



Education

KwaZulu-Natal Department of Education
REPUBLIC OF SOUTH AFRICA

GEOGRAPHY P1

COMMON TEST

JUNE 2017

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

MARKS: 225

TIME: 3 hours

This question paper consists of 12 pages and
a 9 page Annexure.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of THREE questions.
2. Answer ALL THREE questions of 75 marks each.
3. ALL diagrams are included in the ANNEXURE.
4. Leave a line between subsections of questions answered.
5. Start EACH question at the top of a NEW page.
6. Number the answers correctly according to the numbering system used in this question paper.
7. Do NOT write in the margins of your ANSWER BOOK.
8. Where possible, illustrate your answers with labelled diagrams.
9. Write clearly and legibly.

SECTION A: CLIMATE, WEATHER AND GEOMORPHOLOGY**QUESTION 1**

- 1.1 Study FIGURE 1.1 showing a synoptic weather map dated 2016-02-16.
- 1.1.1 Give the isobaric interval on the synoptic weather map. (1 x 1)(1)
- 1.1.2 Describe the pressure gradient at A. (1 x 1)(1)
- 1.1.3 State the cloud cover at Port Elizabeth. (1 x 1)(1)
- 1.1.4 Give the dew point temperature at Durban. (1 x 1)(1)
- 1.1.5 State the wind speed at Maputo. (1 x 1)(1)
- 1.1.6 Refer to the low pressure cell labelled B.
- (a) Name this low pressure cell. (1 x 1)(1)
- (b) Describe the circulation of air around the cell. (1 x 1)(1)
- 1.1.7 Name the weather phenomenon labelled C responsible for the termination of Berg winds (1 x 1)(1)
- 1.2 Give ONE word/term for each of the following descriptions. Write ONLY the word/term next to the question number (1.2.1 – 1.2.7) in the ANSWER BOOK.
- 1.2.1 The area within a drainage basin separating tributaries.
- 1.2.2 High-lying area separating two drainage basins.
- 1.2.3 The point at which a tributary joins the main stream.
- 1.2.4 Rivers that are located in humid climates where rainfall exceeds evaporation rates and these rivers flow all year round.
- 1.2.5 Type of river flow in which water moves in a bubbling, turbulent manner and continually changes levels.
- 1.2.6 The ultimate base level of a river.
- 1.2.7 Raised natural banks of a river formed by flooding. (7 x 1)(7)

SATELLITE IMAGE OF A MID-LATITUDE CYCLONE

- 1.3 FIGURE 1.3 shows a satellite image of a mid-latitude cyclone, west of the South Western Cape, approaching South Africa.
- 1.3.1 Which part of South Africa is mostly effected by mid-latitude cyclones? (1 x 1)(1)
- 1.3.2 During which season was this satellite image taken? (1 x 1)(1)
- 1.3.3 Give ONE reason to support your answer to QUESTION 1.3.2. (1 x 2)(2)
- 1.3.4 Mention, with a reason, ONE weather condition that will be experienced once the cold front of this mid latitude cyclone passes over Cape Town. (2 x 2)(4)
- 1.3.5 Discuss, in approximately eight lines, the impact of weather conditions associated with the passage of the cold front, on farmers and inhabitants of South Africa. (4 x 2)(8)

VALLEY CLIMATE

- 1.4 Study FIGURE 1.4 showing temperature inversion in a valley in the Southern Hemisphere at night.
- 1.4.1 Define the term *temperature inversion*. (1 x 1)(1)
- 1.4.2 Give a reason for the temperature inversion occurring in the valley. (1 x 2)(2)
- 1.4.3 Give ONE effect that temperature inversion can have on the weather in a valley. (1 x 2)(2)
- 1.4.4 Describe TWO conditions necessary for the formation of frost on the valley floor in winter. (2 x 1)(2)
- 1.4.5 As head of the Agricultural Institute of South Africa what advice would you offer to a young emerging farmer in the planning of his farming activities in this valley at points A, B and C. (3 x 2)(6)

RIVER PROFILE

- 1.5 Study FIGURE 1.5 showing the longitudinal profile of a river.
- 1.5.1 Provide a label for the origin of the river labelled **A**. (1 x 1)(1)
- 1.5.2 Does this river have a concave or multi-concave profile? (1 x 1)(1)
- 1.5.3 What is the difference between a longitudinal and cross profile of a river? (2 x 2)(4)
- 1.5.4 Mention ONE characteristic of a graded river. (1 x 2)(2)
- 1.5.5 Account for a graded river having a v-shaped valley in the upper course and a u- shaped valley in the lower course. (2 x 2)(4)
- 1.5.6 Suggest TWO ways how rejuvenation could change the fluvial features along the course of a river. (2 x 2)(4)

RIVER SYSTEM

- 1.6 Study FIGURE 1.6, which represents a river system.
- 1.6.1 Define the term *river system*. (1 x 1)(1)
- 1.6.2 Identify the stream channel pattern of the main river in this river system. (1 x 1)(1)
- 1.6.3 Name the landform that will develop if a meander is cut off from the main stream. (1 x 1)(1)
- 1.6.4 Why did a wetland develop in the lower course of this river system? (1 x 2)(2)
- 1.6.5 Explain ONE way how humans can benefit from farming on a floodplain of a river system. (1 x 2)(2)
- 1.6.6 Write a paragraph (approximately 8 lines) in which you explain the formation of the delta where the river enters the ocean. (4 x 2)(8)
- [75]**

QUESTION 2

2.1 Refer to FIGURE 2.1, which shows the position of anticyclones over South Africa. Indicate whether each of the statements below refers to anticyclone A, B or C. Write only the letter (A, B or C) next to the question number (2.1.1 – 2.1.7) in the ANSWER BOOK.

