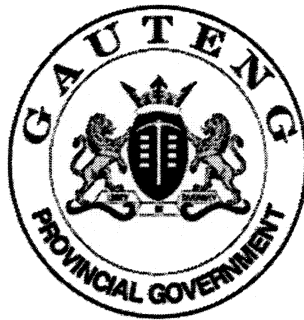


**SENIOR CERTIFICATE EXAMINATION**  
**SENIORSERTIFIKAAT-EKSAMEN**



**OCTOBER / NOVEMBER**  
**OKTOBER / NOVEMBER**

**2004**

**GEOGRAPHY**

**AARDRYKSKUNDE**

**(Second Paper: Map and  
Aerial Photograph  
Interpretation)**  
**(Tweede Vraestel: Kaart-  
en Lugfotovertolking)**

**HG**

**502-1/2**

**7 pages**  
**7 bladsye**

GEOGRAPHY HG: Paper 2  
Question Paper & Maps



502 1 2

HG

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**GAUTENGSE DEPARTEMENT VAN ONDERWYS  
SENIORSERTIFIKAAT-EKSAMEN**

**AARDRYKSKUNDE HG  
(Tweede Vraestel: Kaart- en  
lugfotovertolking)**

**TYD: 1½ uur**

**PUNTE: 80**

**HULPBRONMATERIAAL:**

- 'n Uittreksel van die topografiese kaart van 2826 BB VIRGINIA.
- 'n Uittreksel van die ortofotokaart van 2826 BB 8 HARMONY.

**BENODIGHEDE:**

- Kandidate moet hulle eie toerusting verskaf en mag van 'n standaard sakrekenaar en 'n vergrootglas gebruik maak.

**INSTRUKSIES:**

- Beantwoord AL die vrae.
- Beantwoord **Vraag 1.1 en Vraag 6** op die **antwoordblad op bladsy 7** van hierdie vraestel. Maak die antwoordblad los en plaas dit voor in jou antwoordboek na voltooiing. Onthou om jou **eksamennommer** op hierdie bladsy in te vul.
- Die hulpbronmateriaal (d.w.s. die **topografiese kaart en ortofotokaart**) moet deur die skole ingeneem word vir hul eie verdere gebruik.
- Kandidate moet van hulle teoretiese kennis van aardrykskunde gebruik maak om die vrae te beantwoord.
- Die ligging van verskynsels word soos volg aangetoon:
  - **Hoofletters** op die topografiese kaart.
  - **Syfers** op die ortofotokaart.

**DIE VOLGENDE ENGELSE TERME MET HUL AFRIKAANSE VERTALINGS VERSKYN OP DIE TOPOGRAFIESE KAART:**

Aerodrome	–	Vliegveld
Camping site	–	Kampeergebied
Canal	–	Kanaal
Conveyor belt	–	Vervoerband
Diggings	–	Mynwerke
Furrow	–	Voor
Limestone	–	Kalkklip
Sewerage works	–	Rioolwerke
Shaft	–	Skag
Silo's	–	Silo's / Graansuiers
Slimes Dam	–	Slykdam
Siphon	–	Afvoerpyp
Waterpoint = Fountain (F)	–	Waterpunt = Fontein (F)
Weir	–	Stuwal / Uitkeerwal

GAUTENG DEPARTMENT OF EDUCATION  
SENIOR CERTIFICATE EXAMINATIONGEOGRAPHY HG  
(Second Paper: Map and Aerial  
Photograph Interpretation)

TIME: 1½ hours

MARKS:80

**RESOURCE MATERIAL:**

- An extract from the Topographic Map of 2826 BB VIRGINIA
- An extract from the Orthophoto Map of 2826 BB 8 HARMONY

**REQUIREMENTS:**

- Candidates must supply their own equipment and may make use of a standard calculator and a magnifying glass.

