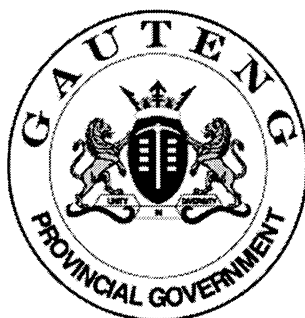


SENIOR CERTIFICATE EXAMINATION
SENIORSERTIFIKAAT-EKSAMEN



FEBRUARY / MARCH
FEBRUARIE / MAART

2005

GEOGRAPHY

AARDRYKSKUNDE

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

HG

502-1/2

GEOGRAPHY HG: Paper 2

6 pages
6 bladsye



X05



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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 2826BB VIRGINIA.
- 'n Uittreksel van die **ortofotokaart** van 2826BB8 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 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
Silos	–	Silos//Graansuiers
Slimes dams	–	Slykdam
Siphon	–	Afvoerpyp
Waterpoint=Fountain (F)	–	Waterpunt=Fontein (F)
Weir	–	Stuwal/Uitkeerwal

GAUTENG DEPARTMENT OF EDUCATION

SENIOR CERTIFICATE EXAMINATION

GEOGRAPHY HG
(Second Paper: Map and Aerial
Photograph Interpretation)

TIME: 1½ hours

MARKS:80

RESOURCE MATERIAL:

- An extract from the **topographic map** of 2826BB VIRGINIA.
- An extract from the **orthophoto map** of 2826BB8 HARMONY.

REQUIREMENTS:

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

INSTRUCTIONS:

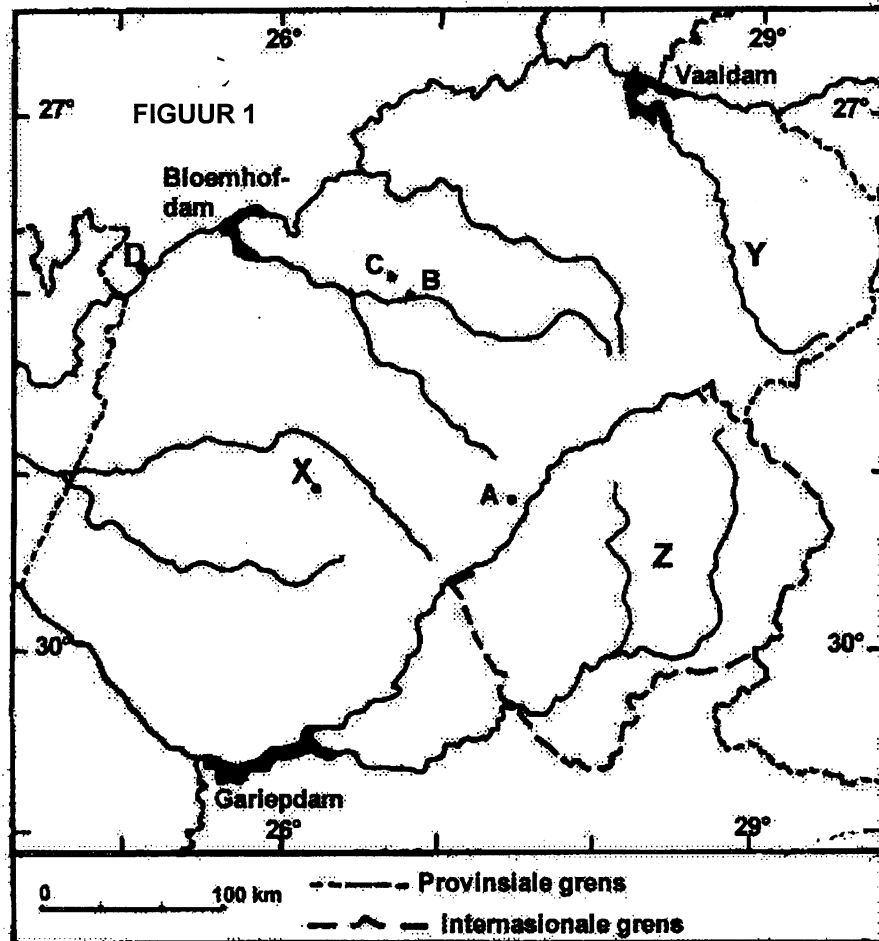
- Answer ALL Questions.
- The resource material (i.e. the **topographic map** and the **orthophoto map**) must be collected by the schools for their own use.
- Candidates must draw on their theoretical knowledge of geography to answer the questions.
- The positions of features are indicated as follows: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

The following English terms with the 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	–	Silos//Graansuiers
Slimes dams	–	Slykdam
Siphon	–	Afvoerpyp
Waterpoint=Fountain (F)	–	Waterpunt=Fontein (F)
Weir	–	Stuwal/Uitkeerwal

