GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

PREPARATORY EXAMINATION

2016

MEMORANDUM

GEOGRAPHY (SECOND PAPER) (10782)

11 pages

GAUTENG DEPARTMENT OF EDUCATION

PREPARATORY EXAMINATION – 2016

GEOGRAPHY
(Second Paper)

MEMORANDUM

QUESTION 1: MULTIPLE-CHOICE QUESTIONS

The questions below are based on the 1:50 000 topographic map 2829 DB LADYSMITH, 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 Ladysmith is situated in …

A Mpumalanga.
B the Free State Province. ✓
C KwaZulu-Natal.
D the Eastern Cape.

C

1.2 The map index west of Ladysmith is …

A 2829DC.
B 2829DA. ✓
C 2829BC.
D 2829DD.

B

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

A 5
B 10 ✓
C 15
D 20

A

1.4 The grid reference of the Trigonometrical Station 98 in block **H10** is …

A 28°37'55"S 29°54'58"E / 28°37.9'S 29°54.9'E.
B 28°37'56"S 29°54'30"E / 28°37.9'S 29°54.5'E. ✓
C 28°37'06"S 29°54'42"E / 28°37.1'S 29°54.7'E.
D 28°37'56"S 29°54'58"E / 28°37.9'S 29°54.9'E.

C

1.5 The actual distance from the Trigonometrical Station 330 in block **D7** to the Trigonometrical Station 117 in block **A10** on the topographic map is … km.

A 6,30
B 13,90 ✓
C 6,80
D 13,6

C

1.6 The land-use zone marked **1** on the orthophoto map is a …

A low income residential area.
B heavy industrial area.
C high income residential area.
D light industrial area.

✓ **B**

1.7 The contour lines marked **K** (in block **I2)** on the topographic map illustrates a …

A spur.
B valley.
C neck.
D hill.

✓ **C**

1.8 The service rendered at **7** on the orthophoto map is a …

A church.
B school.
C hospital.
D hotel.

✓ **B**

1.9 The recreational area marked **2** on the orthophoto map is a …

A casino.
B swimming pool.
C park.
D stadium.

✓ **D**

1.10 The stream channel pattern labelled **M** (in block **G7)** on the topographic map is a … pattern.

A meandering
B rock-controlled
C braided
D trellis

✓ **A**

1.11 Identify the drainage pattern labelled **N** (in block **G1**) on the topographic map.

A Dendritic
B Trellis
C Deranged
D Parallel

✓ **A**

1.12 The underlying rock structure at **N** (in block **G1**) on the topographic map is made up of …

A rocks of uniform resistance.
B an alternate layer of hard and soft rock.
C jointed igneous rocks.
D folded rocks.

✓ **A**

1.13 Ladysmith is an example of a / an … town.

A central place
B satellite
C educational
D industrial

✓ **A**

1.14 The structural landform at **P** (in block **D7**) on the topographic map is a …

A mesa.
B butte.
C ridge.
D cuesta.

✓ **B**

1.15 The type and pattern of the settlement at **Q** (in block **G9**) on the topographic map is a/an …

A urban nucleated settlement.
B urban dispersed settlement.
C rural dispersed settlement.
D rural nucleated settlement.

✓ **D**

(15x1) (15)

[15]

QUESTION 2: MAP CALCULATIONS AND TECHNIQUES

2.1 Calculate the magnetic bearing from spot height 995 in block **J8** to Trigonometrical Station 125 in block **H8** on the topographic map for the present year.

Formula: Magnetic bearing = Magnetic declination + True bearing

True bearing: 9° (8° - 10°) ✓
Difference in years: 2016 – 2001 = 15 years ✓
Mean annual change: 8' W

Total change: 15 years x 8' W
= 120' W
= 2° W ✓

Magnetic declination for 2016: 21°03' + 2°W ✓
= 23°03'W (of True North) ✓

Magnetic bearing: = 23°03' + 9° [RANGE] (7° – 9°)
32°03' ✓ [RANGE] (31°03' – 33°03')

(6x1) (6)

2.2 Calculate the area covered by the orthophoto map on the topographic map in kilometres. (Use the area highlighted in black on the topographic map.) Show all calculations. Indicate the correct unit in your final answer.

Formula: Area = length x breadth

= (9.8 cm x 0.5 km) ✓ (7.4 cm x 0.5 km) ✓
(Range: 9.7 – 9.9 cm / 7.3 – 7.5 cm)

= 4.9 km ✓ x 3.7 km ✓ (Range: 4.85 km – 4.95 km / 3.65 km – 3.75 km)

= 18.13 km² ✓
(Range: 17.7 km² – 18.5 km²) (5x1) (5)

2.3 Locate points **3** and **4** on the orthophoto map.

2.3.1 Calculate the average gradient between point **3** and point **4** on the orthophoto map. Show ALL calculations. Marks will be awarded for calculations.