**INSTRUCTIONS:**

- Answer ALL the Questions.
- Answer **Questions 1.1** and **Question 6** on the **answer sheet** provided on **page 7**. Detach this page and place it in the front of your **answer book**. Do not forget to **fill in your examination number** on this page.
- The resource material (i.e. the **topographic map** and the **orthophoto map**) must be collected by the schools for their own use.
- Candidates must draw on their theoretical knowledge of geography to answer the questions.
- The positions of features are indicated as follows:
  - **Capital letters** on the Topographic map
  - **Numbers** on the Orthophoto map

**ENGLISH TERMS WITH THE AFRIKAANS EQUIVALENTS FOR MAP SYMBOLS:**

Aerodrome	–	Vliegveld
Camping site	–	Kampeergebied
Canal	–	Kanaal
Conveyor belt	–	Vervoerband
Diggings	–	Mynwerke
Furrow	–	Voor
Limestone	–	Kalkklip
Sewerage works	–	Rioolwerke
Shaft	–	Skag
Silos	–	Silo' s / Graansuiers
Slimes Dam	–	Slykdam
Siphon	–	Afvoerpyp
Waterpoint = Fountain (F)	–	Waterpunt = Fontein (F)
Weir	–	Stuwal / Uitkeerwal

### VRAAG 1

- 1.1 Gebruik die kaart van Suid-Afrika op die **antwoordblad** op bladsy 7 en toon die posisie van Virginia daarop aan deur die betrokke breedte- en lengtelyn in te voeg en te benoem. (2)
- 1.2 Verskaf die volledige kaartindeksverwysing van die topografiese kaart suidwes van die Virginiakaart. (1)
- 1.3 Wat is die koördinate van peilbaken 293 in ruit A6? (4)
- 1.4 Identifiseer die algemene vloeirigting van die Sandrivier. (2)
- 1.5 Wat is die ware peiling vanaf peilbaken 293 in ruit A6 na punthoogte 1354 in ruit A5? (2)
- 1.6 Bereken die magnetiese peiling vanaf peilbaken 293 in ruit A6 na punthoogte 1354 in ruit A5 vir die jaar 2004. (6)
- 1.7 Wat is die afstand in kilometer al langs die spoorlyn vanaf die middel van die Glen Harmony-stasie in ruit B6 na die middel van die Virginiastasie in ruit E6? (3)
- 1.8 Bereken die gradiënt van die spoorlyn tussen Glen Harmony-stasie in ruit B6 na die brug in ruit B7. (Gebruik die naaste kontoerlyn(e) om die hoogteverskil te bereken).

$$\text{Gradiënt} = \frac{\text{Hoogteverskil (m)}}{\text{Afstand (m)}} \quad (3)$$

**[23]**

### VRAAG 2

- 2.1 Bestudeer die plaas Nellie in ruit H7.
- 2.1.1 Hoe kan die landelike nedersetting gemerk **A** geklassifiseer word? (1)
- 2.1.2 Verduidelik waarom nedersetting **A** goed geleë is in verhouding tot die markte in die dorp. 2x1=(2)
- 2.1.3 Wat is die vorm van die aantal geboue wat **B** gemerk is? Verduidelik waarom dit hierdie vorm het. 1+1=(2)
- 2.1.4 Waarom maak die pad naby die geboue gemerk **B** so 'n skielike draai na die ooste? (1)
- 2.1.5 Watter gewas word mees waarskynlik op Nellie en op ander plase in die omgewing verbou? (1)
- 2.1.6 Hoe vul die boer op Nellie die reënval aan? (1)
- 2.1.7 Hoe vul die boer in ruit F9 die reënval aan? (1)

## QUESTION 1

- 1.1 Use the map of South Africa on the **answer sheet** on page 7 and plot the position of Virginia, by inserting and labelling the appropriate of lines latitude and longitude. (2)
- 1.2 Give the complete map index reference of the topographical map to the south west of the Virginia map. (1)
- 1.3 What are the co-ordinates of the trigonometrical station 293 in block A6? (4)
- 1.4 Identify the general direction of flow of the Sand River. (2)
- 1.5 What is the true bearing from trigonometrical station 293 in block A6 to spot height 1354 in block A5? (2)
- 1.6 Calculate the magnetic bearing from trigonometrical station 293 in block A6 to spot height 1354 in block A5 for the year 2004. (6)
- 1.7 What is the distance in kilometres along the railway line from the middle of Glen Harmony Station in block B6 to the middle of the Virginia Station in block E6? (3)
- 1.8 Calculate the gradient of the railway line between the Glen Harmony Station in block B6 to the bridge in block B7. (Use the nearest contour lines to calculate height difference).