2.1.1 An alternate name for this cell is St Helena high.

2.1.2 In summer this pressure cell is found at a higher altitude due to surface heating.

2.1.3 The subsiding air forms an inversion layer in winter that prevents moist air from reaching the interior.

2.1.4 The ridging of this pressure cell results in rainfall over the South-western Cape.

2.1.5 The subsiding air causes semi-arid conditions on the West Coast of South Africa.

2.1.6 This pressure cell is generally associated with fog and reduced visibility.

2.1.7 Sometimes this pressure cell is known as a blocking high when it is in the path of a mid-latitude cyclone.

(7 x 1) (7)

- 2.2 Chose the concept from COLUMN B that matches the description in COLUMN A. Write only the letter from COLUMN B (A – I) next to the question number (1.2.1 – 1.2.7), for example 1.2.9 L.

COLUMN A	COLUMN B
2.2.1 a stream joining a large river.	A antecedent
2.2.2 process where one river captures the waters of another river through headward erosion.	B episodic
2.2.3 type of drainage pattern that occurs when the river is older than the landscape over which it flows..	C tributary
2.2.4 a river that flows every year in the rainy season only.	D abstraction
2.2.5 the process by which very small particles are carried by the river.	E river capture
2.2.6 when the watershed moves in the direction of the less energetic river.	F superimposed
2.2.7 type of drainage pattern that occurs when the river is younger than the landscape over which it flows.	G periodic
2.2.8 the upper level of underground saturated rock.	H suspension
	I water table

(8 x 1)(8)

TROPICAL CYCLONE

- 2.3 Study FIGURE 2.3 which shows a satellite image and an artical on tropical cyclone Enawo.
- 2.3.1 On what date did cyclone Enawo strike the island of Madagascar? (1 x 1)(1)
- 2.3.2 How many cyclones occurred before Enawo in the current cyclone season? (1 x 1)(1)
- 2.3.3 Name ONE condition that would have favoured the development of Enawo. (1 x 1)(1)
- 2.3.4 Explain what you understand by a *category 4 storm*. (2 x 1)(2)

- 2.3.5 Refer to the statement 'local residents reported an unusual half-hour in the eye of the storm'.
- (a) Why do they describe the weather conditions in the eye as unusual? (1 x 2) (2)
- (b) Explain what causes the unusual conditions in the eye. (1 x 2) (2)
- 2.3.6 Explain a reason for the rapid decay of cyclone Enawo. (1 x 2) (2)
- 2.3.7 Suggest the positive impact cyclone Enawo had on the island of Madagascar. (2 x 2) (4)

BERG WIND

- 2.4 Refer to FIGURE 2.4 showing the occurrence of berg winds
- 2.4.1 During which season do berg wind conditions prevail in South Africa? (1 x 1) (1)
- 2.4.2 Identify the type of low pressure, visible in FIGURE 2.4, which plays a role in the development of berg winds. (1 x 1) (1)
- 2.4.3 Describe the cloud cover condition that exist during the occurrence of a berg wind. (1 x 1) (1)
- 2.4.4 Explain why berg winds will result in warm, dry conditions along the south coast of South Africa. (2 x 2) (4)
- 2.4.5 Veld fires often accompany berg winds. Write a paragraph (approximately 8 lines) in which you discuss preventative measures that can be introduced to reduce the spreading of veld fires. (4 x 2) (8)

GROUND WATER

- 2.5 Refer to FIGURE 2.5, which illustrates factors that could influence the amount of ground water in the soil, and answer the questions that follow.
- 2.5.1 Define the term *ground water*. (1 x 1) (1)
- 2.5.2 Differentiate between the terms *infiltration* and *run-off*. (2 x 1) (2)
- 2.5.3 Explain the role that ground water plays in the discharge (stream flow) of a permanent river during the dry season? (1 x 2) (2)
- 2.5.4 What effect would uncontrolled extraction of ground water for farming and industrial activities have on the water table and the natural vegetation in the area? (2 x 2) (4)
- 2.5.5 Explain THREE natural factors that can cause the water-table level to rise. (3 x 2) (6)

CATCHMENT MANAGEMENT

- 2.6 Refer to the extract labelled FIGURE 2.6 on catchment management.
- 2.6.1 Define the term catchment management. (1 x 1)(1)
- 2.6.2 Give TWO reasons why our catchment areas need to be managed effectively. (2 x 2) (4)
- 2.6.3 Explain the impact of increased industrialisation on the health of a drainage basin. (1 x 2) (2)
- 2.6.4 Write a paragraph (approximately 8 lines) in which you discuss ideas to rehabilitate (make good) South Africa's catchment areas and drainage basins. (4 x 2) (8)
- [75]**

SECTION B: RURAL AND URBAN SETTLEMENT

QUESTION 3

3.1 Refer to FIGURE 3.1 which shows different types of settlements. Match the type of settlements in the diagram with the descriptions below. Write only the letter (A – E) next to the question number (3.1.1 – 3.1.8) in your ANSWER BOOK. You may use the same letter for more than one question.

3.1.1 Settlement with a dispersed pattern.

3.1.2 The shape of this settlement is a cross-road.

3.1.3 Settlement built to protect cattle.

3.1.4 Settlement where farmers can make independent decisions.

3.1.5 Settlement where farmers live and work at their place of work.

3.1.6 A stellar settlement.

3.1.7 Settlement with a linear shape.

3.1.8 Settlement most likely to be affected by crime. (8 x 1) (8)

3.2 Choose a statement from Column A that matches a term in Column B. Write only the letter (A-H) next to the correct number (3.2.1 – 3.2.7) e.g. 3.2.8 I.

COLUMN A		COLUMN B	
3.2.1	Process whereby there is an increase in the number of people living in urban areas.	A	Urban Profile
		B	Urban expansion
3.2.2	Expansion of a city along a transport network.	C	Urban sprawl
		D	Urbanisation
3.2.3	Formless expansion of a city.	E	Urban morphology
3.2.4	The side view of the city.	F	Urban growth
3.2.5	The external appearance of a settlement.	G	Urban ribbon development
3.2.6	Physical growth of a town or city.	H	Urban hierarchy
3.2.7	The increase in the percentage of people living in urban areas.		

