome	Vliegveld
Caravan Park	Karavaanpark
Diggings	Uitgrawings
Golf Course	Gholfbaan
Gap	Poort
Holiday Resort	Vakansieoord
Island	Eiland
Purification Plant	Watersuiweringsaanleg
River	Rivier
Sewage Works	Rioolwerke

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GENERAL INFORMATION ON PARYS

Parys is a town in the Free State in South Africa. It is located on the banks of the Vaal River approximately 115 km south of Johannesburg. The completion of the railway line to Parys in 1905 suddenly made Parys more accessible to the public and this, in turn, led to the growth of the town as a holiday resort and industrial centre. Many artists have settled in the town and the variety of new, interesting shops and attractions make it the ideal breakaway from Gauteng and other big centres. Parys lies within the Vredefort Dome World Heritage Site. The Vredefort Crater is the largest verified impact crater on Earth. The Vredefort Dome was added to the list of UNESCO World Heritage Sites for its geological interest.

Coordinates: 26°54'S 27°27'E

[Adapted from http://en.wikipedia.org/wiki/Parys, South Africa, Freestate]

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QUESTION 1: MULTIPLE-CHOICE QUESTIONS

The questions below are based on the 1 : 50 000 topographical map (2627CD PARYS), 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 The major industrial region closest to Parys is the … industrial region.

A Port Elizabeth-Uitenhage
B Durban-Pinetown
C Western Cape
D Pretoria-Witwatersrand-Vereeniging

1.2 The topographical map northwest of Parys is situated between the following lines of latitude:

A 27°00'S and 27°15'S
B 26°30'S and 26°45'S
C 26°00'S and 27°00'S
D 26°15'S and 26°30'S

1.3 The height of the index contour line in block **D5** is … metres.

A 1 500
B 1 400
C 1 600
D 1 530

1.4 A human factor limiting further expansion of Parys in a north-westerly direction is the …

A permanent river.
B international boundary.
C provincial boundary.
D steep gradient.

1.5 The windpump **K** in block **I2** is situated next to the river, because this area has a … water table.

A high dry season
B high wet season
C low dry season
D low wet season

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1.6 The feature at 26°49'48"S 27°21'54"E/26°49,8'S 27°21,9'E:

A Hiking trail
B Perennial water
C Cultivated land
D Secondary road

1.7 The location of the woodlands in block **B9** was influenced by the …

A katabatic flow.
B anabatic flow.
C thermal belt.
D aspect of slope.

1.8 The section of the Vaal River in the mapped area shows characteristics typical of the …

A middle and lower courses.
B upper course only.
C upper and lower courses.
D lower course only.

1.9 The landform at line **4** on the orthophoto map is a …

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

1.10 The plots of land in block **F9** have elongated (long and narrow) shapes. The most important reason for this shape is to have access to (the) …

A water.
B fertile soil.
C flat land.
D fuel.

1.11 The road at **3** on the orthophoto map is …

A another road.
B an arterial route.
C a secondary road.
D a main road.

1.12 The cultivated land at **5** on the orthophoto map can be identified by its …

A darker tone.
B smooth texture.
C shadow.
D shape.

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1.13 Refer to the surrounding area at **15** on the orthophoto map. The vertical aerial photograph used to produce the orthophoto map was taken between …

A 12:00 and 14:00.
B 14:00 and 16:00.
C 10:00 and 12:00.
D 08:00 and 10:00.

1.14 The settlement pattern at **L** in block **D2** is …

A circular.
B linear.
C clustered.
D dispersed.

1.15 The natural water purification feature in blocks **J2** and **J3** is a …

A windpump.
B cultivated land.
C marsh and vlei.
D excavation.

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

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QUESTION 2: MAP CALCULATIONS AND TECHNIQUES

2.1 Refer to blocks **D3** and **E3**.

2.1.1 Calculate the vertical interval (VI) between **M** and spot height 1 395 in metres. Show ALL calculations. Marks will be awarded for calculations.

_____

_____

_____

_____

(1 x 1) (1)

2.1.2 Calculate the horizontal equivalent (HE) between **M** and spot height 1 395 in metres. Show ALL calculations. Marks will be awarded for calculations.

_____

_____

_____

_____

_____

(2 x 1) (2)

2.1.3 Using the information in QUESTIONS 2.1.1 and 2.1.2, calculate the average gradient between **M** and spot height 1 395. Show ALL calculations. Marks will be awarded for calculations.

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

_____

_____

_____

_____

_____

(2 x 1) (2)

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2.1.4 Would the gradient calculated in QUESTION 2.1.3 result in a low or high stream velocity? Give a reason for your answer.