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

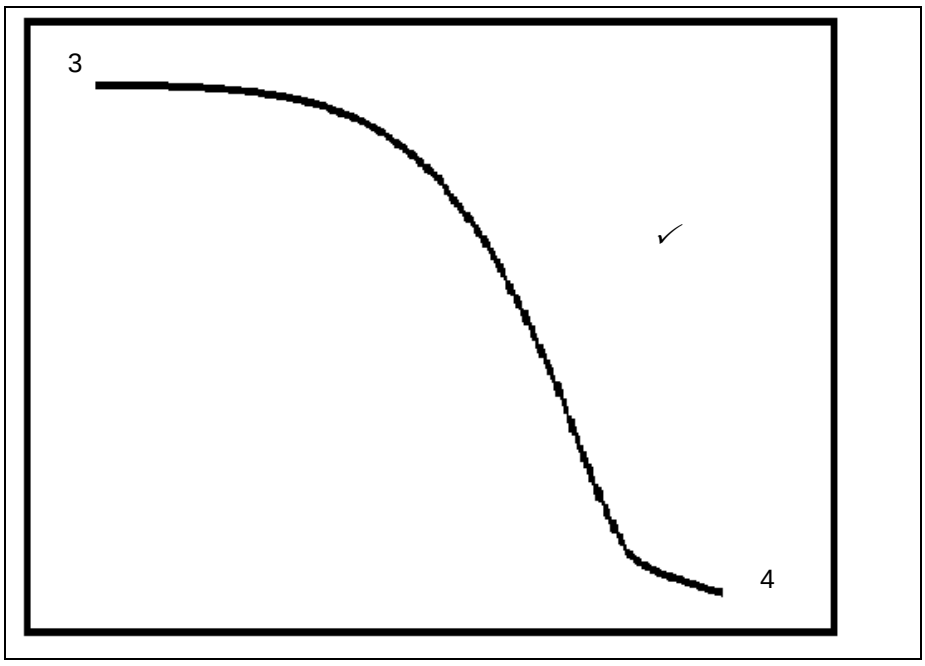
VI = 1090 m – 1020 m
= 70 m ✓

HE = 3.6 cm x 100 m (Range 3.5 cm - 3.7 cm)
= 360 m ✓

Gradient = $\frac{70}{360}$ ✓ ✓
= 1: 5.14 m ✓

(Range: 5 – 5.29) (5x1) (5)

2.3.2 Draw a free-hand cross-section sketch from point **3** to point **4** in the box below.



(1x1) (1)

2.3.3 State the shape of the slope between points **3** and **4** on the orthophoto map.

Convex ✓ (1x1) (1)

2.3.4 Determine the intervisibility from point **3** to point **4**. Give a reason for your answer.

Answer: *Not visible* ✓

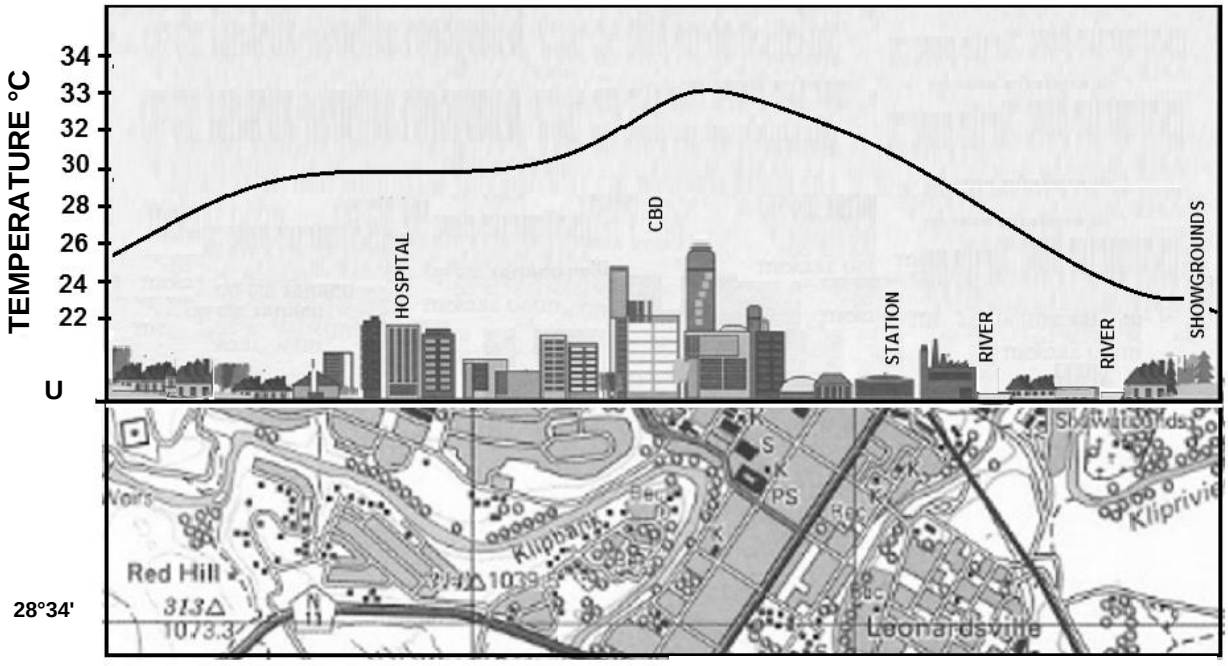
Reason: *The shape of the slope forms an obstacle between the two places* ✓ (2x1) (2)

