Province of the
EASTERN CAPE
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 11

NOVEMBER 2020

GEOGRAPHY P1 EXEMPLAR

MARKS: **150**

TIME: **3 hours**

IGEOGE1

This question paper consists of 9 pages.

INSTRUCTIONS AND INFORMATION

1. The question paper consists of three questions.
2. All diagrams are included in the ANNEXURE.
3. Where possible, illustrate your answers with labelled diagrams.
4. Leave a line between subsections of questions answered.
5. Start EACH question at the top of a new page of a NEW page.
6. Number the questions correctly according to the numbering system used in this question paper.
7. Do NOT write in the margins of the ANSWER BOOK.
8. In SECTION B you are provided with a 1 : 50 000 topographic map (2527 BD HARTBEESPOORT DAM) and an orthophoto map of a part of the mapped area.
9. Show ALL calculations and use the formulae provided, where applicable. Marks will be allocated for these.
10. Indicate the unit of measurement in the final answer of calculations, for example 10 km; 2,1 cm.
11. You may use a non-programmable calculator and a magnifying glass.
12. The area demarcated in RED and BLACK on the topographic map represents the area covered by the orthophoto map.
13. Write neatly and legibly.

SECTION A: THE ATMOSPHERE AND GEOMORPHOLOGY

QUESTION 1

1.1 Choose a term in COLUMN B that matches the description in COLUMN A. Write only the letter (A–I) next to the question numbers (1.1.1 to 1.1.8) in the ANSWER BOOK, for example 1.1.9 J.

COLUMN A		COLUMN B	
1.1.1	Determines the amount of insolation that the earth receives	A	Mozambique
1.1.2	The force that causes air to move from a high pressure to a low pressure	B	geostrophic
1.1.3	Rotational force that deflects winds	C	offshore
1.1.4	Wind that brings heavy rains to India in summer	D	latitude
1.1.5	Wind that flows parallel to the lines of the isobars	E	pressure gradient
1.1.6	Wind that blows from the land to the sea	F	coriolis
1.1.7	Ocean current that originates at the poles	G	monsoon
1.1.8	Contact zone of polar air with warm tropical air	H	front
		I	Benguela

(8 x 1) (8)

1.2 Refer to FIGURE 1.2 on tri-cellular air circulation. Match the descriptions below with one of the POLAR, HADLEY or FERREL cells. Choose the answer and write only the cell next to the question numbers (1.2.1 to 1.2.7) in the ANSWER BOOK, for example 1.2.8 POLAR. You may choose the same cell more than once.

1.2.1 Circulates air between 60°–90° latitudes

1.2.2 Air rises near the equator and diverges polewards

1.2.3 Air circulation is in the mid-latitudes

1.2.4 Associated with tropical air mass circulation

1.2.5 Cold easterly winds originate in this cell

1.2.6 This cell generates the westerly wind belt

1.2.7 Trade winds originate in this cell (7 x 1) (7)

1.3 FIGURE 1.3 is a representation of a Föhn wind.

1.3.1 Why is a Föhn wind an example of a regional wind? (1 x 1) (1)

1.3.2 Name the side of the mountain at **A**, in the formation of Föhn winds. (1 x 1) (1)

1.3.3 Why does rain occur at **A**? (1 x 1) (1)

1.3.4 Discuss why the air descending at **B** will be warm and dry. (2 x 2) (4)

1.3.5 In a paragraph of approximately EIGHT lines, explain the impact that the descending air at **B** will have on people living on that side of the mountain. (4 x 2) (8)

1.4 Refer to FIGURE 1.4 which illustrates the La Niña process.

1.4.1 Why is the La Niña process described as a weather pattern? (1 x 1) (1)

1.4.2 State TWO pieces of evidence from FIGURE 1.4 that indicate that the La Niña process is being illustrated. (2 x 1) (2)

1.4.3 Discuss why the eastern half of Australia would receive heavy rain during the La Niña process. (3 x 2) (6)

1.4.4 Explain the economic impact that the La Niña process would have on Africa. (3 x 2) (6)

1.5 Refer to FIGURE 1.5, an extract on desertification.

1.5.1 According to FIGURE 1.5, what is the main aim of the green belt project? (1 x 1) (1)

1.5.2 What is *desertification*? (1 x 1) (1)

1.5.3 Quote a statement from the extract that lists possible natural causes of desertification. (1 x 1) (1)

1.5.4 Name TWO human activities that contribute to desertification. (2 x 1) (2)

1.5.5 Discuss how the planting of trees can 'serve as a buffer zone' to manage desertification. (1 x 2) (2)

1.5.6 Besides afforestation (planting of trees), explain TWO other ways in which desertification can be managed. (2 x 2) (4)

1.5.7 Comment on the positive impact that the green belt project would have on people living in this region. (2 x 2) (4)

[60]

QUESTION 2

2.1 Choose a term in COLUMN B that matches the description of topography associated with the inclined strata in COLUMN A. Write only the letter (A–H) next to the question numbers (2.1.1 to 2.1.7) in the ANSWER BOOK, for example 2.2.8 I.

COLUMN A		COLUMN B	
2.1.1	Scarp slope faces inwards and the dip slope outwards	A	homoclinal shifting
2.1.2	Steep slope of a homoclinal ridge	B	cuesta
2.1.3	Dipping strata is more than 45°	C	cuesta dome
2.1.4	Gentle slope of a homoclinal ridge	D	scarp
2.1.5	Yields groundwater if rocks are permeable	E	dip
2.1.6	Describes asymmetrical ridges	F	cuesta basin
2.1.7	Dipping strata lies at an angle of 10°–25°	G	hogsback
		H	homoclinal ridge

(7 x 1) (7)

2.2 Refer to FIGURE 2.2 which shows different types of mass movement. Match the descriptions below with the kinds of mass movement in the sketch. Choose the answer and write only the kind of mass movement next to the question numbers (2.2.1 to 2.2.8) in the ANSWER BOOK, for example 2.1.9 soil creep. You may choose the same kind of mass movement more than once.