Answer: _____

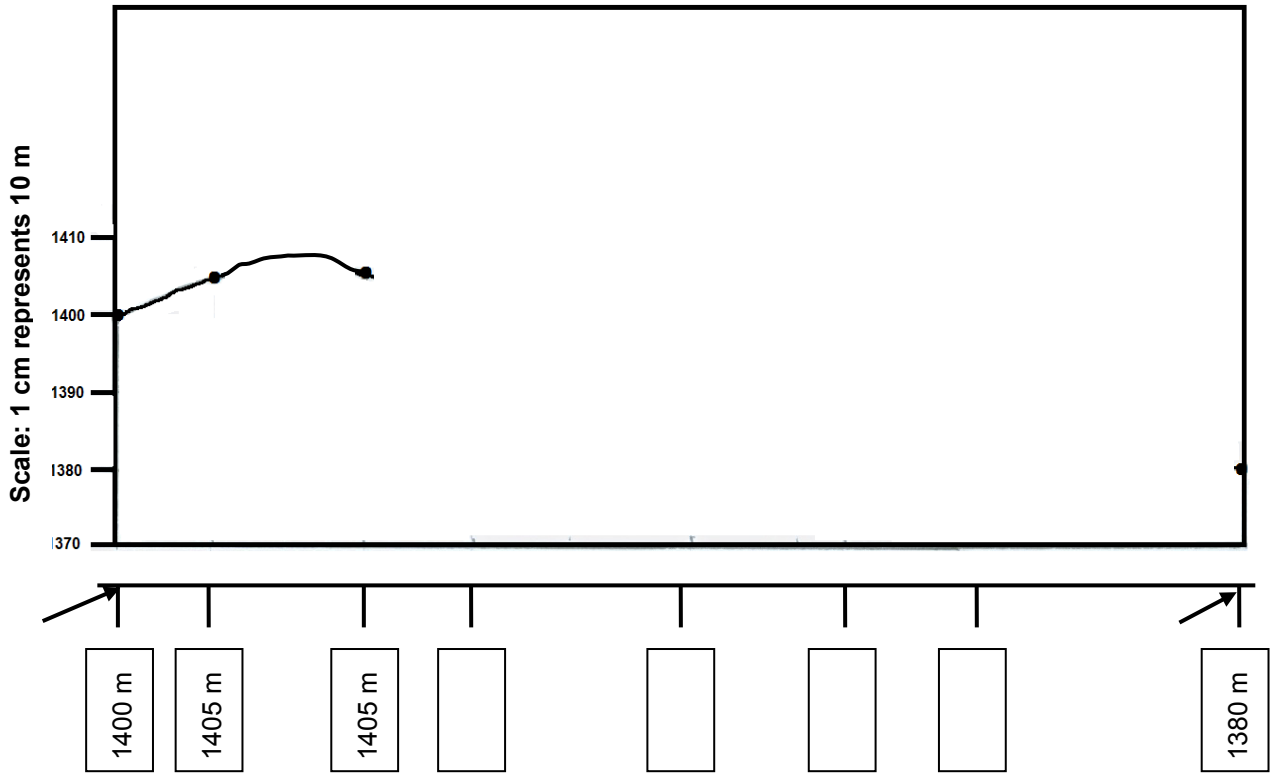
Reason: _____

_____

_____

(2 x 1) (2)

2.2 Refer to line **6** to **7** on the orthophoto map.



2.2.1 Use the marked-off points below the horizontal axis of the cross-section to complete the cross-section between **6** and **7** above. Some heights have been included to assist you. (4 x 1) (4)

2.2.2 Indicate the position of the Pelgrimsrus farmstead on the completed cross-section in QUESTION 2.2.1. (1 x 1) (1)

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2.2.3 Calculate the vertical exaggeration of the cross-section drawn in QUESTION 2.2.1. Show ALL calculations. Marks will be awarded for calculations.

Formula: $\textbf{Vertical exaggeration} = \frac{\textbf{vertical scale (VS)}}{\textbf{horizontal scale (HS)}}$

_____

_____

_____

_____

_____

_____

(4 x 1) (4)

2.3 Refer to the orthophoto map and the topographical map.

2.3.1 The magnetic declination of the orthophoto map for 1980 is given as 17°50' west of True North. Is the magnetic declination of the orthophoto map bigger or smaller than the magnetic declination indicated on the topographical map?