[20]

QUESTION 3: APPLICATION AND INTERPRETATION

3.1 Refer to FIGURE 3.1 below showing the urban heat island between points **U** and **V** on the topographic map.

FIGURE 3.1: URBAN HEAT ISLAND OF LADYSMITH



Examiner's own sketch

3.1.1 Define the term *urban heat island*.

An urban area of higher temperature surrounded by a rural area of lower temperature. ✓
(Concept) (1x1) (1)

3.1.2 Refer to point **R** in block **D2** on the topographic map.

(a) What is the temperature at **R**?

32 / 33 °C ✓ (1x1) (1)

(b) Describe ONE factor at point **R** that could influence the development of the urban heat island.

Artificial heat sources generates more heat ✓✓
Building density retains heat longer ✓✓
Materials used in buildings and infrastructure absorb and reflect heat which results in extensive radiation of heat and a warmer environment. ✓✓
[Any ONE] (1x2) (2)

3.1.3 Explain how the green belts at **S** (in block **D3**) on the topographic map will impact on the development of the heat island and give a reason for your answer.

Answer: *Less well developed heat island* ✓✓
Heat island will be reduced / closer to the earth's surface ✓✓
[Any ONE]

Reason: *Vegetation absorbs heat for photosynthesis* ✓✓
Reduces temperature ✓✓
[Any ONE] (2x2) (4)

3.2 Refer to blocks **E5** and **E6** on the topographic map.

3.2.1 Non-perennial rivers flowing on the east side of Steadville result in flash floods which could have a devastating effect on the settlement of Steadville in Block **E5**. State TWO factors evident on the topographic map, which could contribute to this devastating effect.

No vegetation leads to flash floods and mudslides ✓
Situated on flat land and water will spread ✓
Steep gradient leads to more run-off and less infiltration ✓
Erosion gullies can impact floods ✓
[Any TWO] (2x1) (2)

3.2.2 Suggest TWO possible solutions that the people living in Steadville could implement to prevent or minimise this problem.

Plant more vegetation in the upper regions. ✓✓
Build small catchment dams in the high lying areas. ✓✓
Rehabilitation of erosion gullies ✓✓
[Any TWO] (2x2) (4)

3.3 Refer to residential areas **5** and **6** on the orthophoto map.

3.3.1 Name the street patterns found in residential areas **5** and **6**.

Area **5**: *Planned Irregular/irregular* ✓

Area **6**: *Grid iron* ✓ (2x1) (2)

3.3.2 Which street pattern, **5** or **6**, will reduce traffic congestion? Give a reason for your answer.

Answer: *5 / Planned Irregular/irregular* ✓

Reason: *Fewer robots* ✓✓
Fewer streets intersect one another ✓✓
[Any ONE] (1 + 2) (3)

3.3.3 Ladysmith is a fast growing town but urbanisation is hindered in the South West. Identify ONE physical factor that hinders the expansion of the town's boundaries to the South West.

The steep gradient ✓
The tributaries of the river ✓
[Any ONE] (1x1) (1)

3.4 3.4.1 Identify the tertiary land-use indicated at **T** (in block **E4**) on the topographic map.

Sewage works ✓ (1x1) (1)

3.4.2 Explain how poor maintenance of the land-use at **T** could influence the water quality of the Kliprivier in block **E4**.

Decrease in water quality because spillage will cause pollution ✓✓
(1x2) (2)

3.4.3 Explain why this tertiary activity developed in the rural-urban fringe.

It gives off a bad odour and is therefore situated away from the built-up area ✓✓
Open land / cheap land✓✓
[Any ONE] (1x2) (2)

[25]

QUESTION 4: GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

4.1 Due to the Kliprivier flowing through Ladysmith, flooding is a real possibility. Data layering assists in analysing the flood risk in Ladysmith.

4.1.1 What is *data layering?*

The combination of different data layers used in the studies of specific problems identified in an area ✓
(Concept) (1x1) (1)

4.1.2 Identify THREE data layers that can assist you in analysing the flood risk along the bank of the Kliprivier in blocks **D1** and **D2**.

