

GAUTENG DEPARTMENT OF EDUCATION  
SENIOR CERTIFICATE EXAMINATION

FEB / MAR 2006

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

TIME: 1 ½ hours

MARKS: 80

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**RESOURCE MATERIAL:**

- An extract from the topographical map of Estcourt.
- An extract from the orthophoto map of Estcourt.

**REQUIREMENTS:**

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

**INSTRUCTIONS:**

- Answer ALL the questions.
- All diagrams appear on the **Information Sheet on page 7** of this question paper.
- In the case of calculations, **all steps** must be shown.
- The resource material (i.e. the topographical map and the orthophoto map) must be collected by the schools for their own further use.
- Candidates must draw on their knowledge of physical and human geography to answer the questions.
- The positions of features are indicated as follows:
  - Capital letters on the topographical map.
  - Numbers on the orthophoto map.

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

Boat Club	:	Bootklub	Nature Reserve	:	Natuurreservaat
Boesmans River	:	Boesmansrivier	Power Line	:	Kraglyn
Caravan Park	:	Karavaanpark	Rail Route	:	Spoorroete
Furrow / Canal	:	Voor / Kanaal	Rifle Range	:	Skietbaan
Game Reserve	:	Wildreservaat	Sewage Works	:	Rioolwerke
Landing Strip	:	Landingstrook	Tunnel	:	Tonnel
Monument	:	Monument	Weir	:	Stuwal / Uitkeerwal

**QUESTION 1**

Refer to **Figure 1** on **page 7**. Estcourt is located in an area known as the KwaZulu-Natal Midlands.

- 1.1 Which mountain range marked **F** on **Figure 1** lies to the west of the town of Estcourt? (2)
  - 1.2 Name South Africa's neighbouring states marked **A** and **C**. (2)
  - 1.3 List the names of the provinces marked **B** and **D**. (2)
  - 1.4 Which TWO economic regions are linked by the National Route, the N3, which crosses the topographical map? (2)
  - 1.5 What is the name of the river marked **H** which lies to the north of Estcourt and which is involved in an important water transfer scheme? (1)
  - 1.6 Name the water transfer scheme referred to in Question 1.5, which is marked **G** on **Figure 1**. (1)
- [10]**

**QUESTION 2**

- 2.1 The mountains in the area of the topographical map are all approximately similar in shape and height.
    - 2.1.1 Sketch a side view (profile) of the mountain, along the line marked **A** in blocks B1 and B2 to illustrate the typical shape of the mountains and their slopes. (2)
    - 2.1.2 Label your diagram to show the four typical slope forms. (4)
    - 2.1.3 On the sketch, indicate the position of the resistant horizontal layer of rock. (1)
  - 2.2 Erosion occurs at different rates, e.g. in block E/F10.
    - 2.2.1 Name the physical feature or the landform marked **B** in block E10. (1)
    - 2.2.2 Compare the gradients of the slopes marked **C** and **D** on either side of the feature marked **B**. (2)
    - 2.2.3 On which slope, **C** or **D**, will the rivers flow more turbulently? (1)
    - 2.2.4 In which direction will the watershed at **B** (dotted line) move over time? (1)
- [12]**

**QUESTION 3**

- 3.1 The scenery in the Estcourt area lends itself to good views and leisure activities.
- 3.1.1 What is the name of the game reserve that lies south-west of the Wagendrift Dam Nature Reserve? (1)
- 3.1.2 Calculate the distance in kilometres, from the trigonometrical station in block E4 to the northern end of the Wagendrift Dam wall in block C7. (3)
- 3.1.3 Is the dam wall visible from the trigonometrical station 101? Explain your answer. 1 + 1 = (2)
- 3.2 Flying is an expensive leisure activity and provision has been made for it in block C10. Prevailing winds have to be considered in the construction of runways. The magnetic declination for the mapped area during 2005 is 22° 19' West of True North.
- 3.2.1 Which runway, **G** or **H**, will most probably be used by a plane approaching the airport at a magnetic bearing of 320° 19' in 2005. Explain your choice. 1 + 2 = (3)
- 3.2.2 From which TWO of the eight main directions do winds tend not to blow? (2)
- [11]**

**QUESTION 4**

Refer to the orthophoto map but the topographical map must also be consulted.