_____

(1 x 1) (1)

2.3.2 Give a reason for the difference in the magnetic declination between the topographical map and the orthophoto map.

_____

_____

(2 x 1) (2)

2.3.3 Why is it important for a hiker to correct the magnetic declination?

_____

_____

(1 x 1) (1)

[20]

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QUESTION 3: APPLICATION AND INTERPRETATION

3.1 Refer to blocks **E4** and **F3**.

3.1.1 Name the drainage pattern in this area.

_____

(1 x 1) (1)

3.1.2 Refer to the topographical map and explain why the drainage pattern named in QUESTION 3.1.1 developed.

_____

_____

_____

(1 x 2) (2)

3.1.3 Is the drainage density of this area high or low? Give ONE reason for your answer.

Drainage density: _____

Reason: _____

_____

_____

_____

(1 + 2) (3)

3.2 Refer to the farmstead at **O** in block **G2**.

3.2.1 Is the farmstead at **O** a wet-point settlement or a dry-point settlement? Give a reason for your answer.

Answer: _____

Reason: _____

_____

_____

(1 + 2) (3)

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3.2.2 Name and explain ONE human-made factor that influenced the choice of site for the farmstead.

Human-made factor: _____

Explanation: _____

_____

_____

(1 + 2) (3)

3.3 Refer to blocks **G9** and **G10**, which is the rural-urban fringe of Parys.

3.3.1 Name ONE activity/service in block **G9** and/or block **G10** that is found in the rural-urban fringe.

_____

(1 x 1) (1)

3.3.2 Explain why the activity/service named in QUESTION 3.3.1 is located in the rural-urban fringe.

_____

_____

_____

(1 x 2) (2)

3.4 Although West End (**W**) in block **H7** is situated close to the CBD, it experiences much lower average temperatures than expected.

3.4.1 Give and explain ONE reason for the statement above.

Reason: _____

Explanation: _____

_____

_____

(1 + 2) (3)

3.4.2 Describe ONE climatological disadvantage for people living in West End.

_____

_____

_____

(1 x 2) (2)

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3.5 The mapped area receives seasonal rainfall. Give TWO points of evidence in the topographical map to substantiate (support) this statement.

_____

_____

_____

_____

(2 x 1) (2)

3.6 Parys is a popular holiday resort.

3.6.1 Give ONE reason why Parys became a popular holiday destination.

_____

_____

(1 x 1) (1)

3.6.2 Explain the positive impact of Parys as a popular holiday destination on the local economy.

_____

_____

_____

(1 x 2) (2)

[25]

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QUESTION 4: GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

4.1 Parys is located in the Vredefort Crater. Geologists are conducting research and collecting data on an on-going basis.

4.1.1 Is the data that is collected considered to be primary or secondary data?

_____

(1 x 1) (1)

4.1.2 Give a reason for your answer to QUESTION 4.1.1.

_____

_____

_____

(1 x 2) (2)

4.1.3 Explain how remote sensing can further assist the geologists with their research.

_____

_____

_____

_____

(2 x 2) (4)

4.2 Refer to block **J8**. Buffering plays an important role in protecting settlements from being flooded.

4.2.1 Define the term *buffering*.

_____

_____

(1 x 1) (1)

4.2.2 There is no evidence of buffering taking place between the Vaal River and Parys in blocks **G7** and **G8**. Give a reason from the topographical map to support this statement.

_____

_____

(1 x 2) (2)

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4.2.3 Explain why no buffering takes place between the Vaal River and Parys in blocks **G7** and **G8**.

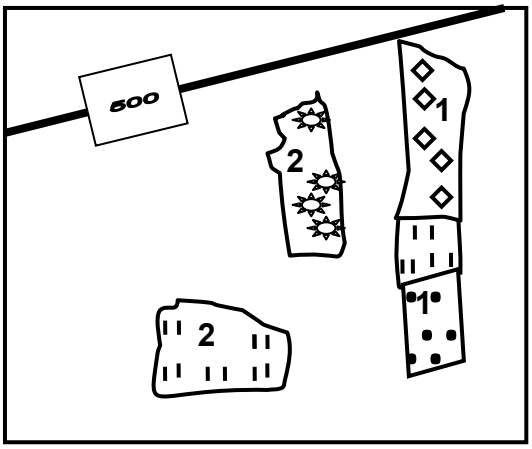
_____

_____

_____

(1 x 2) (2)

4.3 Refer to the rough sketch below, an exaggerated version of block **F8**. (The examiner's sketch of block **F8** is not drawn to scale).



Reference:

1 – Orchards and vineyards
2 – Cultivated lands

4.3.1 NO data standardisation is taking place in the sketch.

Give a reason to substantiate (support) this statement.