$$\text{Gradient} = \frac{\text{Height Difference (m)}}{\text{Distance(m)}}$$

(3)  
[23]

## QUESTION 2

- 2.1 Study the farm Nellie in block H7.
- 2.1.1 How can the rural settlement marked **A**, be classified? (1)
- 2.1.2 Explain why settlement **A** is well situated in relation to markets in the town. (2)
- 2.1.3 What is the shape of the group of buildings marked **B**? Explain why it has this shape. 1+1=(2)
- 2.1.4 Why does the path near the buildings marked **B** turn so abruptly towards the east? (1)
- 2.1.5 What crop is most likely farmed at Nellie and on other farms in the region? (1)
- 2.1.6 How does the farmer at Nellie supplement the rainfall? (1)
- 2.1.7 How does the farmer in block F9 supplement the rainfall? (1)

2.2 Verwys na die plase in ruit F11.

2.2.1 Identifiseer 'n ernstige problem, ten spyte van die geleidelike helling van die landskap, waarmee die boere rekening moet hou. (1)

2.2.2 Verduidelik waarom hierdie problem (Vraag 2.2.1) die boere verhinder om die vloedvlaktes vir bewerking te benut? 1x2=(2)  
[12]

### VRAAG 3

3.1 Verwys na ruit B4 en C4.

3.1.1 Spesifieer die hoof-primêre aktiwiteit in hierdie ruite. (2)

3.1.2 Noem TWEE bewyse wat aandui dat daar grondwater in die Virginiagebied as 'n geheel beskikbaar is. 2x1=(2)

3.1.3 Verduidelik waarom die teenwoordigheid van grondwater die aktiwiteit, waarna in Vraag 3.1.1 verwys is, negatief beïnvloed. 1x2=(2)

3.1.4 Noem TWEE omgewingsprobleme wat ontstaan het vanweë die primêre aktiwiteit waarna daar in Vraag 3.1.1 verwys word. 2x1=(2)  
[8]

### VRAAG 4

4.1 Sommige riviere in die Virginiagebied vloei nie regdeur die jaar nie.

4.1.1 Hoe verskil die vloei patroon van Merriespruit van dié van die Sandrivier stroomaf van G in ruit E9? (1)

4.1.2 Watter aanduidings is daar dat hierdie riviere, sigbaar op die topografiese kaart, in hul middelloop stadium is? (1)

4.1.3 Identifiseer die stroom patroon wat deur die riviersisteem, wat noordwaarts vloei na die Sandrivier in ruit F9 en F10, gevorm word? (1)

4.1.4 Wat is die orde van hierdie riviersisteem (Vraag 4.1.3) waar dit die Sandrivier binne vloei? (1)

4.2 Teken 'n kantaansigskets oor die rivier tussen 4 en 5 in ruit L8 op die ortofotokaart. Merk die punte 4 en 5 duidelik op die skets en benoem die tipe rivieroewers. (4)

4.3 Verwys na die gebied in ruit M8 en M9 op die ortofotokaart.

4.3.1 Watter bewys dui aan dat die rivier by 2 nie altyd sy huidige kanaal gevolg het nie? (1)

4.3.2 Verduidelik waarom die eilande gemerk 1 nie dié posisie sal behou nie? (1)

- 2.2 Refer to the farms in block F11.
- 2.2.1 Identify a serious problem that farmers have to deal with, in spite of the gentle slope of the land. (1)
- 2.2.2 Explain why the problem (Question 2.2.1) has prevented the farmers from using the floodplains for cultivation?  $1 \times 2 = (2)$   
[12]