Topography / relief ✓/ gentle slope ✓
Urban development ✓/ built up area ✓
Drainage ✓/ floodplain ✓/ meandering river ✓
Infrastructure ✓/ roads✓
[Any THREE] (3x1) (3)

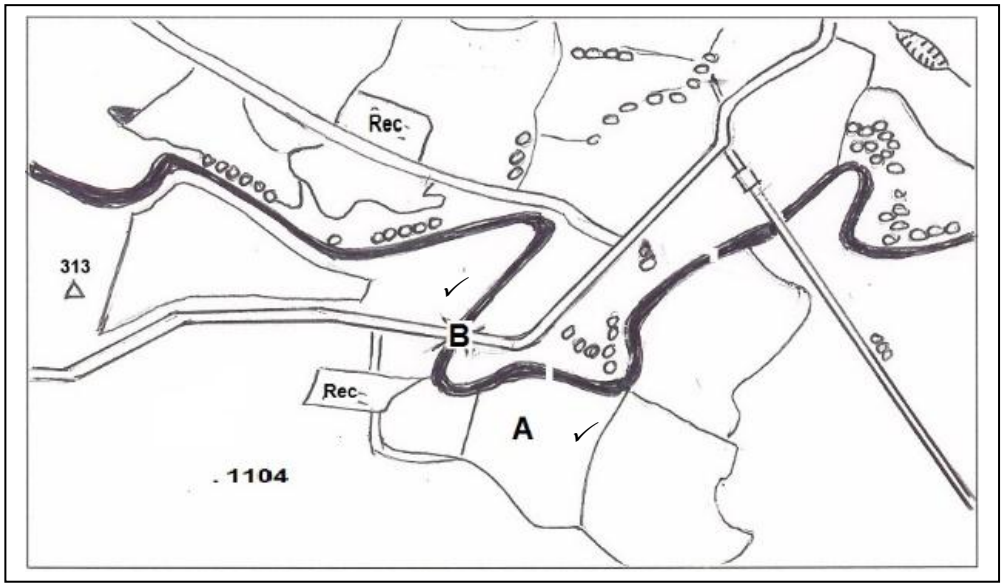
4.1.3 State ONE GIS process that you would use to limit the risk of floods.

Buffering ✓ (1x1) (1)

4.1.4 Explain how you would use the process mentioned in Question 4.1.3 to reduce the impact of floods.

Demarcation of the area around the river where there is a risk of flooding ✓✓
No developments are allowed in this area. ✓✓
Vegetate the area. ✓✓
[Any TWO] (2x2) (4)

4.2 The following is a freehand sketch map of the area covered by the orthophoto map.



Examiner's own sketch (Sketch is not drawn to scale.)

4.2.1 Use both the orthophoto and topographic map and label the following features ON THE SKETCH MAP by using the symbols in the key supplied.

Key: A – Rose Park
B – Wagon Bridge (2x1) (2)

4.2.2 State the spatial position of Rose Park from Wagon Bridge.

South East / *South South East* ✓ (1x1) (1)

4.2.3 The topographic map was used to draw the sketch map. It is not possible to identify the density of the buildings. However, when using the orthophoto map, we can identify the density of the buildings.

(a) An orthophoto map consist of pixels. What type of data is a pixel?

Raster ✓ (1x1) (1)

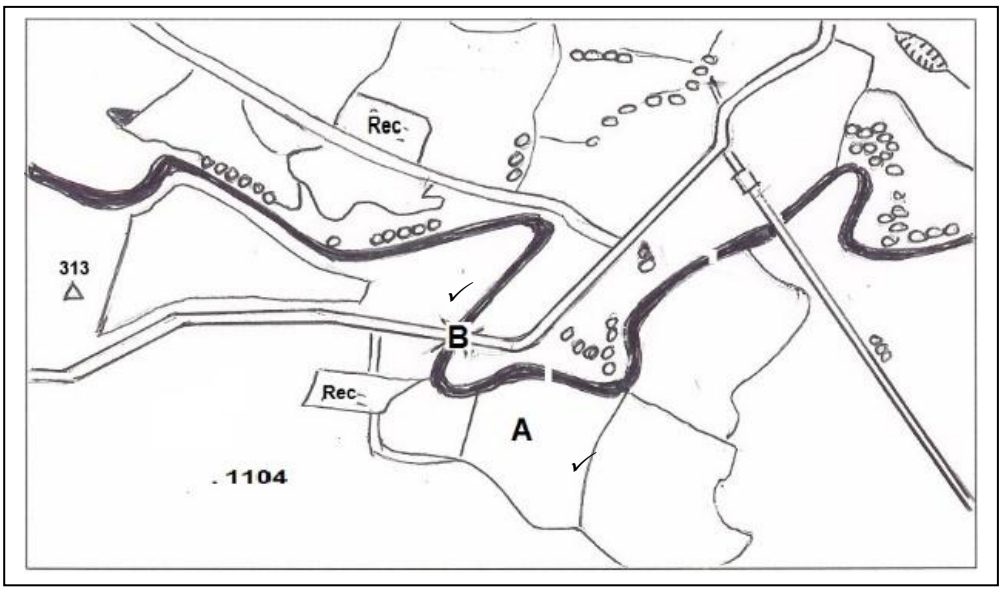
(b) Explain how this type of data can assist you in identifying the density of the buildings.