2.2.1 Rapid flows of mixtures of rock or soil and water

2.2.2 Curved tree trunks and tilted fences are the effects

2.2.3 Most rapid kind of mass movement

2.2.4 Common in arid and semi-arid regions

2.2.5 Earthquakes can trigger this kind of mass movement

2.2.6 Slowest kind of mass movement

2.2.7 A combination of slumps and debris flow

2.2.8 Originates at steep cliff faces (8 x 1) (8)

2.3 Study FIGURE 2.3 showing a canyon landscape.

2.3.1 State evidence from the sketch to justify that this landscape developed from strata of unequal resistance to erosion. (1 x 1) (1)

2.3.2 Describe the climate of this canyon landscape as depicted by FIGURE 2.3. (1 x 1) (1)

2.3.3 Name ONE advantage of this canyon landscape for human activity. (1 x 1) (1)

2.3.4 Discuss the role of the river in the sketch in the formation of canyon landscapes. (2 x 2) (4)

2.3.5 In a paragraph of approximately EIGHT lines, explain how Karoo landforms develop from a canyon landscape. (4 x 2) (8)

2.4 FIGURE 2.4 shows tors.

2.4.1 What are *tors*? (1 x 1) (1)

2.4.2 Name the rock type from which tors develop, evident in the sketch. (1 x 1) (1)

2.4.3 State the igneous intrusion from which tors would originate. (1 x 1) (1)

2.4.4 Discuss the role that igneous intrusions play in the formation of tors. (2 x 2) (4)

2.4.5 In a paragraph of approximately EIGHT lines, explain the formation of tors. (4 x 2) (8)

2.5 Refer to FIGURE 2.5 which shows the typical slope elements/forms associated with a slope.

2.5.1 Identify the slope elements/forms labelled **A**, **B**, **C** and **D**. (4 x 1) (4)

2.5.2 Give ONE characteristic of each of the slope elements/forms labelled **A** and **C**. (1 + 1) (2)

2.5.3 Which slope element is best suited for crop farming? Give a reason for your answer. (1 + 2) (3)

2.5.4 "Slopes provide a valuable piece of land for mankind."

Discuss the significance of slopes for human activity. (3 x 2) (6)

[60]

SECTION B: GEOGRAPHICAL SKILLS AND TECHNIQUES

The questions below are based on the 1 : 50 000 topographical map 2527 DB HATBEESPOORT DAM, as well as the orthophoto map of a part of the mapped area.

QUESTION 3

3.1 Refer to the line that runs from **M** (block **B5**) to **N** (block **A5**) of the aerial cableway on the topographical map.

3.1.1 **Calculate** the average gradient of the cableway from **M** (contour reading 1 235 m) to the top at **N** (trigonometrical beacon 66). Show ALL calculations. Marks will be awarded for calculations.

Formula: Gradient $= \frac{\textit{Vertical interval (VI)}}{\textit{Horizontal equivalent (HE)}}$

(5 x 1) (5)

3.2 FIGURE 3.2 is a cross-section of the climb between **3** and **4** on the orthophoto map.

3.2.1 Calculate the vertical exaggeration of the cross-section. Show all your calculations.

Formula: Vertical exaggeration = $\frac{\textit{Vertical Scale (VS)}}{\textit{Horizontal Scale (HS)}}$

(4 x 1) (4)

3.2.2 Give ONE reason why there is intervisibility between **3** and **4**. (1 x 1) (1)

MAP INTERPRETATION

3.3 Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A–D) in your ANSWERBOOK.

3.3.1 The human-made feature **2** on the orthophoto map is a …

A dam.
B reservoir.
C building.
D water tower.

3.3.2 The feature found at **6** on the orthophoto map is a …

A hospital.
B school.
C dam.
D prison.

3.3.3 The shadows on the slope below **4** on the orthophoto map are found in the south-west, indicating that the photograph was taken at …

A 08:00.
B 10:00.
C 16:00.
D 14:00. (3 x 1) (3)

3.4 Refer to the oblique photograph which was taken from **N** in block **A5** on the topographical map.

3.4.1 Is this photograph *high* or *low* oblique? (1 x 1) (1)

3.4.2 In what direction was the camera pointing when this photograph was taken? (1 x 2) (2)

3.4.3 Identify the holiday resort at **A**. (1 x 1) (1)

3.5 Refer to blocks **B3/4** on the topographical map and photograph in QUESTION 3.5.

3.5.1 Does the mapped area indicate a *cuesta* or *hogsback* landscape? Support your answer with evidence from the topographical map. (1 + 2) (3)

3.5.2 Why is there no development taking place on the lower slopes above Schoemansville? (1 x 2) (2)

GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

3.6 You are currently doing an urban study of Ifafi in block **C5** on the topographical map and you are using paper GIS to assist with the analysis of the area.

3.6.1 What GIS process would be used to produce the paper GIS? (1 x 1) (1)

3.6.2 Identify TWO different layers you would use when analysing the suburban area of Ifafi. (2 x 1) (2)

3.6.3 Give ONE example of spatial data found in block **C5**. (1 x 1) (1)

3.6.4 Recently many of the residents of Ifafi have been complaining about water pollution. Explain how you could use GIS to try and assist the residents to find a solution to the problem. (2 x 2) (4)

[30]

GRAND TOTAL: 150

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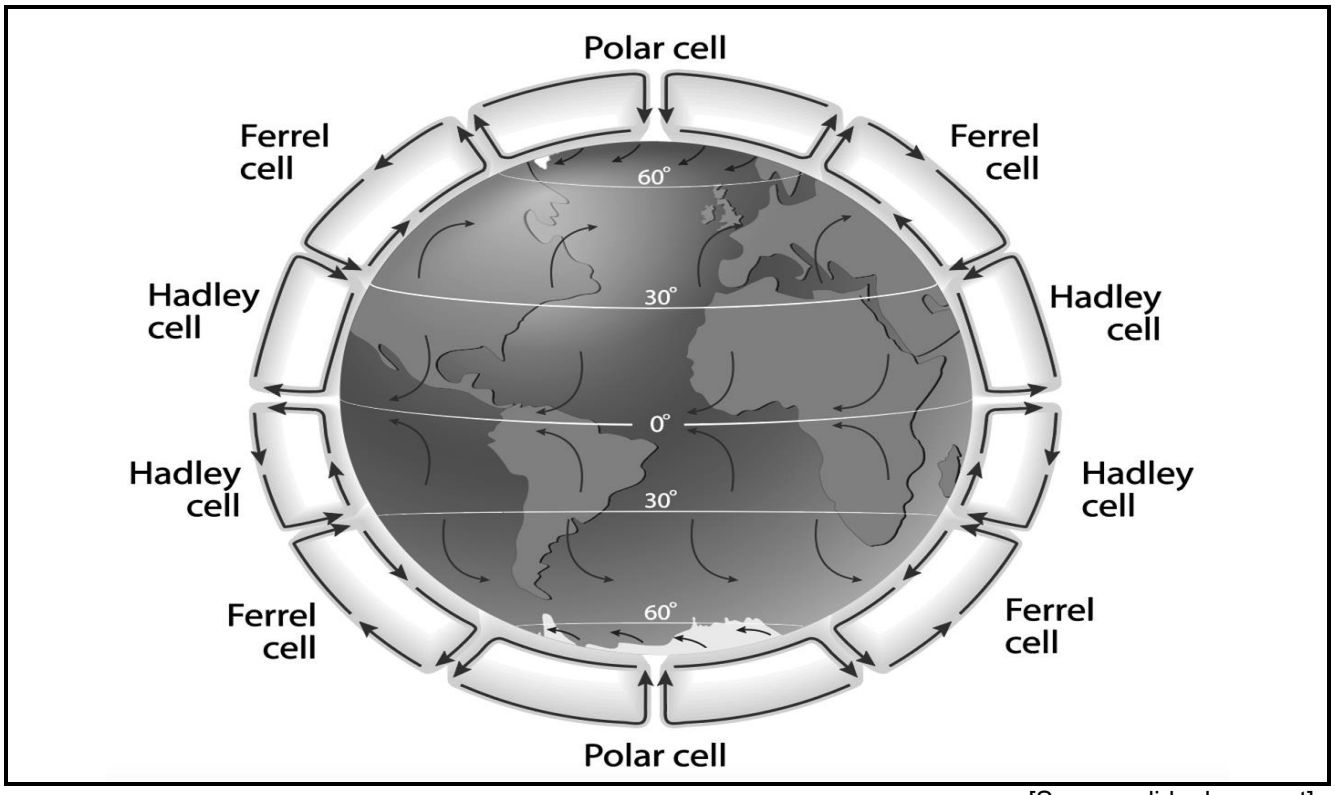
NOVEMBER 2020

