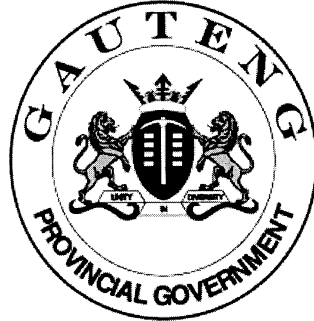


**SENIOR CERTIFICATE
EXAMINATION
SENIORSERTIFIKAAT-EKSAMEN**



**FEBRUARY / FEBRUARIE
MARCH / MAART**

2005

GEOGRAPHY

AARDRYKSKUNDE

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

SG

502-2/2

**6 pages
6 bladsye**

GEOGRAPHY SG: Paper 2



X05



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GAUTENGSE DEPARTEMENT VAN ONDERWYS
SENIORSERTIFIKAAT-EKSAMENAARDRYKSKUNDE SG
(Tweede Vraestel: Kaart- en
Lugfotovertolking)

TYD: 1½ uur

PUNTE: 60

HULPBRONMATERIAAL:

- 'n Uittreksel uit die **topografiese kaart** van 2826 BB Virginia.
- 'n Uittreksel uit 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.
- Die hulpbronmateriaal (d.w.s. die **topografiese kaart** en die **ortofotokaart**) moet deur die skole ingeneem word vir hulle eie verdere gebruik.
- Kandidate moet van hulle teoretiese kennis van aardryskunde 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
Silos	–	Silo's / Graansuiers
Slimes Dam	–	Slykdam
Siphon	–	Afvoerpyl
Waterpoint = Fountain (F)	–	Waterpunt = Fontein (F)
Weir	–	Stuwal / Uitkeerwal

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

TIME: 1½ hours

MARKS: 60

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:

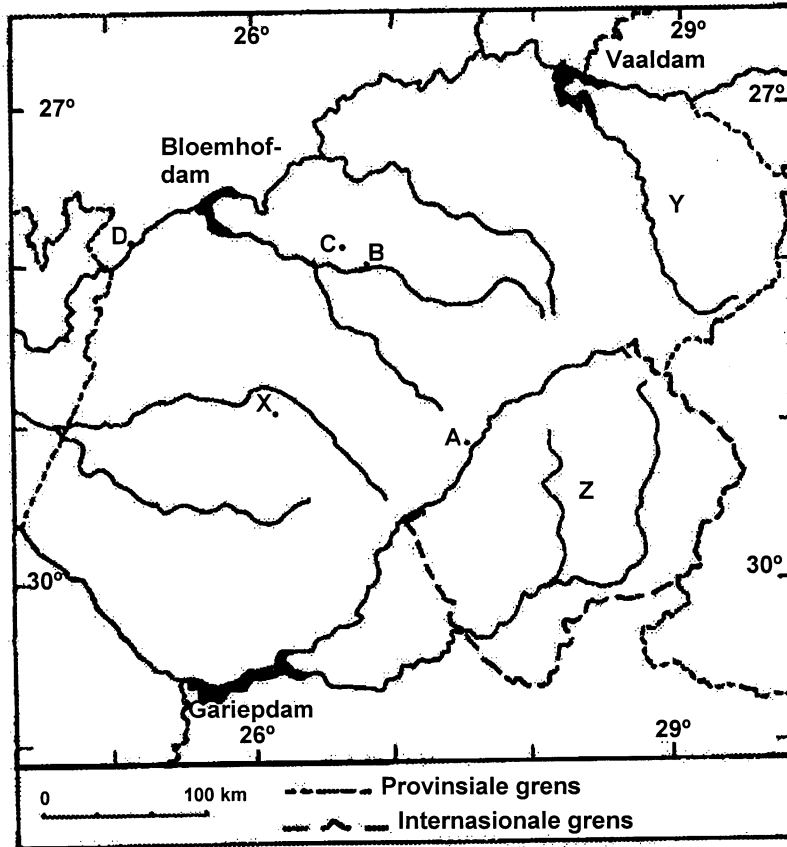
- Answer ALL questions.
- The resource material (i.e. the **topographic map** and the **orthophoto map**) must be collected by the schools for their own further use.
- Candidates must draw on their theoretical knowledge of geography to answer the questions.
- The positions of features are indicated as follows:
 - **Capital letters** on the topographic map
 - **Numbers** on the orthophoto map