- 4.1 Identify the natural features marked **1** in block J6 and **2** in block K7. (2)
- 4.2 Calculate the distance in metres across the meander neck in block M6 along the line marked **3**. (3)
- 4.3 Why would the river appear braided at the point marked **4** in block K9? (2)
- 4.4 Identify the major economic activity in block J1. (1)
- 4.5 Identify the tertiary activity marked **5** in blocks J2 and K1 which is essential to the effectiveness of the activity in Question 4.4. (1)
- 4.6 Refer to blocks K3 and L3 on the orthophoto map.
- 4.6.1 Identify the land-use zone found here. (1)
- 4.6.2 What is the name of the main road that passes through this zone? (1)

- 4.7 Refer to block N2.
- 4.7.1 Identify the land-use. (1)
- 4.7.2 Explain how the relief would influence the demand for residential stands in this area. 1 x 2 = (2)
- 4.8 Which arrow marked **6**, **7**, **8** or **9** in the top right-hand corner of the orthophoto map represents the direction True North? (1)
- 4.9 Give evidence to indicate that the aerial photograph was taken before midday. (2)
- [17]**

**QUESTION 5**

- 5.1 Urban expansion is a common feature of most South African towns. The dotted line, marked **E** in blocks C3 and D 2/3 on the topographical map, indicates the extent of the built-up area of Wembezi in 1975.
- 5.1.1 In which directions has this built-up area expanded since 1975? 2 x 1 = (2)
- 5.1.2 Why has expansion not taken place further to the south or west? 1 x 2 = (2)
- 5.2 Refer to the area marked **F** on the topographical map which represents the area covered by the orthophoto map.
- 5.2.1 Calculate the area in kilometres squared. (6)
- 5.2.2 Approximately what percentage of the orthophoto map coverage is occupied by urban activities? (1)
- 5.2.3 Name **THREE** examples on the topographical and orthophoto maps that can be classified as rural-urban fringe land-uses. (3)
- [14]**

**QUESTION 6**

Environmental issues are of concern in any society today.

- 6.1 Identify the natural feature in the drainage system at 29° 07,2' South and 29° 52,4' East. (1)
- 6.2 What role does this feature (Question 6.1) play in maintaining river systems? 1 x 2 = (2)
- 6.3 How will the expansion of the settlements in blocks E3 and F2 impact on the nearby woodlands? (1)

- 6.4 List TWO negative environmental impacts that could result from your answer to Question 6.3. 2 x 2 = (4)  
[8]