GEOGRAPHY P1 ANNEXURE EXEMPLAR

IGEOGE3

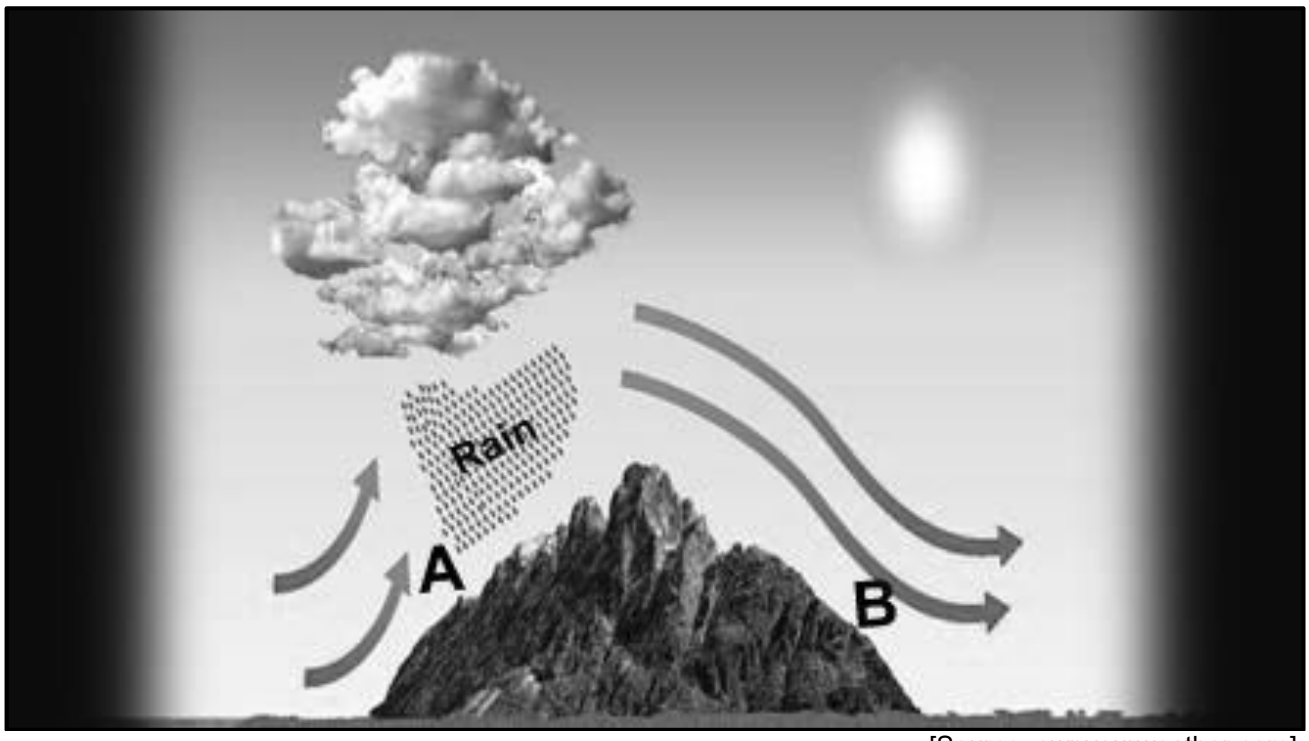
This annexure consists of 7 pages.

FIGURE 1.2: TRI-CELLULAR AIR CIRCULATION



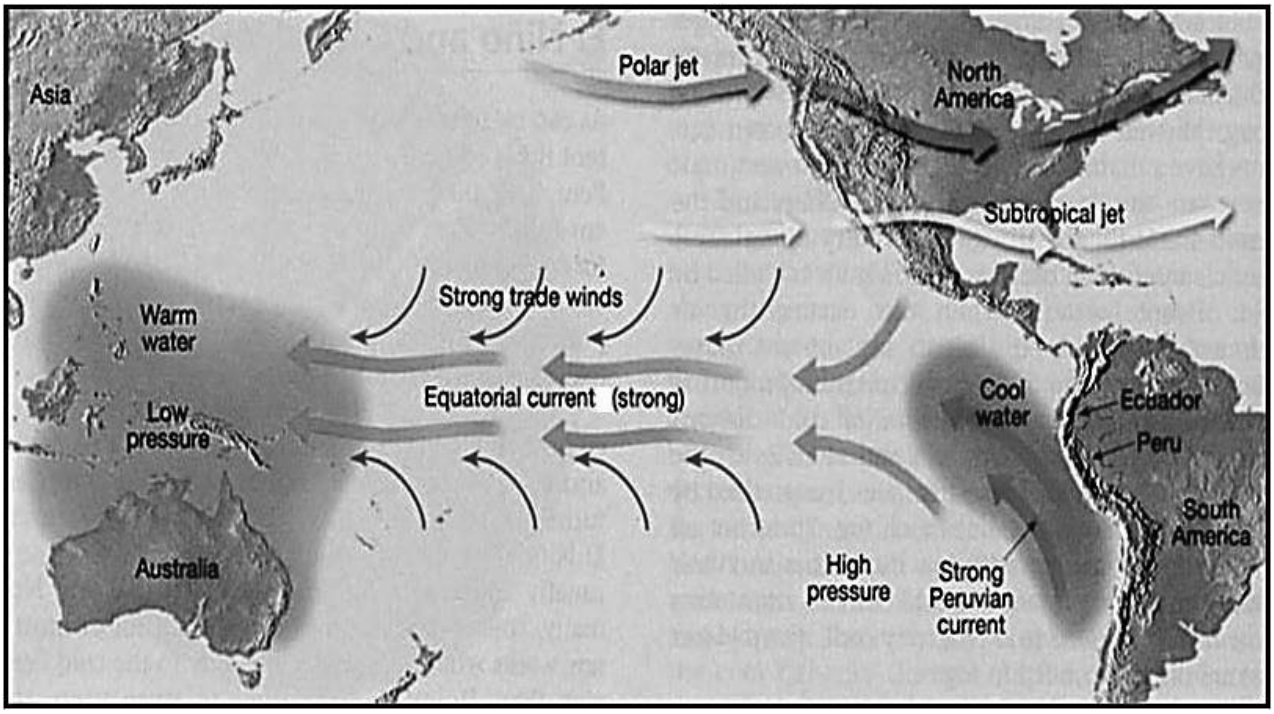
[Source: slideplayer.net]