_____

_____

(1 x 1) (1)

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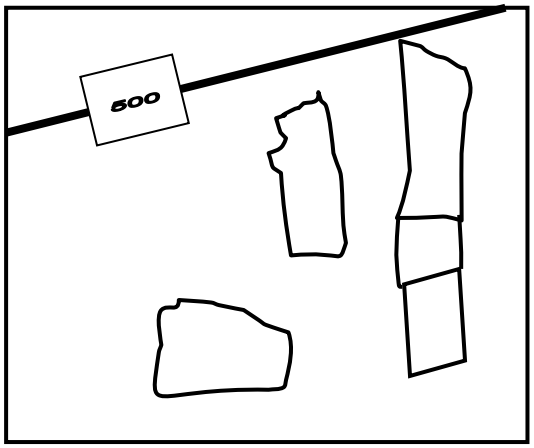
4.3.2 Standardise the data in the sketch below, using the acceptable standardised conventional signs (map symbols) for a 1 : 50 000 topographical map.



(2 x 1) (2)

[15]

TOTAL: 75

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ROUGH WORK AND CALCULATIONS
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GRADE 12

GEOGRAPHY P2

NOVEMBER 2017

MARKING GUIDELINES

MARKS: 75

These marking guidelines consist of 16 pages.

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Aerodrome	Vliegveld
Caravan Park	Karavaanpark
Diggings	Uitgrawings
Golf Course	Gholfbaan
Gap	Poort
Holiday Resort	Vakansieoord
Island	Eiland
Purification Plant	Watersuiweringsaanleg
River	Rivier
Sewage Works	Rioolwerke

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GENERAL INFORMATION ON PARYS

Parys is a town in the Free State in South Africa. It is located on the banks of the Vaal River approximately 115 km south of Johannesburg. The completion of the railway line to Parys in 1905 made Parys suddenly more accessible to the public and this in turn, led to the growth of the town as a holiday resort and industrial centre. Many artists have settled in the town and the variety of new, interesting shops and attractions make it the ideal breakaway from Gauteng and other big centres. Parys lies within the Vredefort Dome World Heritage Site. The Vredefort Crater is the largest verified impact crater on Earth. The Vredefort Dome was added to the list of UNESCO World Heritage Sites for its geological interest.

Coordinates: 26°54'S 27°27'E

[Adapted from http://en.wikipedia.org/wiki/Parys, South Africa, Freestate]

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QUESTION 1: MULTIPLE-CHOICE QUESTIONS

The questions below are based on the 1 : 50 000 topographical map (2627CD PARYS), 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 The major industrial region closest to Parys is the … Industrial Region.

A Port Elizabeth-Uitenhage
B Durban-Pinetown
C Western Cape
D Pretoria-Witwatersrand-Vereeniging

D

1.2 The topographical map northwest of Parys is situated between the following lines of latitude:

A 27°00'S and 27°15'S
B 26°30'S and 26°45'S
C 26°00'S and 27°00'S
D 26°15'S and 26°30'S

B

1.3 The height of the index contour line in block **D5** is … metres.

A 1 500
B 1 400
C 1 600
D 1 530

A

1.4 A human factor limiting further expansion of Parys in a north-westerly direction is the …

A permanent river.
B international boundary.
C provincial boundary.
D steep gradient.

C

1.5 The windpump **K** in block **I2** is situated next to the river, because this area has a … water table.

A high dry season
B high wet season
C low dry season
D low wet season

A/C

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1.6 The feature at 26°49'48"S 27°21'54"E/26°49,8'S 27°21,9'E:

A Hiking trail
B Perennial water
C Cultivated lands
D Secondary road

B

1.7 The location of the woodlands in block **B9** was influenced by the …

A katabatic flow.
B anabatic flow.
C thermal belt.
D aspect of slope.

D

1.8 The section of the Vaal River in the mapped area shows characteristics typical of the …

A middle and lower courses.
B upper course only.
C upper and lower courses.
D lower course only.

A

1.9 The landform at line **4** on the orthophoto map is a …

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

B

1.10 The plots of land in block **F9** have elongated (long and narrow) shapes. The most important reason for this shape is to have access to (the) …

A water.
B fertile soil.
C flat land.
D fuel.

A

1.11 The road at **3** on the orthophoto map is a/an …

A other road.
B arterial road.
C secondary road.
D main road.

C

1.12 The cultivated land at **5** on the orthophoto map can be identified due to its …

A darker tone.
B smooth texture.
C shadow.
D shape.

B/D

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1.13 Refer to the surrounding area at **15** on the orthophoto map. The vertical aerial photograph used to produce the orthophoto map, was taken between …

A 12:00–14:00.
B 14:00–16:00.
C 10:00–12:00.
D 08:00–10:00.