(7 x 1) (7)

RURAL SETTLEMENT ISSUES

- 3.3 Refer to FIGURE 3.3 to answer the following questions.
- 3.3.1 Define the term rural depopulation. (1 x 1)(1)
- 3.3.2 Give TWO socio-economic factors that attract people to the area shown in photograph **B**. (2 x 1)(2)
- 3.3.3 Evaluate the impact of migration of people on the area shown in photograph **A**. (2 x 2)(4)
- 3.3.4 Suggest THREE measures that can be introduced to slow down the migration of people shown in photograph **A**. (2 x 3)(6)

LAND REFORM

- 3.4 Study FIGURE 3.4 based on land reform and answer the questions that follow.
- 3.4.1 What is the main aim of land reform? (1 x 1)(1)
- 3.4.2 Distinguish between the terms *land restitution* and *land tenure reform* as mentioned in FIGURE 3.4. (2 x 1)(2)
- 3.4.3 Quote ONE measure introduced by TSB Sugar Holdings to support emerging farmers. (1 x 1)(1)
- 3.4.4 Why is the Department of Land Affairs in partnership with TSB Sugar Holding's in its and reform projects? (1 x 2)(2)
- 3.4.5 Suggest TWO reasons for including local communities in TSB Sugar Holding's land reform process. (2 x 2)(4)
- 3.4.6 In a paragraph (approximately 8 lines) discuss the challenges experienced in implementing land reform in South Africa. (4 x 2)(8)

LAND-USE ZONES

3.5 Study FIGURE 3.5 showing Land-Use Zones.

- 3.5.1 Define the term land-use zone. (1 x 1) (1)
- 3.5.2 Which land-use model does FIGURE 3.5 represent? (1 x 1) (1)
- 3.5.3 Describe ONE feature of the land-use model mentioned in QUESTION 3.5.2. (1 x 2) (2)
- 3.5.4 Explain TWO locational advantages residential area labelled 4 enjoys in this model. (2 x 2) (4)
- 3.5.5 The CBD in this model is centrally located. Evaluate why the trend of central location of CBD has changed in most modern cities. (3 x 2) (6)

INFORMAL SETTLEMENT

3.6 Study FIGURE 3.6 showing Informal Settlements.

- 3.6.1 What is an *informal settlement*? (1 x 1) (1)
- 3.6.2 State ONE reason for the development of an informal settlement. (1 x 1) (1)
- 3.6.3 With reference to the FIGURE 3.6 state ONE physical problem that this settlement may experience due to its location. (1 x 1) (1)
- 3.6.4 Explain why informal settlements are often found in the outskirts of urban settlements in South Africa. (2 x 2) (4)
- 3.6.5 Informal settlements are increasing in South Africa, in a paragraph of about EIGHT lines explain why this trend should be discouraged. (4 x 2) (8)

[75]

TOTAL MARKS: 225



Education

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GEOGRAPHY P1

ANNEXURE

COMMON TEST

JUNE 2017

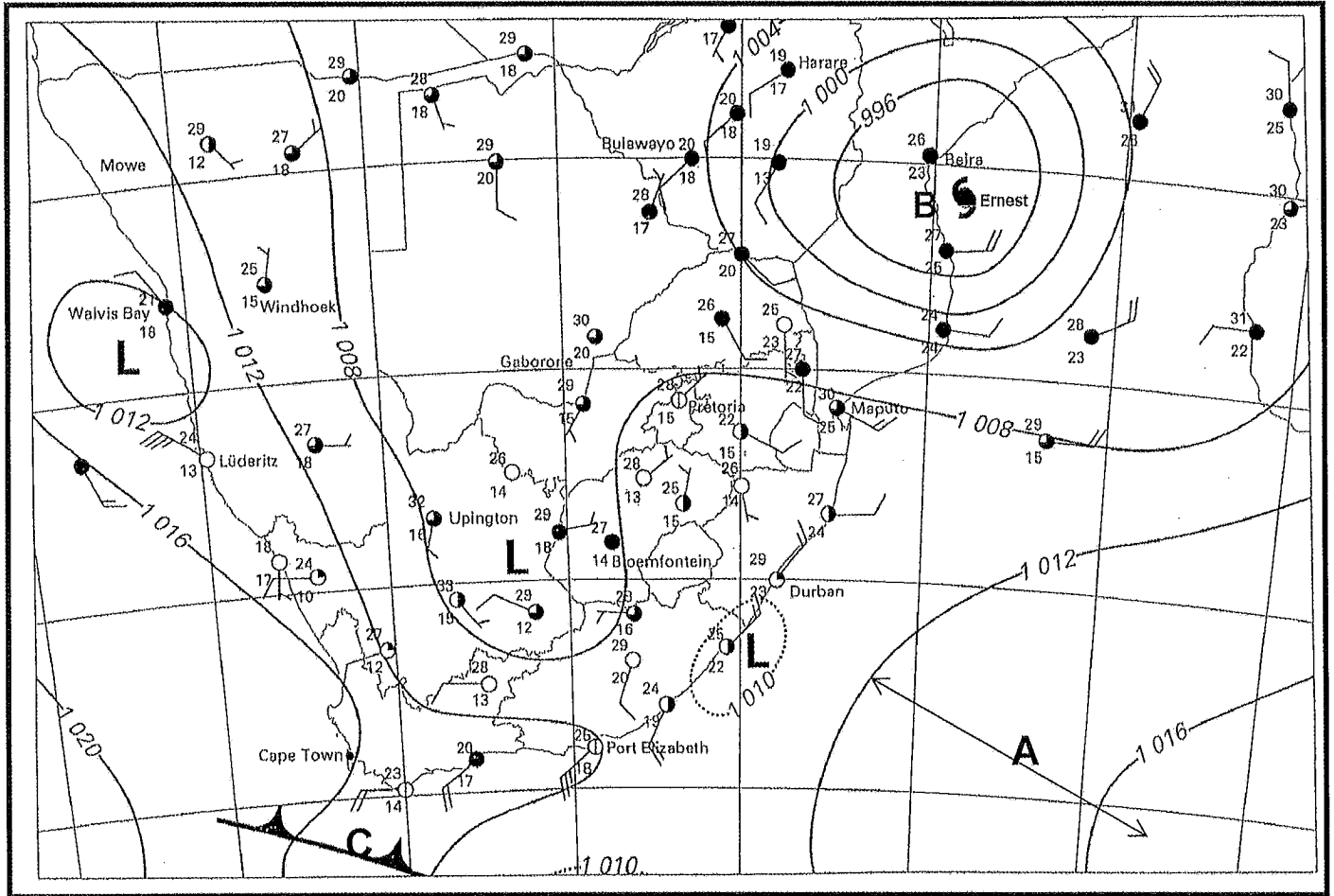
**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

This Annexure consists of 9 pages.