The following English terms with their Afrikaans equivalents appear on the topographic map:

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 Bestudeer FIGUUR 1, 'n kaart van 'n gedeelte van Suid-Afrika, saam met die topografiese kaart.

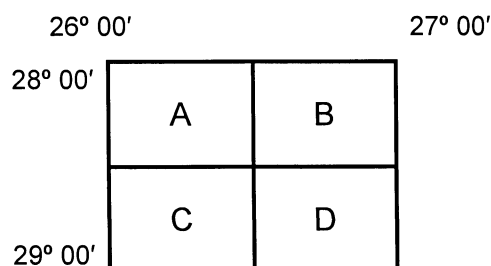


FIGUUR 1

- 1.1.1 Met watter letter op Figuur 1 (A, B, C óf D) stem die ligging van Virginia ooreen? (1)
- 1.1.2 In watter provinsie is Virginia geleë? (1)
- 1.1.3 Noem die hoofstad, gemerk X, van hierdie provinsie. (1)
- 1.1.4 Van watter hoofrivier vorm die Sandrivier 'n sytak? (1)

1.2 Die topografiese kaart in jou besit is slegs 'n uittreksel van die oorspronklike kaartvel 2826BB. Gebruik die volgende diagram om die koördinate van die noordwestelike hoek van die oorspronklike kaartvel te verskaf. Kies EEN uit die volgende moontlikhede:

- 28° 00' Suid; 26° 45' Oos
 - 28° 15' Suid; 26° 30' Oos
 - 26° 45' Suid; 28° 00' Oos
 - 26° 30' Suid; 28° 15' Oos
- (2)



QUESTION 1

1.1 Study **FIGURE 1**, a map of a part of South Africa, together with the topographic map.

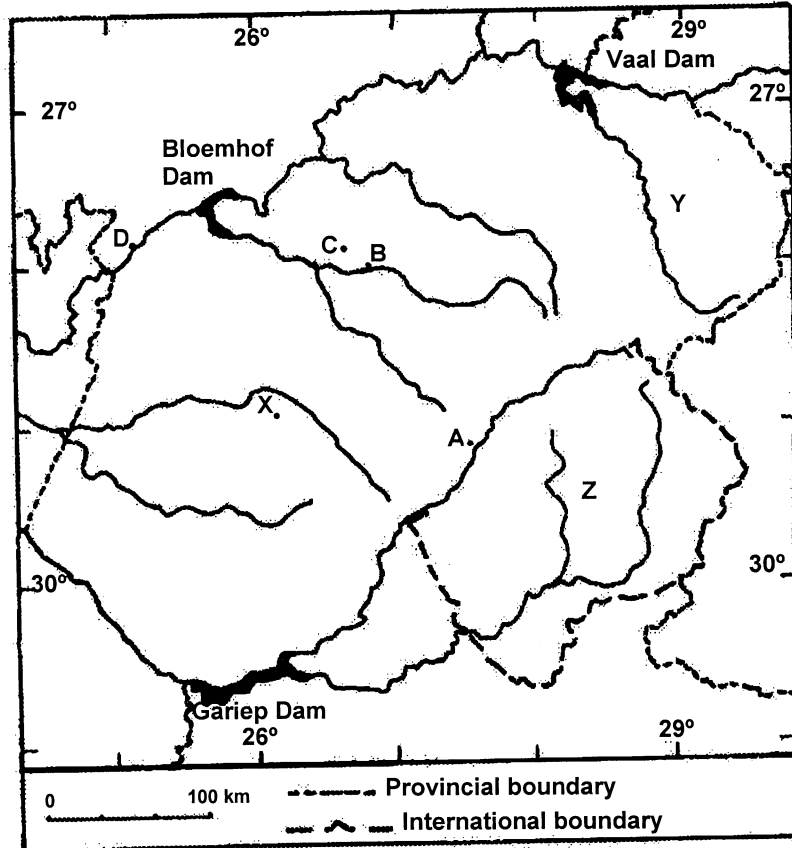
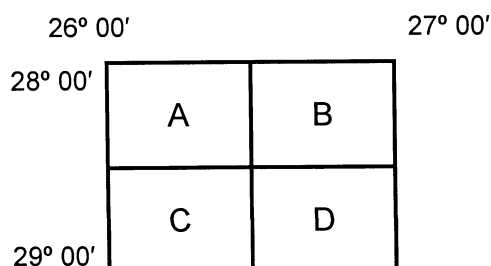