FIGUUR 1.3: FÕHN WIND



[Source: ownyourweather.com]

FIGURE 1.4: LA NIÑA PROCESS



[Source: wwwcrystal links]

FIGURE 1.5: DESERTIFICATION

AFRICA'S AMBITIOUS GREEN BELT PROJECT

The 15 kilometer (9,3 mile) wide Great Green Wall project stretches over 7 775 km from Senegal on the Atlantic to Eritrea on the Red Sea. The aim was to curb the Sahara Desert's spread. But major challenges remain.

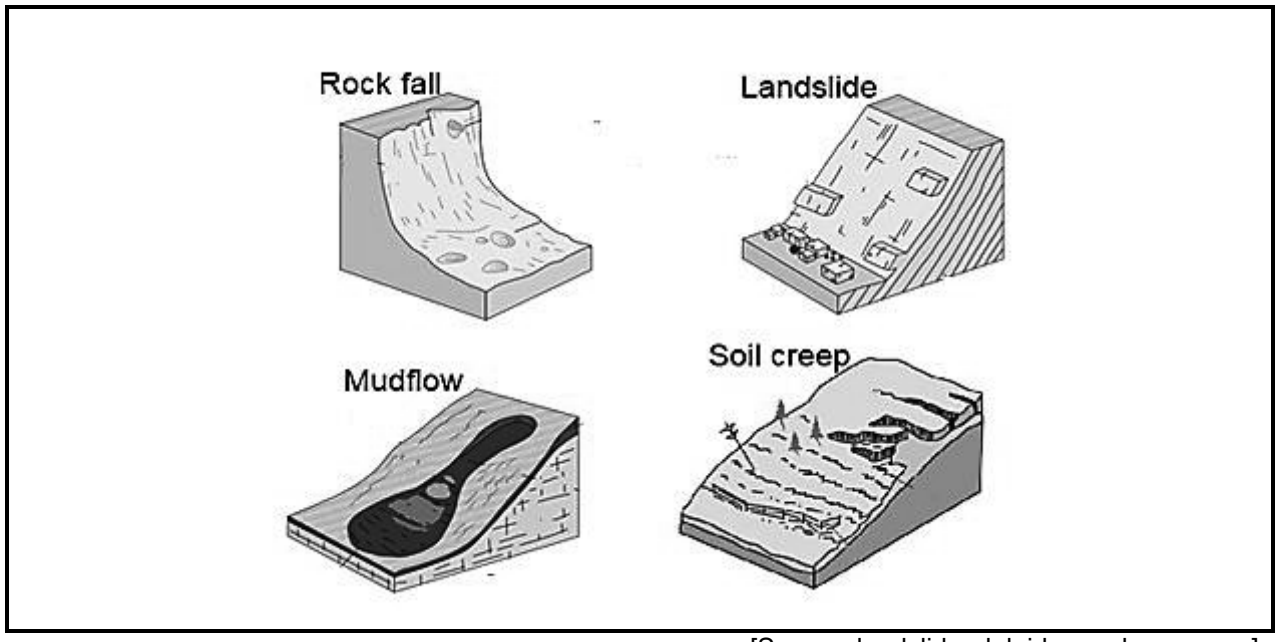
The change in climate and weather patterns is triggering a rapid spread of the Sahara Desert, invading into lands and surrounding huge lakes, according to climate scientists. Seven countries of the Sahel region, an area located just south of the Sahara, therefore initiated a project that will see billions of trees planted across 11 countries by 2030, which will serve as buffer zones to stop the desertification.

The African Union (AU) launched the initiative in 2007 under the name the Great Green Wall.

The Great Green Wall is more than just an environmental project that is intended to restore 100 million hectares of fertile lands in the Sahel, and in the process cut 250 million tons of carbon dioxide from the atmosphere. It aims to create 10 million so-called green jobs.

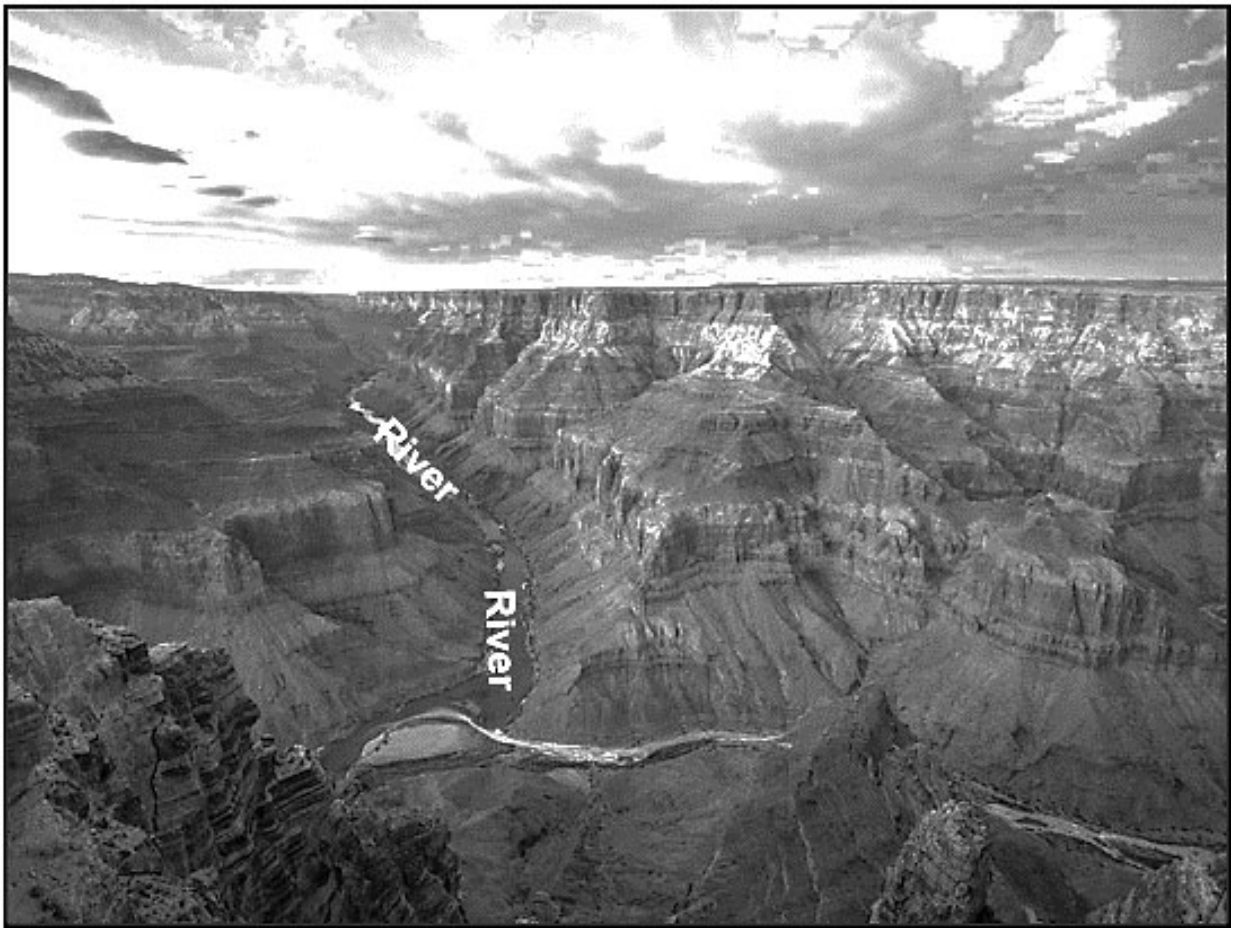
[Adapted from uit www.dw.com]