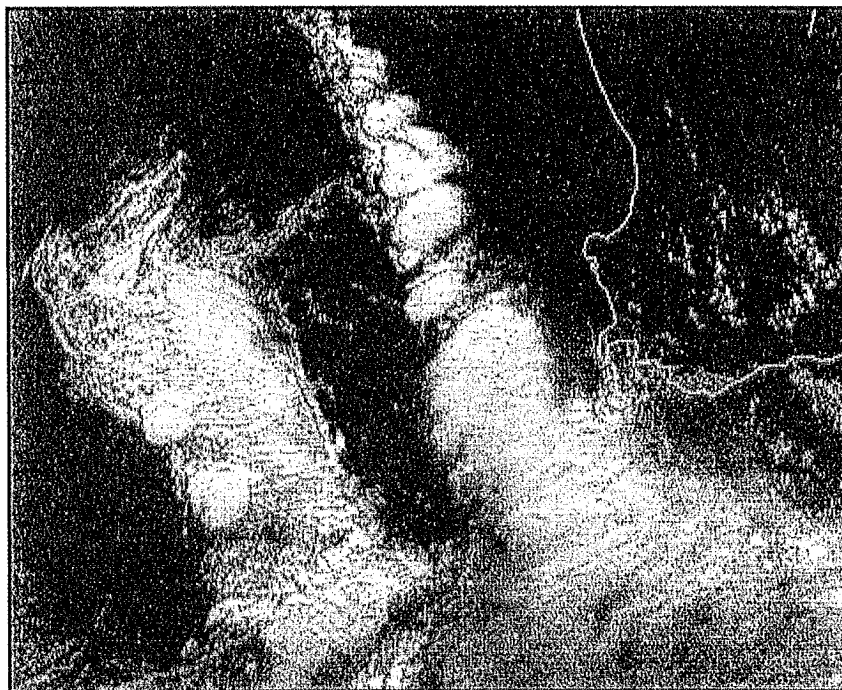
FIGURE 1.1: SYNOPTIC WEATHER MAP

DATE: 2016-02-16



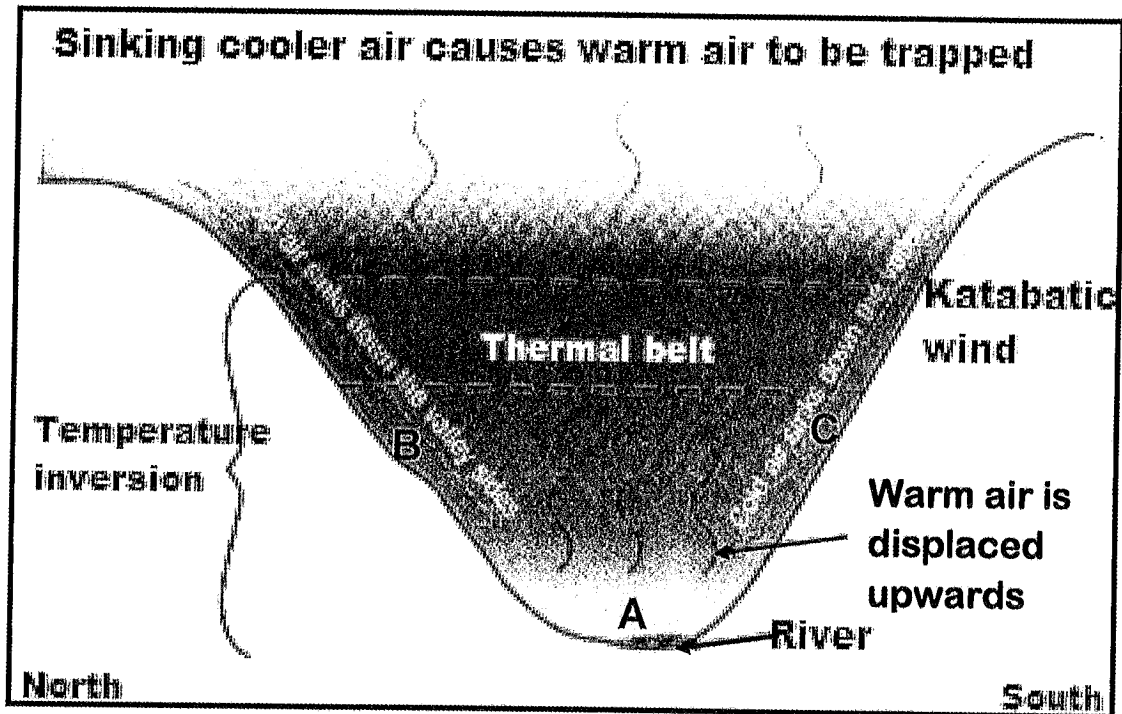
[Adapted from South African Weather Services]