FIGURE 1

- 1.1.1 With which letter on Figure 1 (A, B, C or D) does the position of Virginia correspond? (1)
- 1.1.2 In which province is Virginia located? (1)
- 1.1.3 Name the capital city, marked X, of this province. (1)
- 1.1.4 Of which major river does the Sand River form a tributary? (1)

1.2 The topographic map in your possession is only an extract from the original map sheet 2826BB. Use the following diagram to give the co-ordinates of the north-western corner of the original map sheet. Choose ONE from the following possibilities:

- 28° 00' South; 26° 45' East
- 28° 15' South; 26° 30' East
- 26° 45' South; 28° 00' East
- 26° 30' South; 28° 15' East (2)



- 1.3 Noem TWEE prominente primêre aktiwiteite wat op die topografiese kaart waargeneem kan word. (2)
- 1.4 Virginia kan geklassifiseer word as 'n (Sentraleplek- / Handels- en vervoer- / Gespesialiseerde) stedelike nedersetting. Kies EEN korrekte antwoord vanuit tussen die hakies. (2)
- 1.5 Bestudeer die tabel wat klimaatstatistiek vir die Virginia-omgewing aantoon. Die topografiese kaart moet ook geraadpleeg word.

	J	F	M	A	M	J	J	A	S	O	N	D
Maksimum temperatuur (°C)	30	29	27	24	21	18	17	22	25	28	28	30
Minimum temperatuur (°C)	15	14	13	8	3	-2	-2	1	6	10	12	14
Neerslag (mm)	93	82	89	45	25	8	9	13	20	61	86	98

1.5.1 Bereken die volgende inligting vir Virginia:

- (a) Jaarlikse neerslag (1)
- (b) Gemiddelde temperatuur vir Januarie (1)
- (c) Gemiddelde temperatuur vir Julie (1)
- (d) Jaarlikse temperatuurspeling (2)

1.5.2 Watter tipe reën kom gewoonlik in hierdie gebied voor? (1)

1.5.3 Hoe word die watervoorraad, veral gedurende die droë wintermaande, aangevul? 2x1=(2)

1.5.4 Noem enige TWEE natuurkundige probleme wat die boere in die Virginia-omgewing kan ondervind. 2x1=(2)

[20]

VRAAG 2

2.1 Die Harmony-vliegveld is in ruit B4 op die topografiese kaart geleë.

2.1.1 Bereken die lengte van die aanloopbaan in meter. (3)

2.1.2 In watter ruite op die ortofotokaart word hierdie vliegveld aangedui? (2)

2.1.3 Hoe verskil die uitleg van die vliegveld indien die topografiese kaart en ortofotokaart met mekaar vergelyk word? 2x2=(4)