The image is clear / image has a high resolution. ✓✓
It's a photograph and the distance between the buildings can be clearly seen. ✓✓
[Any ONE] (1x2) (2)

[15]

TOTAL: 75

4.2 Die volgende is ’n vryhandsketskaart van die gebied wat deur die ortofotokaart gedek word.



Eksaminator se eie skets (Skets is nie volgens skaal geteken nie.)

4.2.1 Gebruik beide die ortofotokaart en topografiese kaart en dui die volgende kenmerke OP DIE SKETSKAART aan deur gebruik te maak van die simbole wat in die sleutel voorsien is.

Sleutel: A – Rose Park
B – Wagon Bridge (2x1) (2)

4.2.2 Gee die ruimtelike ligging (posisie) van Rose Park vanaf Wagon Bridge.

Suidoos / Suid-suidoos ✓ (1x1) (1)

4.2.3 Die topografiese kaart is gebruik om die sketskaart te teken. Dit is nie moontlik om die gebou-digtheid te identifiseer nie. Die digtheid van die geboue kan egter geïdentifiseer word as die ortofotokaart gebruik word.

(a) ’n Ortofotokaart bestaan uit selle. Watter tipe data is ’n sel (piksel) ?

Rastar✓ (1x1) (1)

(b) Verduidelik hoe hierdie tipe data jou kan help om die gebou-digtheid te identifiseer.

Die beeld is duidelik / beeld het ’n hoë resolusie✓✓
Dit is ’n foto en die afstand tussen die geboue kan duidelik gesien word✓✓
[Enige EEN] (1x2) (2)

[15]

TOTAAL: [75]

3.4.3 Verduidelik hoekom hierdie tersiêre aktiwiteit in die landelike-stedelike oorgangsone ontwikkel.

Dit veroorsaak slegte reuke, daarom word dit weg van beboude gebied geplaas✓✓
Oop grond / goedkoop grond✓✓
[Enige EEN] (1x2) (2)

[25]

VRAAG 4: GEOGRAFIESE INLIGTINGSTELSEL (GIS)

4.1 As gevolg van die Kliprivier wat deur Ladysmith vloei is vloede 'n groot moontlikheid. Data-oorlegging help om die vloedrisiko in Ladysmith te analiseer.

4.1.1 Wat is *data-oorlegging?*

Die kombinasie van verskillende datalae wat in die studie van 'n spesifieke probleem in die omgewing gebruik word ✓
(Konsep) (1x1) (1)

4.1.2 Identifiseer DRIE datalae wat jou kan help om die vloedrisiko langs die Kliprivieroewer in blok **D1** en blok **D2** te analiseer.

Topografie / reliëf ✓ */ geleidelike helling* ✓
Stedelike ontwikkeling ✓ */ beboude gebied*✓
Dreinering ✓*/ vloedvlaktes*✓*/ meanders rivier*✓
Infrastruktuur ✓*/ paaie* ✓
[Enige DRIE] (3x1) (3)

4.1.3 Noem EEN GIS-proses wat jy sal gebruik om die risiko van vloede te verminder.

Buffersonering / bufferwerking✓ (1x1) (1)

4.1.4 Verduidelik hoe jy die proses genoem in Vraag 4.1.3 sal gebruik om die invloed van vloede te verminder.

Afbakening van die gebied rondom die rivier waar daar moontlik 'n vloed kan voorkom✓✓
Geen ontwikkeling in die afgebakende gebied nie✓✓
Plant plantegroei in die gebied✓✓
[Enige TWEE] (2x2) (4)

3.2.2 Stel TWEE moontlike oplossings voor wat die mense wat in Steadville bly kan implementeer om die probleem te voorkom of te verminder.

Plant meer plantegroei in die hoogliggende gebiede ✓✓
Bou klein opgaardamme in die hoogliggende gebiede ✓✓
Rehabilitasie van erosieslote ✓✓
[Enige TWEE]

(2x2) (4)

3.3 Verwys na residensiële gebied **5** en **6** op die ortofotokaart.

3.3.1 Benoem die straatpatrone wat in residensiële gebiede **5** en **6** aangetref word.

Gebied **5**: *Beplande Onreëlmatige / onreëlmatige* ✓

Gebied **6**: *Rooster* ✓

(2x1) (2)

3.3.2 Watter straatpatroon, **5** of **6**, sal verkeersopeenhopings verminder? Gee 'n rede vir jou antwoord.

Antwoord: *5 / Beplande Onreëlmatige/onreëlmatige* ✓

Rede: *Minder verkeersligte* ✓✓
Minder straatkruisings ✓✓
[Enige EEN]

(1 + 2) (3)

3.3.3 Ladysmith is 'n vinnig groeiende dorp maar verstedeliking word in die Suidweste verhinder. Identifiseer EEN fisiese faktor wat die uitbreiding van die dorp se grense na die Suidweste verhinder.