**QUESTION 3**

- 3.1 Refer to blocks B4 and C4.
- 3.1.1 Specify the main primary activity in these blocks. (2)
- 3.1.2 List TWO pieces of evidence that indicate that groundwater is available in the Virginia region as a whole.  $2 \times 1 = (2)$
- 3.1.3 Explain why the presence of groundwater would negatively influence the activity referred to in Question 3.1.1.  $1 \times 2 = (2)$
- 3.1.4 Name TWO environmental problems that have been created by the presence of the primary activity referred to in Question 3.1.1.  $2 \times 1 = (2)$   
[8]

**QUESTION 4**

- 4.1 Some of the rivers in the Virginia area do not flow all year round.
- 4.1.1 How does the flow pattern of the Merriespruit differ from that of the Sand River downstream of **G** in block E9? (1)
- 4.1.2 What evidence is there to suggest that these rivers, visible on the topographic map, are in their middle course? (1)
- 4.1.3 Identify the stream pattern formed by the river system flowing northward to the Sand River in block F9 and F10. (1)
- 4.1.4 What is the order of this river system (Question 4.1.3) where it enters the Sand River? (1)
- 4.2 Draw a cross profile sketch across the river between **4** and **5** in block L8 on the orthophoto map. Mark points **4** and **5** clearly on the sketch and label the types of river banks. (4)
- 4.3 Refer to the area in block **M8** and **M9** on the orthophoto map.
- 4.3.1 What evidence at **2** suggests that the river did not always follow its present channel? (1)
- 4.3.2 Explain why the islands marked **1** are not likely to retain their position? (1)

- 4.4 Bestudeer die gebied aan die noordelike oewer van die Sandrivier vanaf ruit L6 tot L8 op die ortofotokaart.
- 4.4.1 Identifiseer die vorm van die helling gemerk 3. (1)
- 4.4.2 Verduidelik waarom hierdie helling (gemerk 3) dié vorm het. (1)
- 4.4.3 Volg die kontoerlyne aan die noordelike wal van die Sandrivier. "Die gesteentes wat die boonste gedeelte van die helling vorm, is horisontaalliggend". Is hierdie stelling WAAR óf ONWAAR? Verduidelik jou antwoord. 1+1=(2)  
[14]

### VRAAG 5

- 5.1 Bestudeer die morfologie van die dorp op beide die ortofotokaart en die topografiese kaart.
- 5.1.1 Kan die Sentrale Sakekern geïdentifiseer word in die gebied tussen ruit P2 en P5 op die ortofotokaart? Verduidelik. 1+1=(2)
- 5.1.2 Identifiseer die straatpatroon
- (a) in ruit P5 en O5. (1)
- (b) van die voorstad Glen Harmony aan die noordelike kant van die Sandrivier. (1)
- 5.1.3 Noem EEN voordeel van 'n straatpatroon soos die een in Glen Harmony. (1)
- 5.1.4 Watter bewys toon aan dat die dorp Virginia 'n onlangs beplande en moderne dorp is? 1x2=(2)
- 5.1.5 Verduidelik waarom die suidelike deel van die dorp nie maklik toeganklik is vir die voorstede aan die noordekant van die Sandrivier nie. 1x2=(2)
- 5.2 Ontspanningsgebiede word in alle stede en dorpe aangetref.
- 5.2.1 Noem TWEE ontspanningsaktiwiteite wat aangrensend aan die suidelike kant van Sandrivier aangetref word? (2)
- 5.2.2 Verskaf EEN moontlike rede vir die ligging van hierdie ontspanningsaktiwiteite (Vraag 5.2.1) in die dorp. (1)
- 5.2.3 Daar word ook ontspanningsfasiliteite by die meeste mynsentrums in die dorp aangetref. Verskaf 'n moontlike rede hiervoor. 1x2=(2)  
[14]



- 4.4 Study the area of the northern bank of the Sand River from block L6 to L8 on the orthophoto map.
- 4.4.1 Identify the shape of the slope marked **3**. (1)
- 4.4.2 Explain why this slope (marked **3**) has that shape. (1)
- 4.4.3 Follow the contour lines on the northern bank of the Sand River. "The rock forming the upper section of the slope lies horizontally". Is this statement TRUE or FALSE? Explain your answer. 1+1=(2)  
**[14]**