2.2 Magnetiese deklinasie

2.2.1 Watter een van die volgende beskrywings, **A** óf **B**, omskryf die term **magnetiese deklinasie**?

A	B
Die hoek waarmee die Magnetiese Noord afwyk van die Ware Noord	'n Regstelling wat gemaak word aan die afstand tussen Magnetiese en Ware Noord

(1)

2.2.2 Behoort die magnetiese deklinasie vir 2004 groter óf kleiner as 19° 32' Wes te wees?

(1)

- 1.3 List TWO prominent primary activities which can be observed on the topographic map. (2)
- 1.4 Virginia can be classified as a (Central Place / Trade and Transport / Specialised) urban settlement. Choose ONE correct answer from between the brackets. (2)
- 1.5 Study the table which shows climatic statistics for the Virginia area. The topographic map must also be consulted.

	J	F	M	A	M	J	J	A	S	O	N	D
Maximum temperature (°C)	30	29	27	24	21	18	17	22	25	28	28	30
Minimum temperature (°C)	15	14	13	8	3	-2	-2	1	6	10	12	14
Precipitation (mm)	93	82	89	45	25	8	9	13	20	61	86	98

1.5.1 Calculate the following information for Virginia:

- (a) Annual rainfall (1)
- (b) Average temperature for January (1)
- (c) Average temperature for July (1)
- (d) Annual temperature range (2)

1.5.2 What type of rainfall usually occurs in this region? (1)

1.5.3 How is the water supply supplemented, especially during the dry winter months? 2x1=(2)

1.5.4 Name any TWO natural problems which farmers in the Virginia area experience. 2x1=(2)

[20]

QUESTION 2

2.1 The Harmony aerodrome is located in block B4 on the topographic map.

2.1.1 Calculate the length of the runway in metres. (3)

2.1.2 In which blocks on the orthophoto map is this aerodrome indicated? (2)

2.1.3 How does the layout of the aerodrome differ if the topographic map and orthophoto map are compared to each other? 2x2=(4)

2.2 Magnetic declination

2.2.1 Which one of the following descriptions, **A** or **B**, corresponds with the definition of **magnetic declination**?

A	B
The angle with which the Magnetic North deviates from True North	A correction made to the distance between the Magnetic and True North

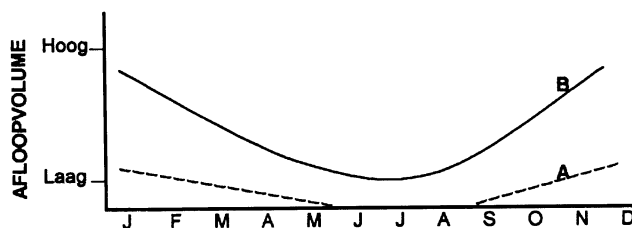
(1)

2.2.2 Will the magnetic declination for 2004 be larger or smaller than 19° 32' West? (1)

- 2.3 Bepaal die ware peiling vanaf die peilbaken in ruit B4 na die middel van die verkeerssirkel in ruit C5. (1)
- 2.4 Hoe hoog is die peilbaken in ruit B4 bo seevlak geleë? (1)
- 2.5 Identifiseer die natuurlike verskynsels by die volgende koördinate:
- 2.5.1 28° 09,8' Suid; 26° 49,5' Oos. (1)
- 2.5.2 28° 10,2' Suid; 26° 53,8' Oos. (1)
- 2.6 Verwys na jou antwoord op Vraag 2.5.1. Watter probleem skep dié betrokke verskynsel vir die boer? (1)
- [16]**

VRAAG 3

- 3.1 Bestudeer die Sandrivier in ruit E8 en Merriespruit in ruit E7.
- 3.1.1 Wat is die algemene vloeirigting van
- (a) die Sandrivier in ruit E8? (1)
- (b) Merriespruit in ruit E7? (1)
- 3.1.2 Beide strome vloei oor 'n (geleidelike / steil) helling. Kies die korrekte moontlikheid tussen die hakies. (1)
- 3.1.3 Watter vloei hidrogram A en B kan onderskeidelik met die Sandrivier en Merriespruit verbind word? Verduidelik jou antwoord. 2+2=(4)