Die steil gradiënt ✓
Die sytakke van die rivier ✓
[Enige EEN] (1x1) (1)

3.4 3.4.1 Identifiseer die tersiêre grondgebruik wat by **T** (in blok **E4**) op die topografiese kaart aangedui word.

Rioolaanleg ✓ (1x1) (1)

3.4.2 Verduidelik hoe swak onderhoud van die grondgebruik by **T** die waterkwaliteit van die Kliprivier in blok **E4** kan beïnvloed.

Afname in waterkwaliteit omdat die oorloop besoedeling sal veroorsaak ✓✓

(1x2) (2)

3.1.2 Verwys na punt **R** in blok **D2** op die topografiese kaart.

(a) Wat is die temperatuur by **R**?

32 / 33 °C ✓ (1x1) (1)

(b) Verduidelik EEN faktor by punt **R** wat die ontwikkeling van die stedelike hitte-eiland kan beïnvloed.

Kunsmatige hitte bronne genereer meer hitte ✓✓
Geboudigtheid behou die hitte langer ✓✓
Materiaal wat in geboue en infrastruktuur gebruik word absorbeer en reflekteer hitte wat intensiewe radiasie en 'n warmer omgewing tot gevolg het. ✓✓
[Enige EEN] (1x2) (2)

3.1.3 Verduidelik hoe die groengordels by **S** (in blok **D3**) op die topografiese kaart die ontwikkeling van die hitte-eiland sal beïnvloed en gee 'n rede vir jou antwoord.

Antwoord: *Swak ontwikkelde hitte-eiland* ✓✓
Hitte-eiland sal verklein / nader aan die oppervlakte wees ✓✓ [Enige EEN]

Rede: *Plantegroei absorbeer hitte vir fotosintese* ✓✓
Verlaag temperatuur ✓✓
[Enige EEN]

(2x2) (4)

3.2 Verwys na blok **E5** en **E6** op die topografiese kaart.

3.2.1 Nie-standhoudende riviere wat aan die oostekant van Steadville vloei en blitsvloede veroorsaak kan 'n verwoestende effek op die Steadville nedersetting in blok **E5** hê. Noem TWEE faktore sigbaar op die topografiese kaart, wat tot die verwoestende effek kan aanleiding gee.

Afwesigheid van plantegroei veroorsaak blitsvloede en modderstortings ✓
Plat oppervlakte veroorsaak water om te versprei ✓
Steil gradiënt veroorsaak meer afloop en minder infiltrasie ✓
Erosieslote kan vloede veroorsaak ✓
[Enige TWEE]

(2x1) (2)

2.3.4 Bepaal die intersigbaarheid vanaf punt **3** na punt **4**. Gee 'n rede vir jou antwoord.

Antwoord*: Nie sigbaar* ✓

Rede: *Die helling vorm 'n hindernis tussen die twee plekke* ✓

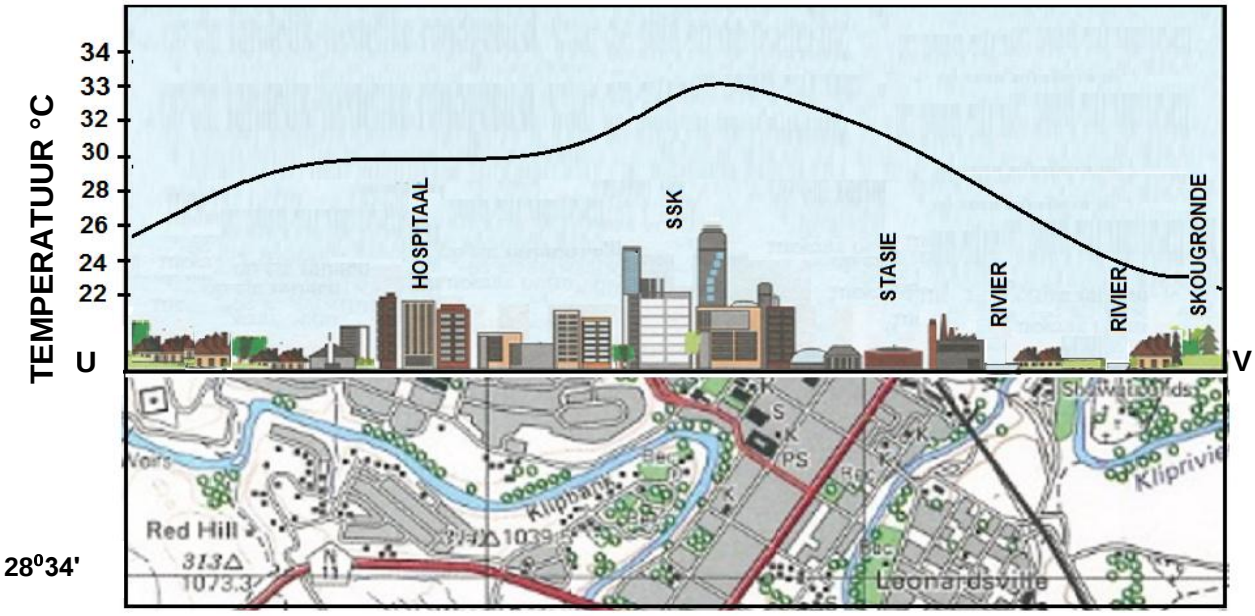
(2x1) (2)