FIGURE 1.3: SATELLITE IMAGE OF A MID-LATITUDE CYCLONE



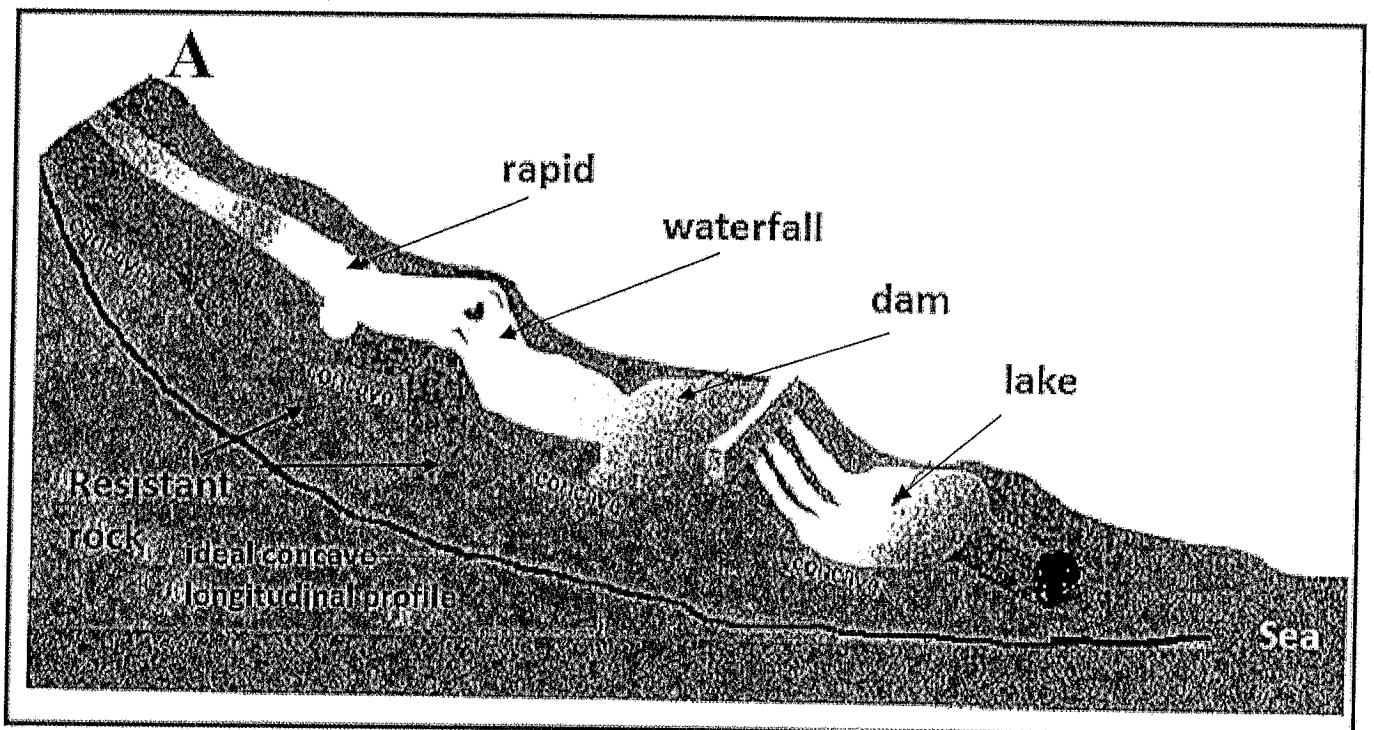
[Adapted from South African Weather Services]

FIGURE 1.4: VALLEY IN THE SOUTHERN HEMISPHERE



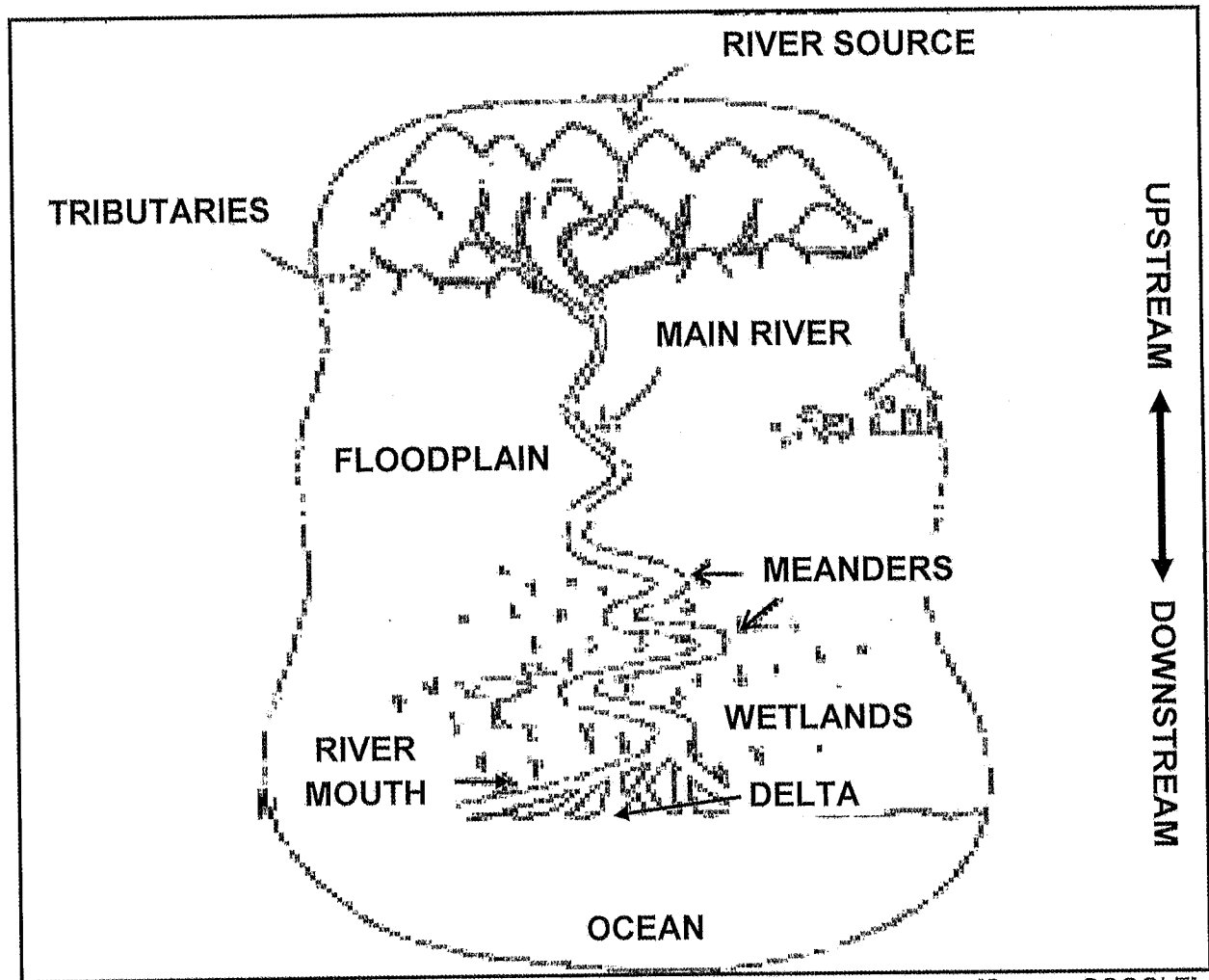
[Source: GOOGLE]