- 3.2 Verwys na ruit O1 en P1 op die ortofotokaart. Teken 'n kantaansigskets van die riviervallei op 'n lyn 11 tot 12. Toon op die skets die rivierprosesse wat verantwoordelik vir hierdie vorm is, aan. (4)
- [11]**

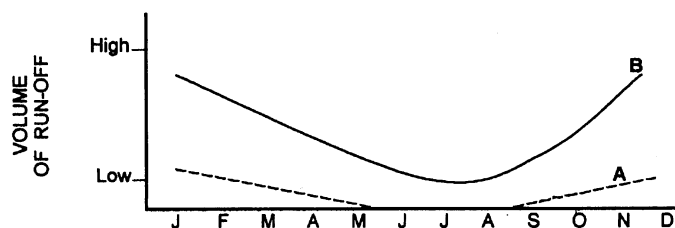
VRAAG 4

- 4.1 Bestudeer ruit H7.
- 4.1.1 Noem EEN basiese behoefte wat in aanmerking geneem is by die keuse van die standplaas gemerk A. 1x2=(2)
- 4.1.2 Verskaf TWEE redes vanaf die topografiese kaart waarom die boer by A as 'n kommersiële boer beskou kan word. 2x2=(4)
- 4.1.3 Wat is mees waarskynlik die funksie van die geboue by B? (2)

- 2.3 Determine the true bearing from the trigonometrical station in block B4 to the middle of the traffic circle in block C5. (1)
- 2.4 What is the altitude of the trigonometrical station in block B4? (1)
- 2.5 Identify the natural features at the following co-ordinates:
- 2.5.1 28° 09,8' South; 26° 49,5' East. (1)
- 2.5.2 28° 10,2' South; 26° 53,8' East. (1)
- 2.6 Refer in your answer to Question 2.5.1. What problem is caused for the farmer by this feature? (1)
- [16]**

QUESTION 3

- 3.1 Study the Sand River in block E8 and the Merriespruit in block E7.
- 3.1.1 What is the general direction of flow of
- (a) the Sand River in block E8? (1)
- (b) the Merriespruit in block E7? (1)
- 3.1.2 Both streams flow over a (gentle / steep) slope. Choose the correct possibility from between the brackets. (1)
- 3.1.3 Which flow hydrograph **A** and **B** can be connected to the Sand River and Merriespruit respectively? Explain your answer. 2+2=(4)



- 3.2 Refer to block O1 and P1 on the orthophoto map. Draw a cross-profile sketch of the river valley along the line **11** to **12**. Indicate on the sketch the river processes responsible for these shapes. (4)
- [11]**

QUESTION 4

- 4.1 Study block H7.
- 4.1.1 Name ONE basic need which was taken into consideration in the choice of the site marked **A**. 1x2=(2)
- 4.1.2 Give TWO reasons from the topographic map why the farmer at **A** can be regarded as a commercial farmer. 2x2=(4)
- 4.1.3 What is most probably the function of the buildings at **B**? (2)

4.2 Bestudeer die ortofotokaart. Identifiseer die

- 4.2.1 natuurlike verskynsel gemerk **1**.
- 4.2.2 grondgebruik by **13**.
- 4.2.3 mensgemaakte verskynsels **14** en **15**.
- 4.2.4 tipe kommunikasieverbinding gemerk **16**.

(1)

(1)

(2)

(1)

[13]

TOTAAL: 60

EINDE

4.2 Study the orthophoto map. Identify the

- | | |
|---|-------------|
| 4.2.1 natural feature marked 1 . | (1) |
| 4.2.2 land-use at 13 . | (1) |
| 4.2.3 man-made features 14 and 15 . | (2) |
| 4.2.4 type of communication link marked 16 . | (1) |
| | [13] |

TOTAL: 60

END