VRAAG 1

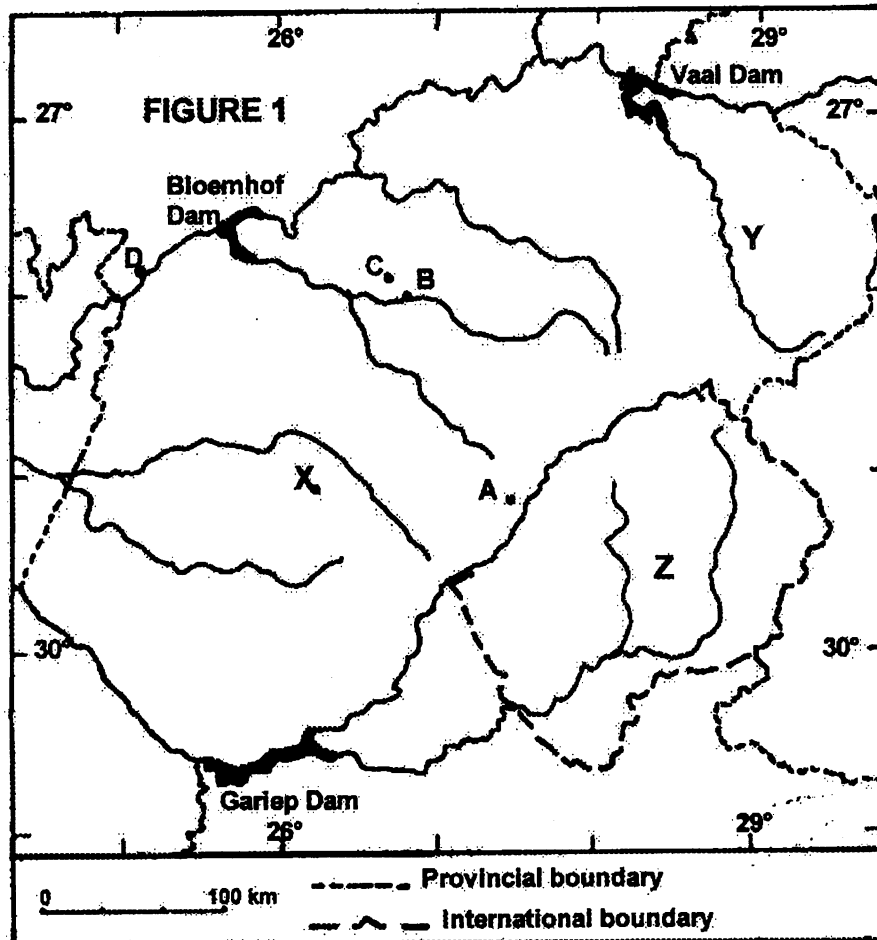
1.1 Bestudeer **Figuur 1**, 'n kaart van 'n gedeelte van Suid-Afrika, saam met die topografiese kaart.



- 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)
- 1.1.5 Wat is die naam van die rivier, gemerk Y, wat water vanaf die Tugelarivier na die Vaaldam vervoer? (1)
- 1.1.6 Noem die buurstaat wat Z gemerk is. (1)

QUESTION 1

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



- 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)
- 1.1.5 What is the name of the river, marked Y, which transports water from the Tugela River to the Vaal Dam? (1)
- 1.1.6 Name the neighbouring country marked Z. (1)

- 1.2 Die topografiese kaart in jou besit is slegs 'n uittreksel van die oorspronklike kaartvel 2826BB. Verskaf die koördinate van die noordwestelike hoek van die oorspronklike kaartvel. (4)
- 1.3 Spesifiseer die hoof funksie waarom Virginia as 'n gespesialiseerde stedelike nedersetting ontstaan het. (1)
- 1.4 Virginia beskik ook oor sentraleplek funksies. Is hierdie stelling REG óf VERKEERD? Motiveer jou antwoord 1+1=(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 Verklaar die uiters lae minimumtemperatuur gedurende Junie- en Juliemaande. 2x1=(2)
- 1.5.4 Waaruit kan jy aflei dat gewasverbouing hoofsaaklik tot die somermaande beperk is? 2x2=(4)
[25]

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 ortofoto kaart word hierdie vliegveld aangedui? (2)
 - 2.1.3 Hoe verskil die uitleg van die vliegveld indien die topografiese kaart en ortofoto kaart met mekaar vergelyk word? 2x1=(2)
 - 2.1.4 Aanloopbane gee 'n aanduiding van die heersende windrigting(s). Verduidelik hierdie stelling met betrekking tot die Virginia-omgewing deur na spesifieke windrigting(s) te verwys. 2x2=(4)

- 1.2 The topographic map in your possession is only an extract from the original map sheet 2826BB. Supply the co-ordinates of the north-western corner of the original map sheet. (4)
- 1.3 Specify the main function why Virginia originated as a specialised urban settlement. (1)
- 1.4 Virginia also provides central place functions. Is this statement TRUE or FALSE? Motivate your answer. 1+1=(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 Explain the extremely low minimum temperatures for the months of June and July. 2x1=(2)
- 1.5.4 From what can you conclude that crop farming is mainly limited to the summer months? 2x2=(4)
- [25]**

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 with each other? 2x1=(2)
 - 2.1.4 Runways give an indication of the prevailing wind direction(s). Explain this statement with regard to the Virginia area, referring to specific wind direction(s). 2x2=(4)

2.2 Magnetiese deklinasie

2.2.1 Definieer die term magnetiese deklinasie. (1)

2.2.2 Bereken die magnetiese deklinasie vir 2004. (4)

2.3 Bepaal die magnetiese peiling vanaf die peilbaken in ruit B4 na die middel van die verkeersirkel in ruit C5. (3)

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.