**QUESTION 5**

- 5.1 Study the morphology of the town on both the orthophoto map and the topographic map.
- 5.1.1 Can the Central Business District be identified in the area between block P2 and block P5 on the orthophoto map? Explain. 1+1=(2)
- 5.1.2 Identify the street pattern  
(a) in block P5 and O5. (1)  
(b) of the suburb of Glen Harmony on the northern side of the Sand River. (1)
- 5.1.3 Name ONE advantage of a street pattern like that in Glen Harmony. (1)
- 5.1.4 What evidence suggests that the town of Virginia is a recently planned and modern town? 1x2=(2)
- 5.1.5 Explain why the southern part of the town is not easily accessible to the suburbs on the northern side of the Sand River? 1x2=(2)
- 5.2 Recreational areas can be found in all towns and cities.
- 5.2.1 Name TWO recreational activities that are found bordering the southern side of the Sand River. (2)
- 5.2.2 Give ONE possible reason for the location of these recreational activities within the town. (Question 5.2.1). (1)
- 5.2.3 There are also recreation facilities at most of the mining centres throughout the town. Give a possible reason for this. 1x2=(2)  
**[14]**

### VRAAG 6

6.1 Gebruik die grafiek op die **antwoordblad** en voltooi 'n akkurate dwarsaansig vanaf peilbaken 20 in ruit D11 na peilbaken 353 in ruit H11. (6)

6.2 Toon aan en benoem die volgende verskynsels op die dwarsaansig:

- die Sandrivier met 'n letter **R**
- EEN kanaal met 'n letter **C**
- EEN donga met 'n letter **D**
- 'n Ander pad met 'n letter **S**

4x1=(4)  
[10]

**TOTAAL: 80**

**QUESTION 6**

- 6.1 Use the graph on the **answer sheet** and complete an accurate cross-section from trigonometrical station 20 in block D11 to trigonometric station 353 in block H11. (6)
- 6.2 Indicate and label the position of the following features on the cross-section:
- The Sand River with a letter **R**
  - ONE canal with a letter **C**
  - ONE donga with a letter **D**
  - An other road with a letter **S**

4x1=(4)  
[10]