FIGURE 2.2: TYPES OF MASS MOVEMENT



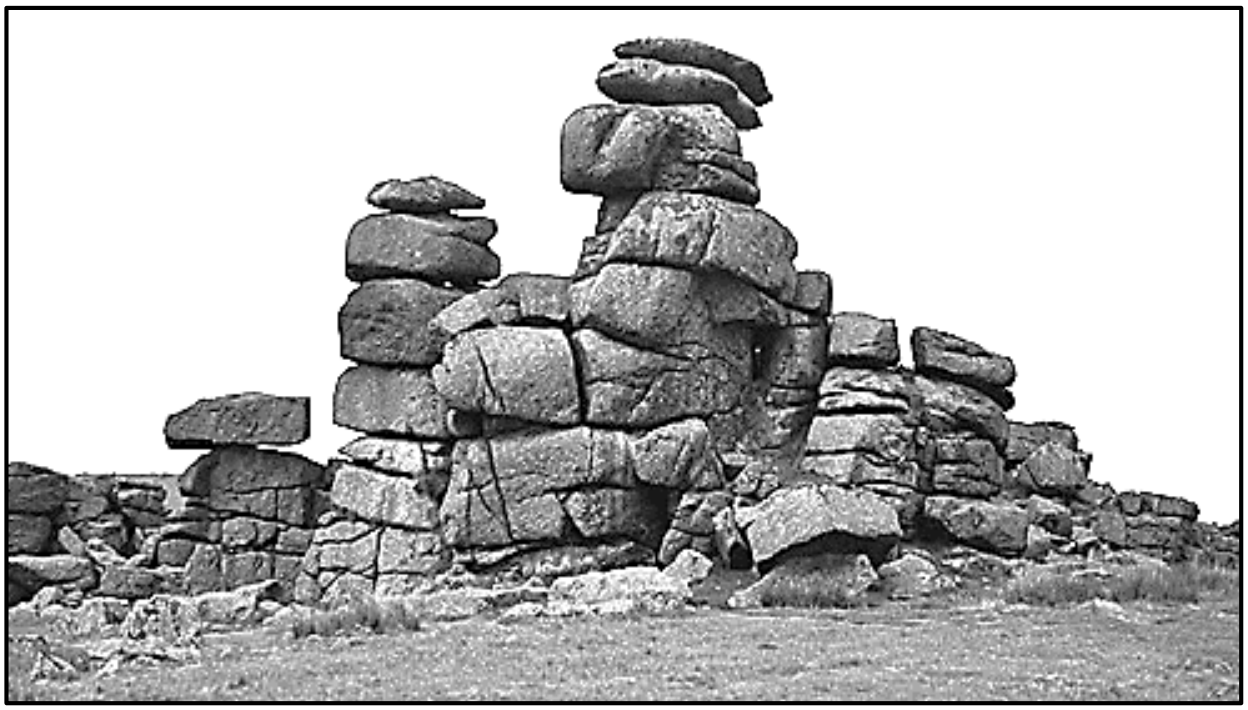
[Source: landslideadelaide.wordpress.com]

FIGURE 2.3: CANYON LANDSCAPE



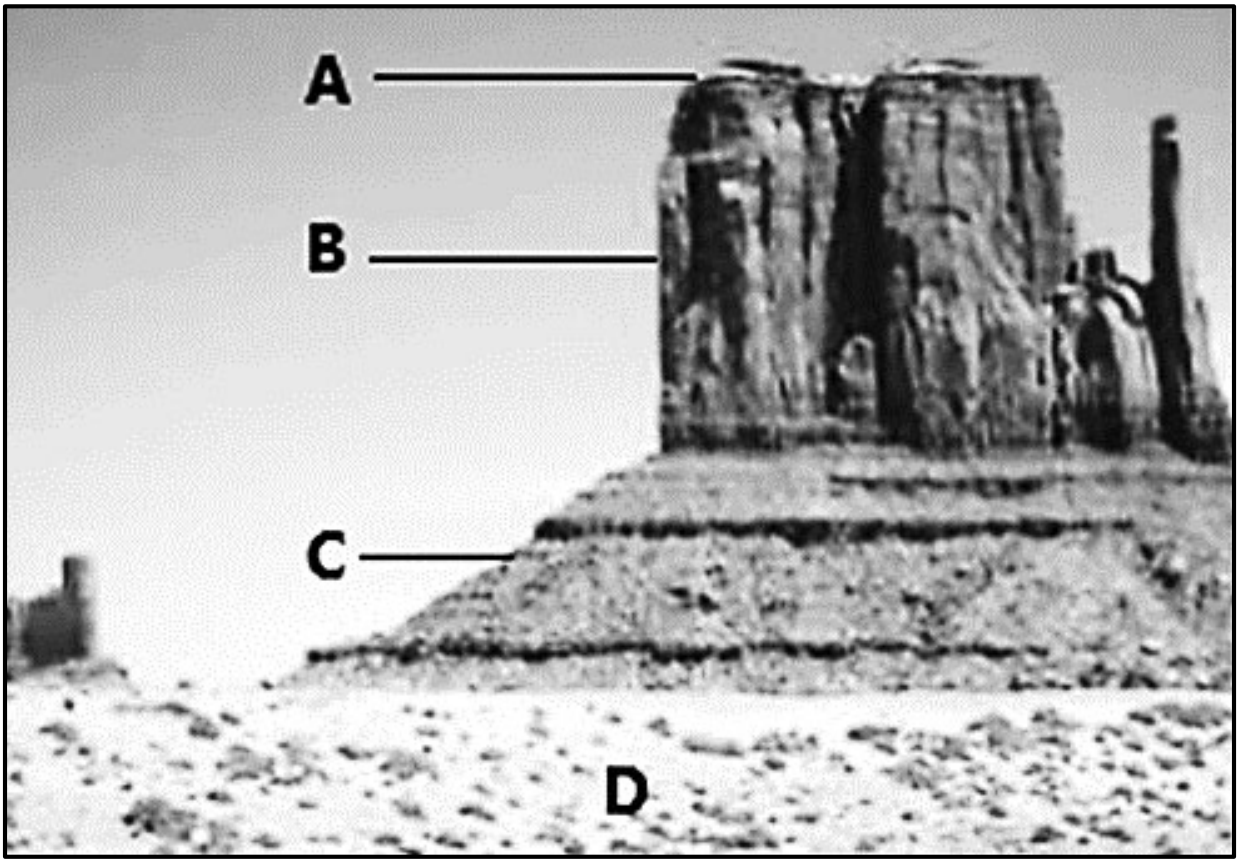
[Source: nationalgeographic.com]