FIGURE 1.5: RIVER PROFILE



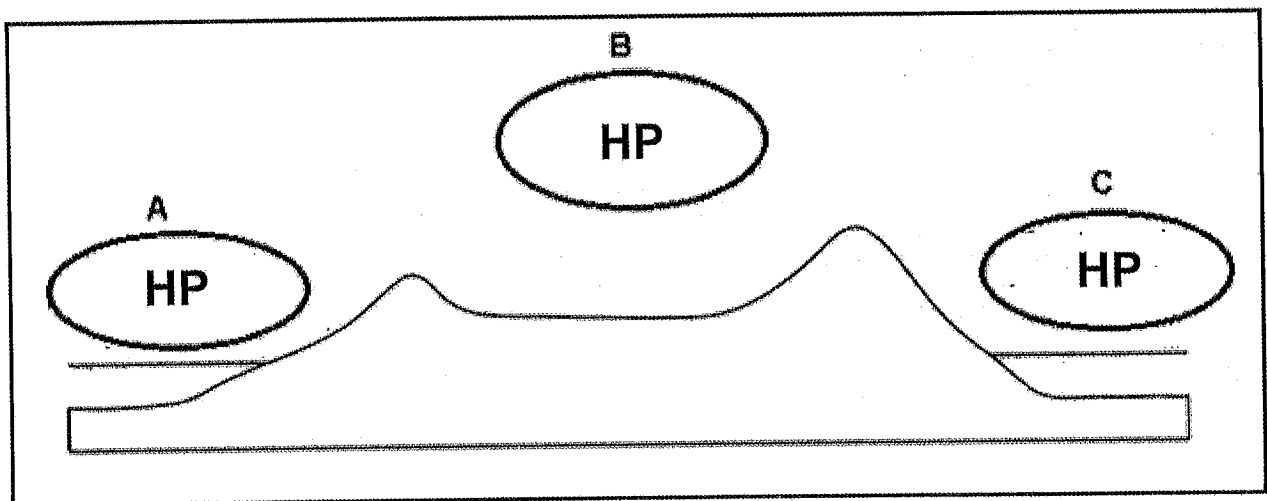
[Adapted from Processes and Landforms by Alan Clowes and Peter Comfort]

FIGURE 1.6: A RIVER SYSTEM



[Source: GOOGLE]

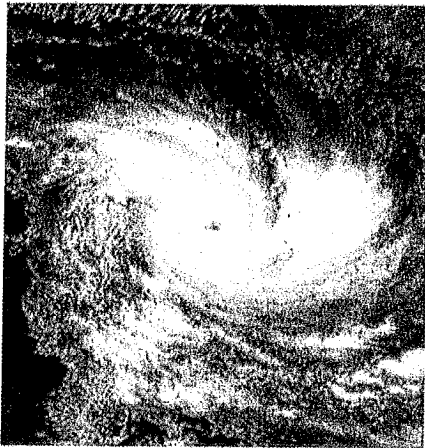
FIGURE 2.1: ANTICYCLONES OVER SOUTH AFRICA



[Source: Adapted from South African Weather Patterns]

FIGURE 2.3: TROPICAL CYCLONE

CATEGORY 4 TROPICAL CYCLONE ENAWO HITS MADAGASCAR

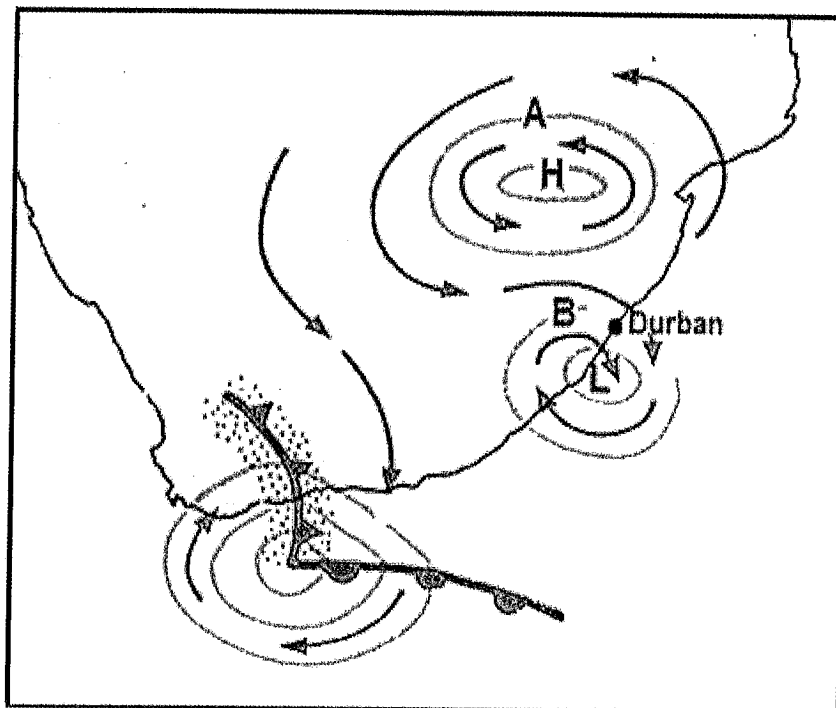


Forming as a moderate tropical storm on 3 March, Enawo initially drifted and intensified slowly over the Indian Ocean. It strengthened into a tropical cyclone on 5 March and further an intense tropical cyclone on 6 March. Enawo made landfall over Sava Region on 7 March just after reaching peak intensity. Extremely dangerous Tropical Cyclone Enawo hit north-eastern Madagascar near 3 am EST Tuesday as a Category 4 storm with 230 km/h winds. Enawo was the third strongest tropical cyclone on record to strike the island since Gafilo in 2004 and severe impacts arose from the storm's torrential rains, high winds, and large storm surge. The amount of water vapor detected by satellite was near the very high end of what is observed in tropical cyclones. Local residents in the northern