C

1.14 The settlement pattern at **L** in block **D2** is …

A circular.
B linear.
C clustered.
D dispersed.

C

1.15 The natural water purification feature in blocks **J2** and **J3** is a …

A windpump.
B cultivated land.
C marsh and vlei.
D excavation.

C

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

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QUESTION 2: MAP CALCULATIONS AND TECHNIQUES

2.1 Refer to blocks **D3** and **E3**.

2.1.1 Calculate the vertical interval (VI) between **M** and spot height 1 395 in metres. Show ALL calculations. Marks will be awarded for calculations.

VI = 1 500 m – 1 395 m
= 105 m ✓ (1 x 1) (1)

2.1.2 Calculate the horizontal equivalent (HE) between **M** and spot height 1 395 in metres. Show ALL calculations. Marks will be awarded for calculations.

HE = 1.5 ✓ cm x 500 m *[range for measurement 1.4 cm to 1.6 cm]*
= 750 m ✓
Range [700 m to 800 m] (2 x 1) (2)

2.1.3 Using the information in QUESTIONS 2.1.1 and 2.1.2, calculate the average gradient between **M** and spot height 1 395. Show ALL calculations. Marks will be awarded for calculations.

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

G = $\frac{105}{750}$ ✓ *(700 to 800)* *(÷ 105)* *(÷ 105)*

[Give ONE mark for correct substitution even if VI and HE are calculated incorrectly]
= $\frac{1}{7.14}$ / 1 : 7.14/1 in 7.14 ✓

Range [1 : 6.66 – 1 : 7.61] (2 x 1) (2)

2.1.4 Would the gradient calculated in QUESTION 2.1.3 result in a low or high stream velocity? Give a reason for your answer.

Answer: *High velocity* ✓
Reason: *The average gradient is steep therefore the water will flow faster* ✓
The slope decreases very quickly over a short distance ✓
Over 6.66 m the slope decreases by 1 m ✓
[Any ONE] (2 x 1) (2)

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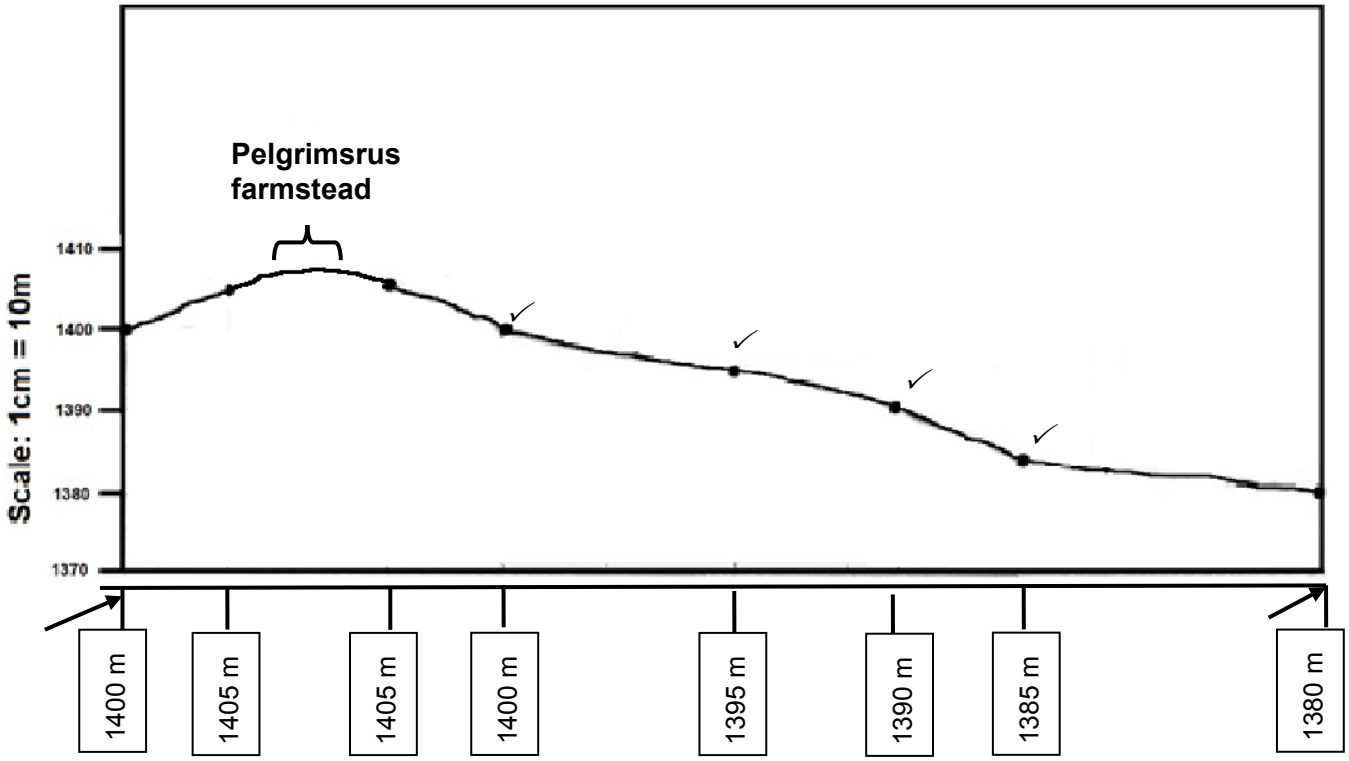
2.2 Refer to the line **6** to **7** on the orthophoto map.