[20]

VRAAG 3: TOEPASSING EN INTERPRETASIE

3.1 Verwys na FIGUUR 3.1 hieronder wat die stedelike hitte-eiland tussen punt **U** en **V** op die topografiese kaart aantoon.

FIGUUR 3.1: STEDELIKE HITTE-EILAND VAN LADYSMITH



Eksaminator se eie skets

3.1.1 Definieer die term *stedelike hitte-eiland*.

'n Stedelike gebied met hoë temperature omring deur landelike gebied met laer temperature. ✓
(Konsep) (1x1) (1)

2.3 Vind punt **3** en **4** op die ortofotokaart.

2.3.1 Bereken die gemiddelde gradiënt tussen punt **3** en punt **4** op die ortofotokaart. Toon ALLE berekeninge. Punte sal vir berekeninge toegeken word.

Formule: Gradiënt $= \frac{\text{vertikale interval (VI)}}{\text{horisontale ekwivalent (HE)}}$

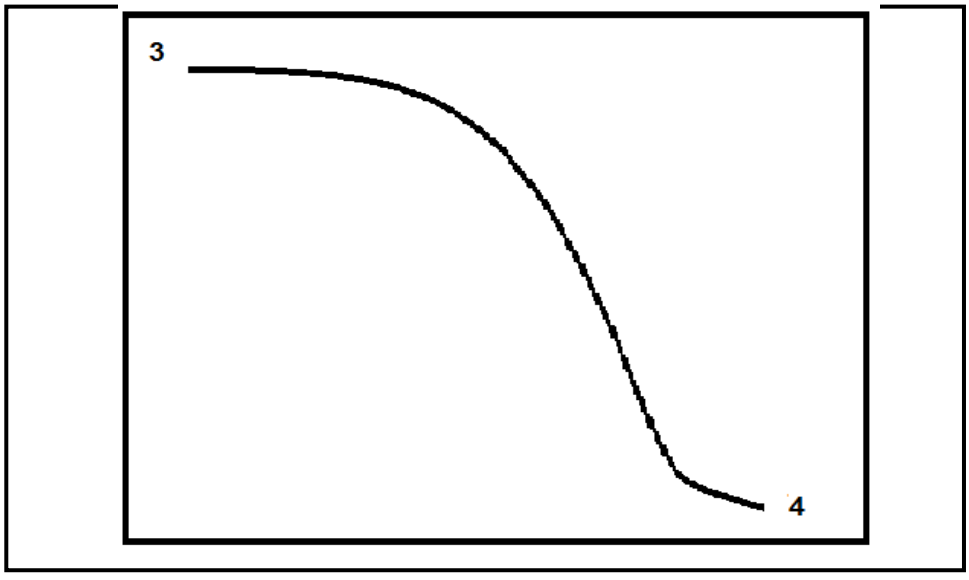
VI = 1090 m – 1020 m
= 70 m ✓

HE = 3.6 cm x 100 m (Speling 3.5 cm - 3.7 cm)
= 360 m ✓

Gradiënt = $\frac{70}{360}$ ✓ ✓
= 1: 5.14 m ✓

(Speling: 5 – 5.29) (5x1) (5)

2.3.2 Teken 'n vryhand deursneeskets vanaf punt **3** na punt **4** in die blok hieronder.



(1x1) (1)

2.3.3 Noem die vorm van die helling wat tussen punt **3** en **4** op die ortofotokaart voorkom.

Konveks ✓

(1x1) (1)

VRAAG 2: KAARTBEREKENINGE EN -TEGNIEKE

2.1 Bereken die magnetiese peiling vanaf punthoogte 995 in blok **J8** na Trigonometriese Baken 125 in blok **H8** op die topografiese kaart vir die huidige jaar.

Formule: Magnetiese peiling = Magnetiese deklinasie + Ware peiling

Ware peiling: 9° (8° - 10°) ✓
Verskil in jare: 2016 – 2001 = 15 jaar ✓
Gemiddelde jaarlikse verandering: 8′ W

Totale verandering: 15 jaar x 8′ W
= 120′ W
= 2° W ✓

Magnetiese deklinasie vir 2016: 21°03′ + 2°W ✓
= 23°03′W (van Ware Noord) ✓

Magnetiese Peiling: = 23°03′ + 9° [SPELING] (7° – 9°)
32°03′ ✓ [SPELING] (31°03′ – 33°03′)

(6x1) (6)

2.2 Bereken die oppervlakte van die ortofotokaart op die topografiese kaart in kilometer. (Gebruik die oppervlak wat deur swart op die topografiese kaart uitgelig is.) Toon alle berekeninge. Dui die korrekte eenheid in jou finale antwoord aan.