FIGURE 2.4: TORS



[Source: www.clearias.com]

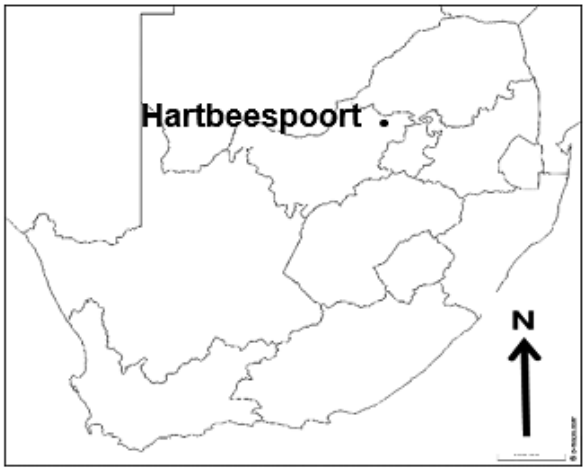
FIGURE 2.5: SLOPES



[Source: nationalgeographic.com]

SECTION B: GENERAL INFORMATION ON HARTBEESPOORT DAM

Coordinates: 25° 44′ 39″ S, 27° 53′ 58″ E



Hartbeespoort Dam (also known as Harties) is an arch type dam situated in the North West Province of South Africa. It lies in a valley to the south of the Magaliesberg mountain range and north of the Witwatersberg mountain range, about 35 kilometres north-west of Johannesburg and 20 kilometres west of Pretoria.

The dam was originally designed for irrigation, which is currently its primary use, as well as for domestic and industrial use.

The town consists of holiday homes and permanent residences around the dam as it is popular with visitors from nearby Gauteng Province.

Hartbeespoort Aerial Cableway is the longest monocableway in Africa.

The following English terms and their Afrikaans translations are shown on the topographical map:

ENGLISH	AFRIKAANS
River	Rivier
Industry	Industrie
Clinic	Kliniek
Landing strip	Landingstrook
Drive-in-theatre	Inryteater
Digging	Grawing
Weir	Stuwal
Canal	Kanaal

FIGURE 3.2

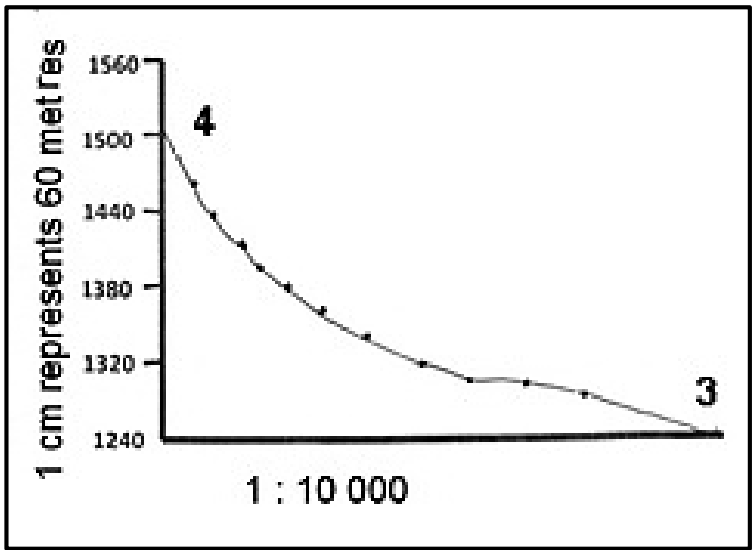
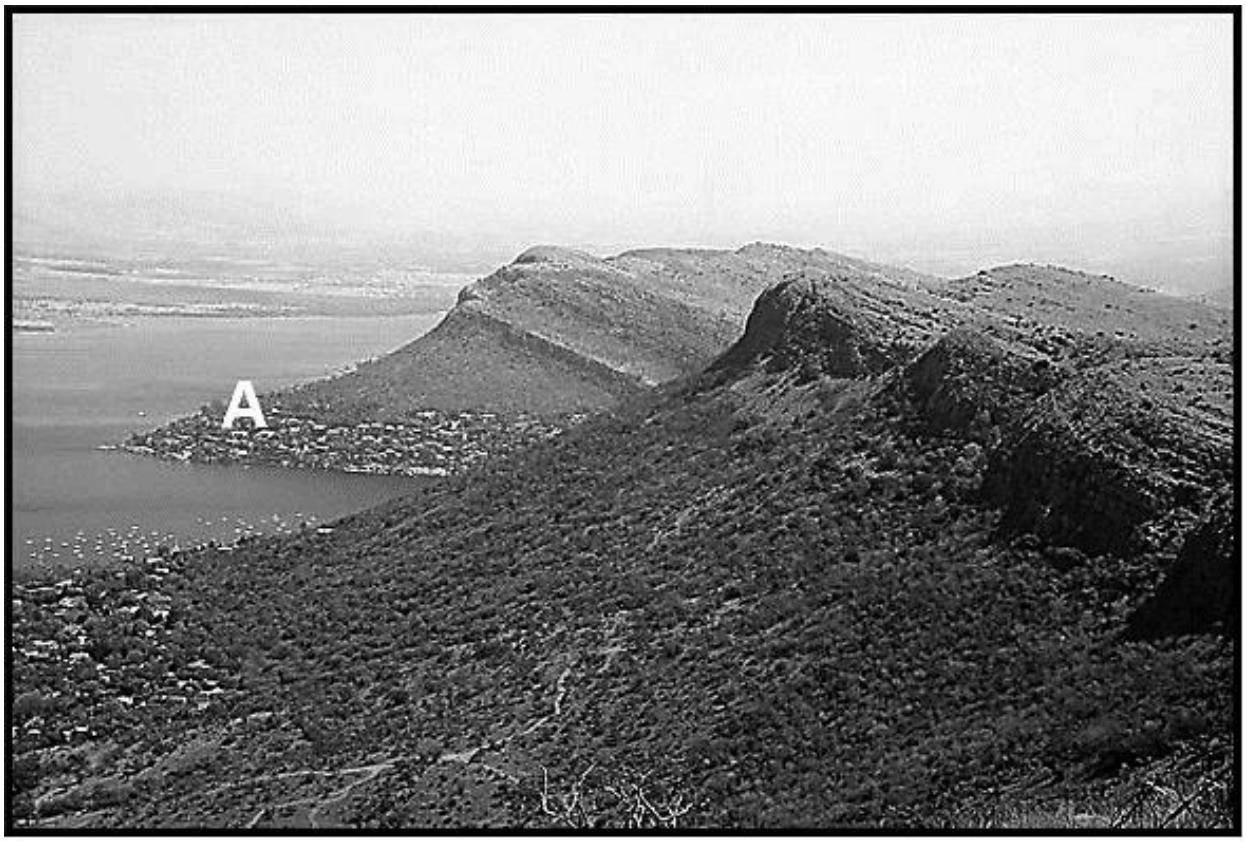