2.2.1 Use the marked-off points below the horizontal axis of the cross-section to complete the cross-section between **6** and **7** above. Some heights have been included to assist you. (4 x 1) (4)

2.2.2 Indicate the position of the Pelgrimsrus farmstead on the completed cross-section in QUESTION 2.2.1. (1 x 1) (1)

2.2.3 Calculate the vertical exaggeration of the cross-section drawn in QUESTION 2.2.1. Show ALL calculations. Marks will be awarded for calculations.

Formula: **Vertical exaggeration** $= \frac{\textbf{vertical scale (VS)}}{\textbf{horizontal scale (HS)}}$

- 1 : 1 000 ✓ (substitution)
- 1 : 10 000 ✓ (substitution)
- $\frac{1}{1\,000}$
- $\frac{1}{10\,000}$

Any ONE

$\frac{1}{1\,000}$ X $\frac{10\,000}{1}$ ✓

10 times ✓ (4 x 1) (4)

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2.3 Refer to the orthophoto map and the topographic map.

2.3.1 The magnetic declination of the orthophoto map for 1980 is given as 17°50' west of True North. Is the magnetic declination of the orthophoto map bigger or smaller than the magnetic declination indicated on the topographical map?

Smaller ✓ (1 x 1) (1)

2.3.2 Give a reason for the difference in the magnetic declination between the topographical map and orthophoto map.

The orthophoto map is older (1980) than the topographic map (2006)✓✓
The topographic map (2006) is newer than the orthophoto map (1980) ✓✓
The magnetic declination is westwards, therefore the newer map would have a greater magnetic declination ✓✓
The mean magnetic declination is 18°52'W of true north (2011) on the topographic map ✓✓ (1 x 2) (2)

2.3.3 Why is it important for a hiker to correct the magnetic declination?

The hiker won't get lost/If not corrected hiker will get lost ✓
The hiker will get to his destination/If not corrected hiker will not reach destination ✓
The hiker will hike in the accurate (correct) direction/If not corrected the hiker will hike in the wrong direction ✓
The hiker will be able to orientate the map according to true north/If not corrected the hiker cannot orientate map with true north ✓
[Any ONE] (1 x 1) (1)
[20]

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QUESTION 3: APPLICATION AND INTERPRETATION

3.1 Refer to blocks **E4** and **F3**.

3.1.1 Name the drainage pattern in this area.

Trellis ✓ (1 x 1) (1)

3.1.2 Refer to the topographical map and explain why the drainage pattern named in QUESTION 3.1.1 developed.

The river is found on valley floor and is surrounded by steep slopes, which results in the tributaries flowing down the slopes and meeting the main river at right/90º angles ✓✓
Developed on landscape with inclined sedimentary rock/alternate layers of hard and soft rock ✓✓ (1 x 2) (2)

3.1.3 Is the drainage density of this area high or low? Give ONE reason for your answer.

Drainage density: *Low* ✓

Reason: *Very few streams in the area* ✓✓
Non-perennial streams ✓✓
The under lying rocks could be ~~im~~permeable ✓✓
Low rainfall ✓✓
Soil could be dry therefore water can infiltrate ✓✓
[Any ONE reason] (1 + 2) (3)

3.2 Refer to the farmstead at **O** in block **G2**.

3.2.1 Is the farmstead at **O** a wet-point or a dry-point settlement? Give a reason for your answer.

Answer: *Dry-point settlement* ✓

Reason: *Settlement is built on higher ground to avoid flooding* ✓✓
Settlement is built away from the river to avoid flooding ✓✓
Built above flood line/flood contour ✓✓
[Any ONE reason] (1 + 2) (3)

3.2.2 Name and explain ONE human-made factor that influenced the choice of site for the farmstead.

Human-made factor: *Transport/road/secondary road* ✓

Explanation: *It is situated close to the road for transportation of crops/increased accessibility to the farmstead* ✓✓
(1 + 2) (3)

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3.3 Refer to blocks **G9** and **G10,** which is the rural-urban fringe of Parys.