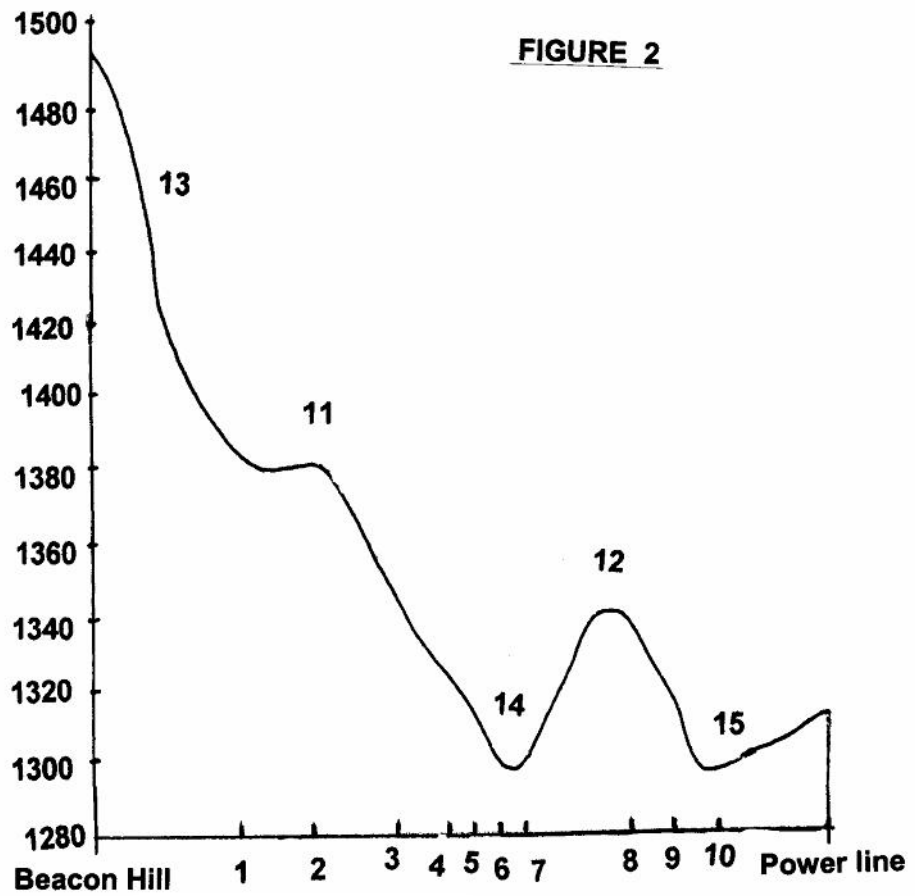
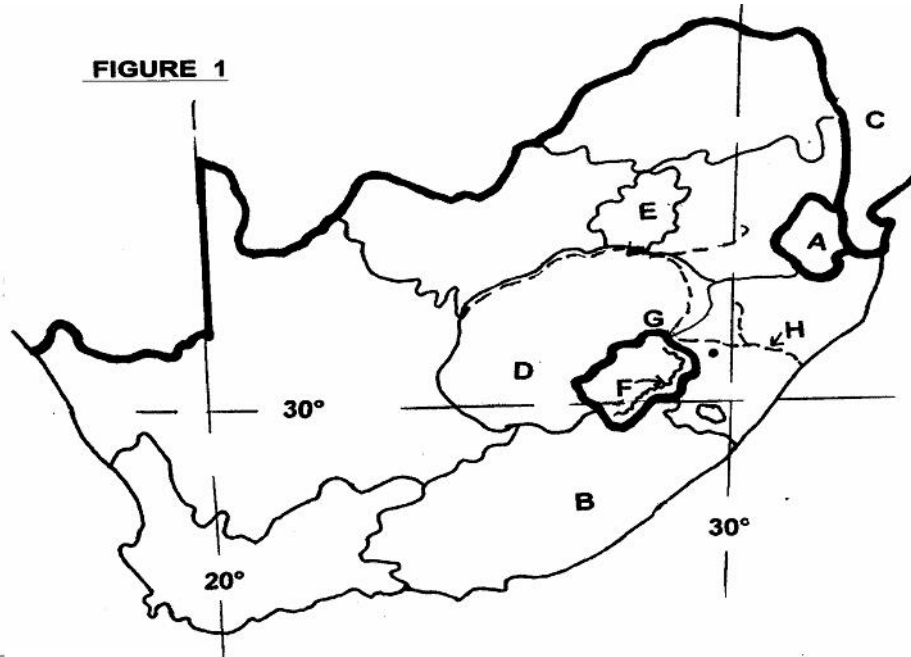
**QUESTION 7**

Refer to **Figure 2** on **page 7**, a cross-section drawn from Beacon Hill in block E10 to the power lines at 29° 02,4' South and 29° 57' East in block C12.

- 7.1 Match each of the following features with ONE of the points marked **1** to **15** along the cross-section:
- 7.1.1 National road
  - 7.1.2 Concave slope
  - 7.1.3 An erosion gully (donga)
  - 7.1.4 Spur
  - 7.1.5 Single power line (5)
- 7.2 Calculate the vertical exaggeration of the cross-section.
- Formula:      Exaggeration =  $\frac{\text{Vertical scale}}{\text{Horizontal scale}}$  (3)  
[8]

**TOTAL: 80**

INFORMATION SHEET 502-1/2 (A)



END

**Please refer to the colours of the topographic map.**

The colours of the map, especially the **brown**, are not quite true. Learners are advised to consult the key or reference at the bottom of the map.

**Verwys asseblief na die kleure op die topografiese kaart.**

Die kleure op die kaart, veral die **bruin**, is nie heeltemal korrek nie. Leerders word aangeraai om die sleutel of verklaring onderaan die kaart te raadpleeg.