FIGURE 3.4



[Source: https://www.nationalgeographic.org/encyclopedia/escarpment/]

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GEOGRAPHY P1
MARKING GUIDELINE
EXEMPLAR

MARKS: 150

This marking guideline consists of 9 pages.

SECTION A: THE ATMOSPHERE AND GEOMORPHOLOGY

QUESTION 1

1.1	1.1.1	D (latitude) (1)		
	1.1.2	E (pressure gradient) (1)		
	1.1.3	F (Coriolis) (1)		
	1.1.4	G (monsoon) (1)		
	1.1.5	B (geostrophic) (1)		
	1.1.6	C (offshore) (1)		
	1.1.7	I (Benguela) (1)		
	1.1.8	H (front) (1)	(8 x 1)	(8)
1.2	1.2.1	Polar (1)		
	1.2.2	Hadley (1)		
	1.2.3	Ferrel cell (1)		
	1.2.4	Hadley (1)		
	1.2.5	Polar (1)		
	1.2.6	Ferrel (1)		
	1.2.7	Hadley (1)	(7 x 1)	(7)
1.3	1.3.1	It affects only smaller areas and only blows at certain times of the year (1) [**CONCEPT**]	(1 x 1)	(1)
	1.3.2	Windward (1)	(1 x 1)	(1)
	1.3.3	Moist air rising on the windward side of the mountain (1) Cooling causes water vapour to condense to form clouds (1) Clouds are evident at **A** (1) [**ANY ONE**]	(1 x 1)	(1)
	1.3.4	Moisture is released at the windward side (2) Moisture evaporates as air descents (2) The temperature increases adiabatically as air descents (2) [**ANY TWO**]	(2 x 2)	(4)

1.3.5 There is a possibility of fires that can cause destruction (accept examples) (2)
Vegetation/crops can dry out, affecting agriculture (2)
It can cause dehydration of the vulnerable like children and the aged (2)
It can cause snow to melt in certain countries causing avalanches and floods (2)
Due to floods, avalanches can cause widespread destruction and even death (2)
Crops can get washed away (2)
[ANY FOUR] (4 x 2) (8)

1.4 1.4.1 It causes short term changes to the climate. (1)
[CONCEPT] (1 x 1) (1)

1.4.2 Strong trade winds (1)
Low pressure over Australia (1)
Strong equatorial current (1)
[ANY TWO] (2 x 1) (2)

1.4.3 Warm temperatures over Australia causes a low pressure to develop (2)
Strong trade/tropical easterlies winds push more warm water than usual westwards (2)
Large-scale evaporation and condensation occur (2)
Australia would experience above average rainfall (2)
[ANY THREE] (3 x 2) (6)

1.4.4 The eastern part of Africa may experience more rainfall (floods) than usual, which would fill dams and increase the availability of water (2)
More water would be available for industrial, domestic and agricultural use (2)
This would ensure greater food production by subsistence and commercial farmers (2)
Food would be cheaper and more accessible (2)
The number of imports to the country would be reduced (2)
More income from tourism (2)
More job security in farming and industry (2)
[ANY THREE] (3 x 2) (6)

1.5 1.5.1 '... to curb the Sahara deserts spread' (1) (1)

1.5.2 The process where once fertile areas become arid. (1)
[CONCEPT] (1)

1.5.3 'The change in climate and weather patterns ...' (1) (1)

1.5.4 Overgrazing (1)
Over cultivation (1)
Deforestation (1)
Subsistence farming (1)
Poor irrigation practices (1)
[ANY TWO] (2 x 1) (2)

1.5.5 Trees promote infiltration and less run off of fertile soil (2)
Trees act as windbreaks around fertile soil (2)
Trees provide shade and create a nutrient sink (2)
Trees increases evapo-transpiration, therefore also rainfall (2)
[ANY ONE] (1 x 2) (2)

1.5.6 Proper soil management that would include the use of organic fertilisers (2)
Land reform programs / laws that encourage the sustainable management of resources (2)
Land management that encourages the growth of drought resistant crops (2)
Terracing slopes to reduce run off and increase soil moisture (2)
Allowing the land to lie fallow (crop rotation) (2)
[ANY TWO] (2 x 2) (4)

1.5.7 It would restore millions of hectares of fertile lands (2)
This would decrease food insecurity / famine in the SAHEL (2)
There would be a reduction in land degradation (2)
It would help to reduce conflict in the area (2)
There would be jobs created / multiplier effect (2)
It would reduce mass migration from countries in the SAHEL to other parts of Africa (2)
It would reduce carbon dioxide and increase oxygen (2)
[ANY TWO] (2 x 2) (4)
[60]