3.3.1 Name ONE activity/service in block **G9** and/or block **G10** that is found in the rural-urban fringe.

Golf course ✓
Purification plant ✓
Parys Aerodrome/airfield/landing strip/runway ✓
Hospital ✓
Diggings/quarrying ✓
Hiking trail ✓
[Any ONE] (1 x 1) (1)

3.3.2 Explain why the activity/service named in QUESTION 3.3.1 is located in the rural-urban fringe.

Golf course: Availability of space for development ✓✓
Away from built area, therefore there is less noise, which is ideal for playing golf ✓✓
Flat/cheap land ✓✓
Purification plant: Creates strong/bad odours therefore it is away from the built up area ✓✓
Flat/cheap land ✓✓
Room for expansion ✓✓
Parys Aerodrome: Availability of space for development ✓✓
Aerodrome creates a lot of noise therefore it is away from the built up area ✓✓
To avoid possible serious accidents in Parys ✓✓
Flat/cheap land ✓✓
Hospital: Require an area which is not noisy ✓✓
Accessible for rural communities ✓✓
Flat/cheap land ✓✓
Room for expansion ✓✓
Diggings: In undeveloped area therefore safe to have diggings ✓✓
In undeveloped area to source raw materials for buildings and infrastructure developed ✓✓
Hiking trail: Aesthetic appeal next to spruit/stream ✓✓
[Any ONE based on answer to QUESTION 3.3.1] (1 x 2) (2)

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3.4 Although West End (**W**), block **H7**, is situated close to the CBD, it experiences much lower average temperatures than expected.

3.4.1 Give and explain ONE reason for the statement above.

Reason: (*More) vegetation/greenbelt* ✓

Explanation: *Vegetation absorbs carbon dioxide and reduces temperature* ✓✓
Creates shaded areas lowering temperatures ✓✓
Evapotranspiration lowers temperatures ✓✓

OR

Reason: (*Close to) Vaal River/water* ✓

Explanation: *The river has a moderating effect on the temperature range and also lowers the temperature* ✓✓
Cool breeze coming from the river ✓✓

OR

Reason: (*Low) building density* ✓

Explanation: *Less concrete, steel and tar which absorbs heat thus lower temperatures* ✓✓
Heat not trapped between buildings ✓✓
More natural surfaces which lowers temperatures ✓✓
Lower building density allows for more ventilation ✓✓
[Any ONE] (1 + 2) (3)

3.4.2 Describe ONE climatological disadvantage for people living in West End.

West End could get very cold/frost pocket especially during winter reducing human comfort conditions/katabatic winds that lowers temperatures ✓✓
The area could experience fog which could reduce visibility ✓✓
Due to increased rainfall/thundershowers flooding may occur ✓✓
[Any ONE] (1 x 2) (2)

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3.5 The mapped area receives seasonal rainfall. Give TWO points of evidence from the topographic map to substantiate (support) this statement.

Area is dominated by non-perennial rivers ✓
There are dams ✓
There are many windpumps ✓
There are furrows ✓
There are reservoirs ✓
Irrigation being administered ✓
[Any TWO] (2 x 1) (2)

3.6 Parys is a popular holiday resort.

3.6.1 Give ONE reason why Parys became a popular holiday destination.

It is built on the Vredefort Crater which is the largest verified impact crater on Earth ✓
The Vredefort Dome is a World Heritage Site ✓
It is situated along the Vaal River ✓
There are a lot of recreational activities (Candidates can give examples) ✓
Parys is accessible/railway line from Gauteng and other large centres ✓
Many artists settled in the town ✓
Natural scenery/undulating land/aesthetic appeal ✓
Interesting shops/attractions ✓
[Any ONE] (1 x 1) (1)

3.6.2 Explain the positive impact of Parys as a popular holiday destination on the local economy.

It will improve the local economy as there will be more investment ✓✓
Creating more job opportunities/less unemployment ✓✓
Improved transport/railway line for the transportation of goods and people ✓✓
Increased tourism will which benefit local business ✓✓
Local people earn more money which improve their standard of living and buying power ✓✓
Products of local artists supported ✓✓
Farming benefits to provide for the local hospitality industry ✓✓
[Any ONE] (1 x 2) (2)

[25]

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QUESTION 4: GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

4.1 Parys is located in the Vredefort Crater. Geologists are conducting research and collecting data on an on-going basis.