parts of Madagascar reported an unusual half-hour in the eye of the storm. Enawo decayed rapidly as it tracked directly down the length of Madagascar, exposing the entire island to flooding rains. Enawo's rains will help break the drought, which has caused large-scale crop failures and put over half a million people into acute food insecurity, according to the Famine Early Warning Systems Network.

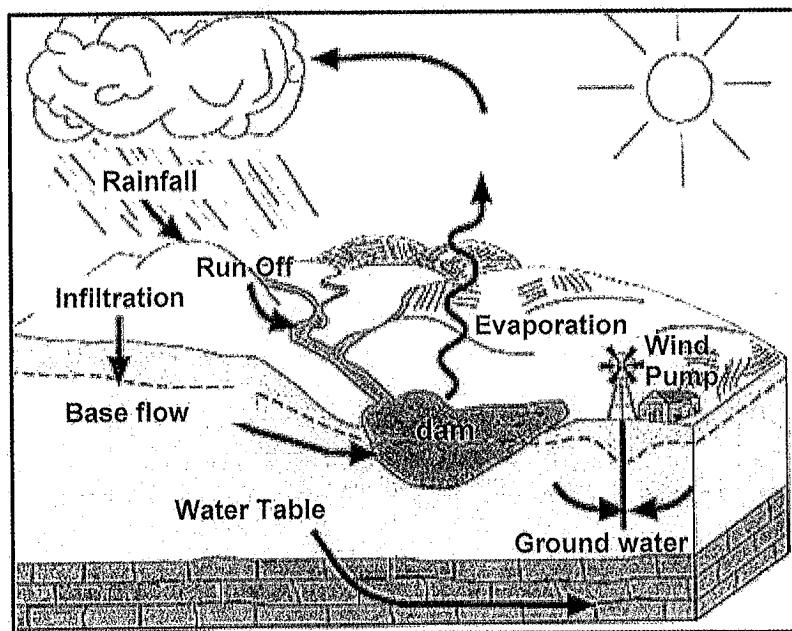
Adapted from article by Jeff Masters in Goggle, 2:44 PM GMT on March 07, 2017

FIGURE 2.4: BERG WIND



[Adapted from South African Weather Patterns]

FIGURE 2.5: GROUND WATER



[Adapted from fundamentals of hydrology]

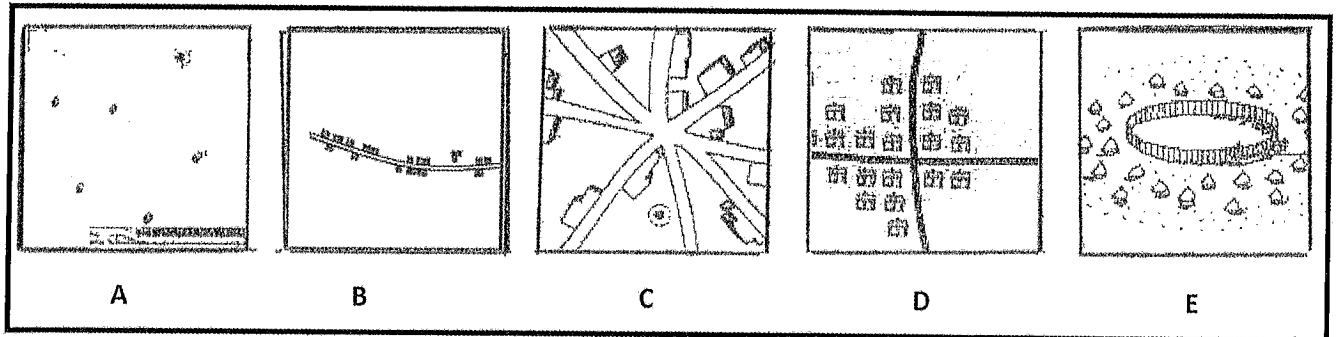
FIGURE 2.6: CATCHMENT MANAGEMENT

CASE STUDY: SOUTH AFRICAN CATCHMENT AREAS

Urbanisation, accelerated industrialization and more especially changing climatic conditions in South Africa has recently placed a great strain on local municipalities in providing adequate and quality water supply. This crises has put the need for greater catchment management into centre stage. In order to manage a drainage basin, the whole area that is drained by a river, including the tributaries, needs to be taken in consideration. What happens upstream in the tributaries will affect the main river downstream. Management of the whole drainage basin must be sustainable, so that future generations can benefit from the water system and its related ecosystems.

[Adapted from http://wwf.panda.org/about_our_earth/about_freshwater]