2.6.1 Watter probleem skep dié betrokke verskynsel vir die boer? (1)

2.6.2 Noem EEN voordeel wat dié verskynsel vir die omgewing inhou. (1)

[24]

VRAAG 3

3.1 Bestudeer die Sandrivier in ruit E8 en Merriespruit in ruit E7.

3.1.1 Wat is die algemene vloei rigting van

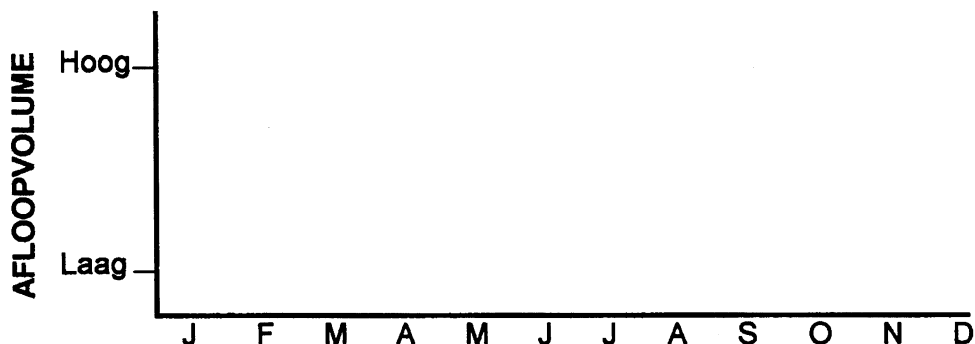
(a) die Sandrivier in ruit E8? (1)

(b) Merriespruit in ruit E7? (1)

3.1.2 Waarom kan beide strome as in hul middelloopstadium geklassifiseer word?

2x2=(4)

3.1.3 Teken die grafiekasse hieronder oor en toon daarop veralgemeende vloeihidrogramme vir die Sandrivier by punt L en vir Merriespruit by punt M vir 'n jaar aan. (6)



2.2 Magnetic declination

- 2.2.1 Define the term magnetic declination. (1)
 2.2.2 Calculate the magnetic declination for 2004. (4)

2.3 Determine the magnetic bearing from the trigonometrical station in block B4 to the middle of the traffic circle in block C5 (3)

2.4 What is the altitude of the trigonometrical station located 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 to your answer of Question 2.5.1.

- 2.6.1 What problem is caused for the farmer by this feature? (1)
 2.6.2 Name ONE advantage which this feature holds for the environment. (1)
[24]

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) Merriespruit in block E7? (1)

3.1.2 Why can both streams be classified as being in their middle course stage? 2x2=(4)

3.1.3 Redraw the graph axes below and indicate approximated flow hydrographs for the Sand River at point L and for Merriespruit at point M for the year. (6)



- 3.2 Verwys na ruit O1 en P1 op die ortofotokaart. Teken 'n kantaansigskets van die riviervallei op 'n lyn **11** tot **12** en toon die rivierprosesse wat verantwoordelik is vir die spesifieke vorm aan.

(4)

[16]

VRAAG 4

- 4.1 Bestudeer ruit H7.

4.1.1 Noem TWEE basiese behoeftes wat in aanmerking geneem is by die keuse van die standplaas gemerk **A**.

2x1=(2)

4.1.2 Verskaf TWEE redes vanaf die topografiese kaart waarom die boer as 'n kommersiële boer beskou kan word by **A**.

2x2=(4)

- 4.2 Teken 'n vereenvoudigde stedelike profiel vanaf 28° 06,3' Suid; 26° 52,0' Oos na **N** in ruit E3. Verduidelik, met byskrifte, die vorm van die profiel.

2+3=(5)

- 4.3 Hoe behoort die gemiddelde temperatuur vanaf die koördinaatpunt in Vraag 4.2 na **N** te verander? Motiveer jou antwoord.

(4)

[15]**TOTAAL: 80**

- 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** and indicate the river processes responsible for the shapes. (4)
[16]

QUESTION 4

- 4.1 Study block H7.
- 4.1.1 Name TWO basic needs which were taken into consideration in the choice of the site marked **A**. 2x1=(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)
- 4.2 Draw a simplified urban profile from 28° 06,3' South; 26° 52,0' East to **N** in block E3. Explain, with labels, the form of the profile. 2+3=(5)
- 4.3 How would the average temperatures change from the co-ordinate points in Question 4.2 to **N**? Substantiate your answer. (4)
[15]

TOTAL: 80

END