4.1.1 Is the data that is collected considered to be primary or secondary data?

Primary data ✓ (1 x 1) (1)

4.1.2 Give a reason for your answer to QUESTION 4.1.1.

It is first-hand data and was obtained directly from the source ✓✓
Data has not been processed yet/still in raw format ✓✓
It is only data from fieldwork ✓✓

(1 x 2) (2)

4.1.3 Explain how remote sensing can further assist the geologists with their research.

Gives an overview of the entire study area ✓✓
Allows geologists to check and verify changes over time ✓✓
Researchers do not have to be at the site to obtain data ✓✓
Weather conditions have limited influence on the obtaining of data ✓✓
Up to date data is easily and readily available✓✓
Geologists will have access to data that could not be easily reached (obtained) by human beings ✓✓
Data can be collected quickly ✓✓
Safer to collect data from inaccessible places ✓✓
Continuous collection of data ✓✓
Assists with more accurate geological mapping ✓✓
Improves spectral resolution of geological mapping ✓✓
Combining different datasets of geological layers ✓✓
Studying changes in geological environments ✓✓
Collection of data is reliable ✓✓
[Any TWO] (2 x 2) (4)

4.2 Buffering plays an important role in protecting settlements from being flooded.

4.2.1 Define the term *buffering*.

It is the demarcation/boundary/delineation/spatial distance of an area around a feature ✓
[Concept] (1 x 1) (1)

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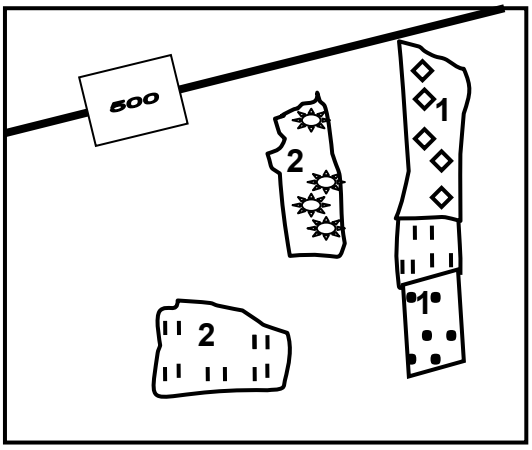
4.2.2 There is no evidence of buffering taking place between the Vaal River and Parys in blocks **G7** and **G8**. Give a reason from the topographical map to support this statement.

The Vaal River is right next to the built up area ✓✓
There is no demarcated area between the Vaal River and Parys ✓✓
Building took place on the flood plain ✓✓
Building was done below the flood line ✓✓
[Any ONE] (1 x 2) (2)

4.2.3 Explain why no buffering takes place between the Vaal River and Parys in blocks **G7** and **G8**.

The area is used for recreation/golf course/caravan park ✓✓
Located close to the river for aesthetic appeal ✓✓
No proper planning ✓✓
Less chance of flooding ✓✓
Easier and cheaper to build on the flood plain ✓✓
Easy access to the river ✓✓
[Any ONE] (1 x 2) (2)

4.3 Refer to the rough sketch below, an exaggerated version of block **F8**. (The examiner's sketch of block **F8** is not drawn to scale).



Reference:

1 – Orchards and vineyards
2 – Cultivated lands

4.3.1 NO data standardisation is taking place in the sketch.

Give a reason to substantiate (support) this statement.

Different symbols are used to show the same activity/feature/land-use on the sketch/No pre-determined agreed format ✓ (1 x 1) (1)

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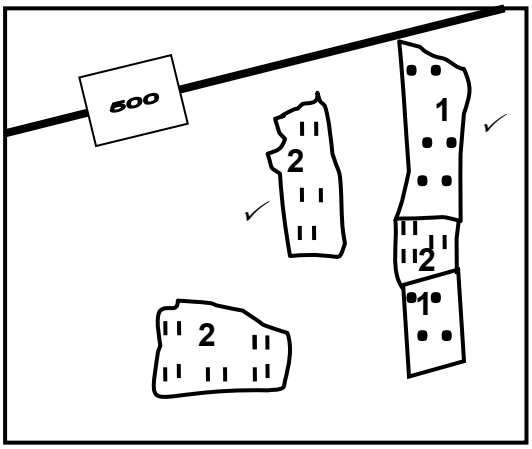
4.3.2 Standardise the data on the sketch below using the acceptable, standardised conventional signs (map symbols) for a 1 : 50 000 topographic map.



All 1's MUST be the same
All 2's must be the same

(2 x 1) (2)
[15]

TOTAL: 75

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