QUESTION 2

2.1	2.1.1	C (cuesta dome) (1)		
	2.1.2	D (scarp) (1)		
	2.1.3	G (hogsback) (1)		
	2.1.4	E (dip) (1)		
	2.1.5	F (cuesta basin) (1)		
	2.1.6	H (homoclinal ridge)		
	2.1.7	B (cuesta) (1)	(7 x 1)	(7)
2.2	2.2.1	mudflow (1)		
	2.2.2	soil creep (1)		
	2.2.3	rockfall (1)		
	2.2.4	mudflow (1)		
	2.2.5	landslides (1)		
	2.2.6	soil creep (1)		
	2.2.7	landslides (1)		
	2.2.8	rockfall (1)	(8 x 1)	(8)
2.3	2.3.1	Steep and less steep slopes are alternating (1) The slopes are terraced (1) [**ANY ONE**]	(1 x 1)	(1)
	2.3.2	Dry / Low rainfall / High temperatures (1)	(1 x 1)	(1)
	2.3.3	tourism (accept examples) (1)	(1 x 1)	(1)
	2.3.4	The river established its course on the surface sediments (2) River eroded vertically through cracks and joints (2)	(2 x 2)	(4)

2.3.5 The canyon landscape has resistant top layers that form a protective cap with steep cliffs (2)
The layers below the cap are more easily erodible (2)
Back wasting / scarp retreat causes the cap rock to get narrower and the valley floor wider (2)
The canyon landscape now becomes characterised by flat-topped hills separated by wide, flat plains (2)
Mesas are flat topped hills that are capped by resistant sills and steep cliffs (2)
If the resistant cap is less than half the size of the base, it becomes known as a butte (2)
Pointed buttes develop, with a very small cap rock, with steep slopes (2)
Once the resistant cap is eroded away, the erosion of a mesa or butte results in the formation of a conical hill (2)
[ANY FOUR] (4 x 2) (8)

2.4 2.4.1 Mass of loose core stones (1)
[CONCEPT] (1 x 1) (1)

2.4.2 Igneous rock (1) (1 x 1) (1)

2.4.3 Batholith (1)
Laccolith (1)
[ANY ONE] (1 x 1) (1)

2.4.4 Igneous intrusions are the bedrock in which tors have their base (2)
This bedrock undergoes chemical weathering along joints that form core stones under the surface (2) (2 x 2) (4)

2.4.5 Seeping groundwater enters into cracks and joints of granite rocks underneath the earth's surface (2)
Minerals in the rock become dissolved to form a solution (dissolution) (2)
The rock underneath the ground becomes weakened (2)
Removal of overlying rock layers exposes the core stones of the igneous rocks (2)
[ANY FOUR] (4 x 2) (8)

2.5 2.5.1 A – Crest (1)
B – Cliff (1)
C – Talus (1)
D – Pediment (1) (4 x 1) (4)

2.5.2 ***Slope element A***
Soil creep occur (1)
Slope is convex and gentle (1)
[**ANY ONE**]

Slope element C
It is a uniform slope at the base of the cliff (1)
Falling material are deposited (1)
The angle of the slope remains the same (1)
[**ANY ONE**] (1 + 1) (2)

2.5.3 Pediment (D) (1)
Reasons:
The slope is flat/gentle (2)
Ideal for the use of machinery (2)
The construction of infrastructure is easy and cheap (2)
[**ANY ONE**] (1 + 2) (3)

2.5.4 Slopes are tourist attractions (adrenalin sport practised) (2)
It weathers away to form fertile soil (2)
Recreational activities occur (2)
Forestry is practised on the steeper slopes (2)
Flat areas are suitable for farming (2)
[**ANY THREE**] (3 x 2) (6)
[60]

SECTION B: GEOGRAPHICAL SKILLS AND TECHNIQUES

QUESTION 3

3.1 3.1.1

VI = *1 600 m – 1 235 m* ✓
= 365 m ✓

HE = *1,6* ✓ *cm x 500 m*

$G = \frac{365}{800}$ ✓

= 1 : 2,19 / 1 in 2,19 / $\frac{1}{2,19}$ ✓

OR

VI = *1 600 m – 1 235 m* ✓
= 365 m ✓

HE = $\frac{16 \text{ ✓cm x } 100\,000}{500}$

Range for measurement *[1,59 cm to 1,61 cm]*

= 800 m ✓

= 800 m ✓

Range for HE *[795 m – 805 m]*

(One mark for) correct substitution)

$G = \frac{365}{800}$ ✓

= 1 : 2,19 / 1 in 2,19 / $\frac{1}{2,19}$

Range for final answer *[1 : 2,18 – 1 : 2,21]*

(5 x 1) (5)

3.2 3.2 1 **Formula: Vertical exaggeration =** $\frac{\textbf{Vertical scale}}{\textbf{Horizontal scale}}$

= 1/60 ✓ *÷ 1/500* ✓

= 1/60 x 500/1 ✓

= 8,3 times ✓

OR

= 1/6 000 ✓ *÷ 1/50 000* ✓

= 1/6 000 x 50 000/1 ✓

= 8,3 times ✓

(4 x 1) (4)

3.2.2 *There is no obstruction between 3 and 4* ✓
There is no high lying/hill between 3 and 4 ✓
[**ANY ONE**]

(1 x 1) (1)

MAP INTERPRETATION

3.3 3.3.1 *B (1)*

3.3.2 *B (1)*

3.3.3 *C (1)*

(3 x 1) (3)

3.4 3.4.1 *High (1)*

(1 x 1) (1)

3.4.2 *South-westerly (2)*

(1 x 2) (2)

3.4.3 *Kosmos (1)*

(1 x 1) (1)

3.5 3.5.1 *Cuesta (1)* (1 x 1) (1)

Evidence
Scarp slope (nearest to dam) has contour lines close together and more gentle dip slope (2)
The dip slope is gentle (10°–25°) to the horizontal (2)
[**ANY ONE**] (1 x 2) (2)

3.5.2 *Protected area / buffer zone (2)*
Gradient maybe too steep – rock falls (2)
[**ANY ONE**] (1 x 2) (2)

GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

3.6 3.6.1 *Data layering/Over-layering/Thematic layering/Layering*
Can explain the process / Write a description (1)
[**ANY ONE**] (1 x 1) (1)

3.6.2 *Transport network – roads and railway lines (1)*
Recreational areas – showing the location of all parks, open areas (1)
Residential suburbs (1)
Industrial areas / sewerage works etc. (1)
[**ANY TWO**] (2 x 1) (2)

3.6.3 *Roads (1)*
Rivers (1)
Houses and buildings (1)
Sewerage works (1)
[ANY ONE – ACCEPT OTHERS] (1 x 1) (1)

3.6.4 *Analyse where the industrial areas are located in relation to rivers / other water sources. (2)*
By pinpointing specific industries within a certain radius of a water source, you may be able to locate the cause. GIS software will allow you to measure distances with ease. (2)
An aerial photograph of the area can be added as a layer or 'theme' which may also shed some light on the matter. (2)
Smoke plumes may be visible; again, indicating which industries may be responsible for air pollution. (2)
[**ANY TWO**] (2 x 2) (4)
[30]

GRAND TOTAL: 150