Formule: Oppervlakte = lengte x breedte

= (9.8 cm x 0.5 km) ✓ (7.4 cm x 0.5 km) ✓
(Speling: 9.7 – 9.9 cm /7.3 – 7.5 cm)

= 4.9 km ✓ x 3.7 km ✓ (Speling: 4.85 km – 4.95 km / 3.65 km – 3.75 km)

= 18.13 km² ✓
(Speling: 17.7 km² – 18.5 km²)

(5x1) (5)

1.13 Ladysmith is 'n voorbeeld van 'n … dorp.

A sentraleplek
B satelliet
C opvoedkundige
D industriële

✓ **A**

1.14 Die struktuurlandvorm by **P** (in blok **D7**) op die topografiese kaart is 'n …

A mesa.
B butte.
C rif.
D cuesta.

✓ **B**

1.15 Die tipe en patroon van die nedersetting by **Q** (in blok **G9**) op die topografiese kaart is 'n …

A stedelike kernnedersetting.
B stedelike verspreide nedersetting.
C landelike verspreide nedersetting.
D landelike kernnedersetting.

✓ **D**

(15x1) (15)

[15]

1.6 Die grondgebruiksone by **1** op die ortofotokaart is 'n …

A lae inkomste residensiële gebied.
B swaar nywerheidsgebied. ✓
C hoë inkomste residensiële gebied.
D ligte nywerheidsgebied.

B

1.7 Die kontoerlyne by **K** (in blok **I2**) op die topografiese kaart illustreer 'n …

A uitloper.
B vallei. ✓
C nek.
D heuwel.

C

1.8 Die diens wat by **7** op die ortofotokaart gelewer word is 'n …

A kerk.
B skool. ✓
C hospitaal.
D hotel.

B

1.9 Die ontspanningsgebied by **2** op die ortofotokaart is 'n …

A casino.
B swembad. ✓
C park.
D stadion.

D

1.10 Die stroomkanaalpatroon by **M** (in blok **G7**) op die topografiese kaart is 'n … stroom.

A kronkelende
B rotsbeheerde ✓
C gevlegde
D tralie

A

1.11 Identifiseer die dreineringspatroon by **N** (in blok **G1**) op die topografiese kaart.

A Dendrities
B Tralie ✓
C Ontwrigte
D Parallelle

A

1.12 Die onderliggende roststruktuur by **N** (in blok **G1**) op die topografiese kaart bestaan uit …

A rotse met dieselfde weerstandbiedendheid.
B afwisselende lae harde en sagte gesteentes. ✓
C genate stollingsgesteentes.
D plooigesteentes.

A

GAUTENGSE DEPARTEMENT VAN ONDERWYS

VOORBEREIDENDE EKSAMEN – 2016

GEOGRAFIE
(Tweede Vraestel)

MEMORANDUM

VRAAG 1: MEERVOUDIGEKEUSE-VRAE

Die vrae hieronder is gebaseer op die 1:50 000 topografiese kaart 2829DB LADYSMITH, sowel as die ortofotokaart van 'n gedeelte van die gekarteerde gebied. Verskeie opsies word as moontlike antwoorde op die volgende vrae voorsien. Kies die korrekte antwoord en skryf slegs die letter (A – D) in die blokkie langs die vraag.

1.1 Ladysmith is geleë in ...

A Mpumalanga.
B die Vrystaat.
C KwaZulu-Natal.
D die Oos-Kaap.

✓ **C**

1.2 Die kaartindeks wes van Ladysmith is …

A 2829DC.
B 2829DA.
C 2829BC.
D 2829DD.

✓ **B**

1.3 Die kontoerinterval van die ortofoto kaart is … meter.

A 5
B 10
C 15
D 20

✓ **A**

1.4 Die ruitverwysing van die Trigonometriese Baken 98 in blok **H10** is …

A 28°37'55"S 29°54'58"E / 28°37.9'S 29°54.9'E.
B 28°37'56"S 29°54'30"E / 28°37.9'S 29°54.5'E.
C 28°37'06"S 29°54'42"E / 28°37.1'S 29°54.7'E.
D 28°37'56"S 29°54'58"E / 28°37.9'S 29°54.9'E.

✓ **C**

1.5 Die werklike afstand vanaf die Trigonometriese Baken 330 in blok **D7** na die Trigonometriese Baken 117 in blok **A10** op die topografiese kaart is … km.

A 6,30
B 13,90
C 6,80
D 13,6

✓ **C**

GAUTENG PROVINCE
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11 bladsye