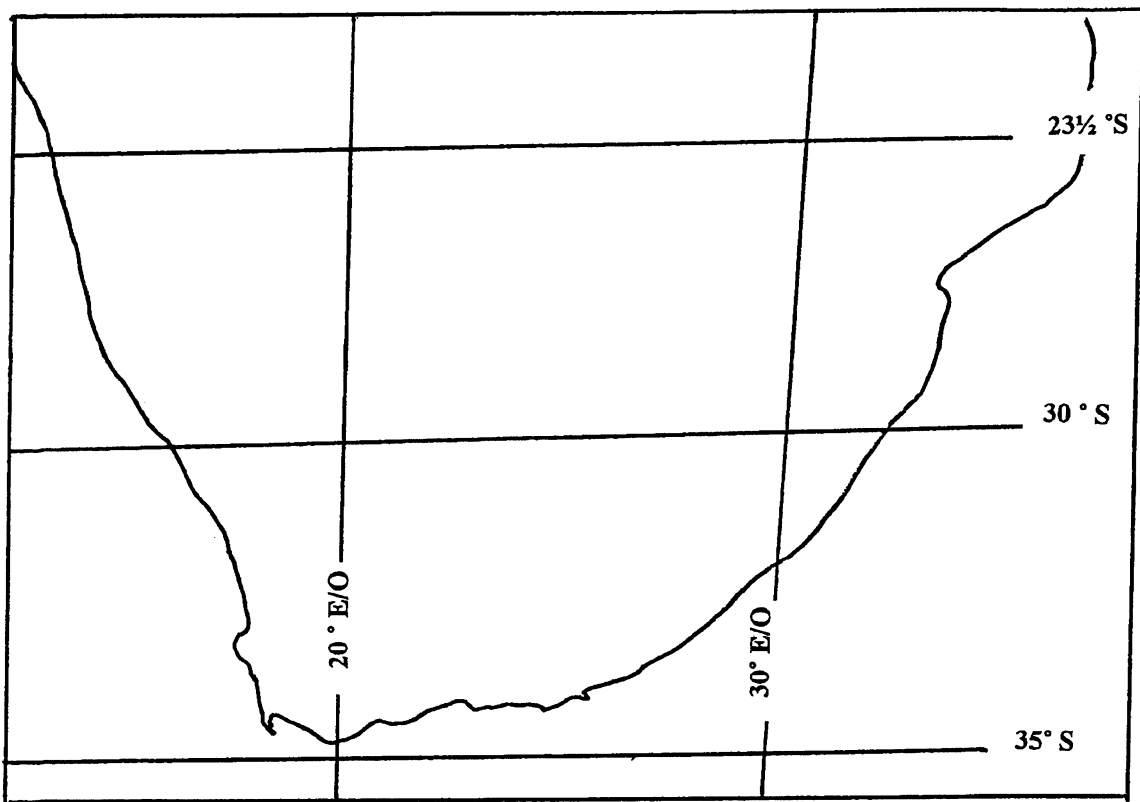
**TOTAL: 80**



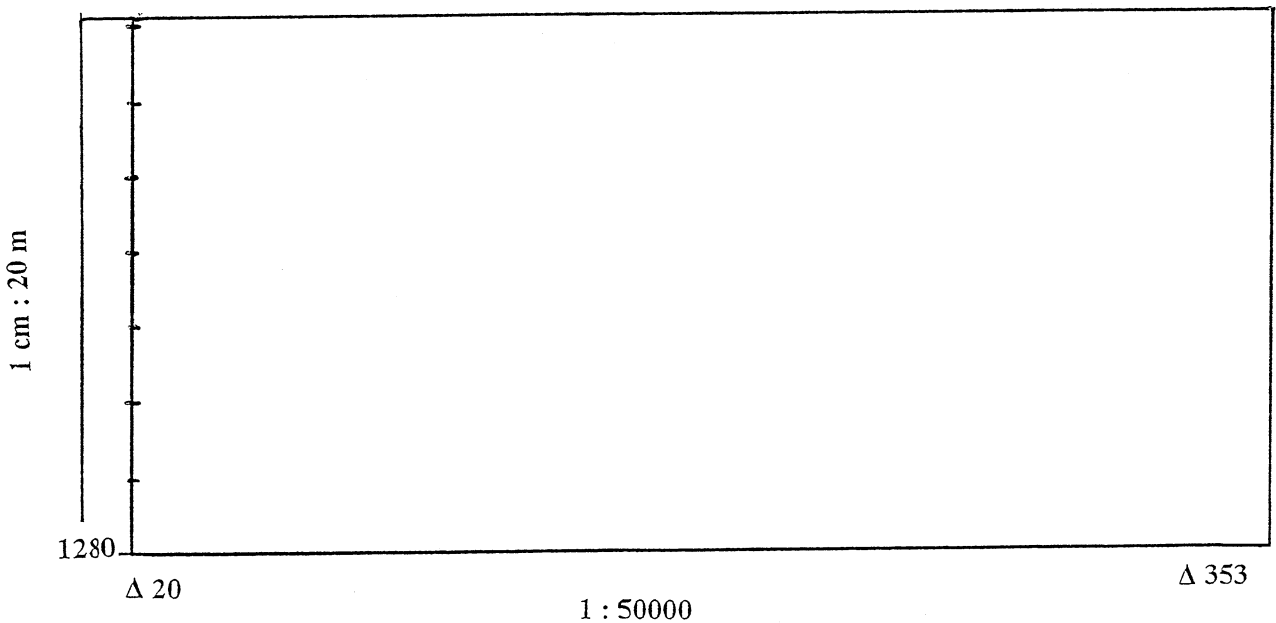
Answer Sheet / Antwoordblad

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QUESTION 1.1 / VRAAG 1.1



QUESTION 6 / VRAAG 6



END / EINDE