FIGURE 3.1: DIFFERENT TYPES OF SETTLEMENTS

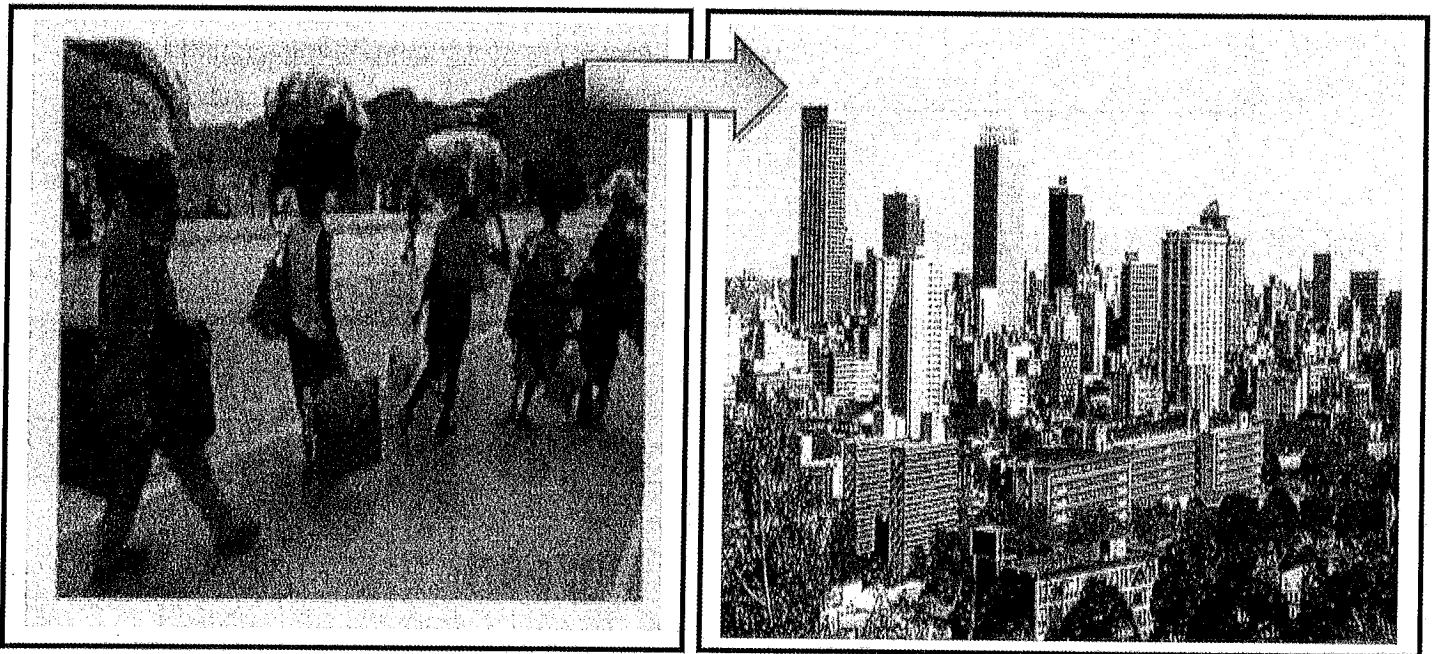


[Source <https://encrypted-tbno.gstatic.com/images>]

FIGURE 3.3: RURAL SETTLEMENT ISSUES

Photograph A

Photograph B



[Source: Adapted from Google Image]

FIGURE 3.4 LAND REFORM

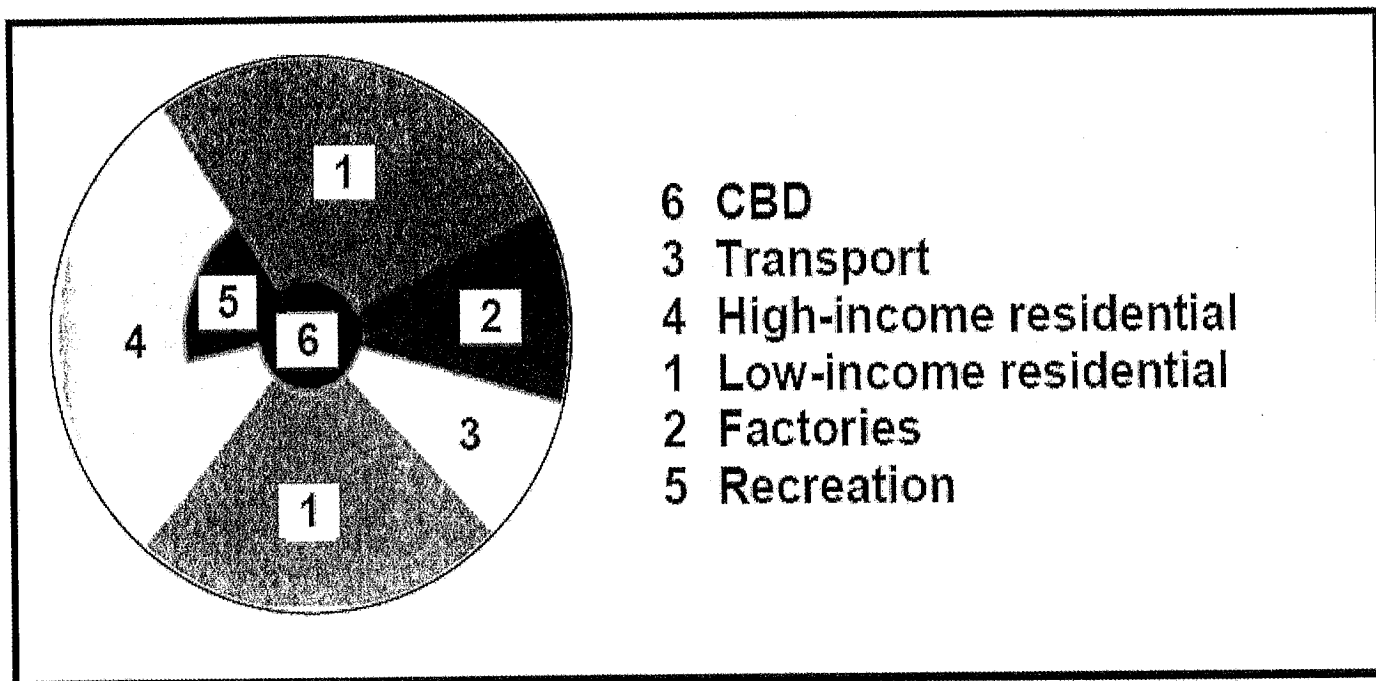
LAND REFORM

Several years ago the Government of South Africa embarked upon a process to create an equitable and sustainable land dispensation that results in social and economic development by providing land rights to all South Africans, with a particular emphasis on black people. The pillars of the process are land restitution, land redistribution and land tenure reform.

TSB Sugar Holdings views the successful implementation of land reform as an opportunity to involve local communities in its core business. The land reform projects that have so far been implemented by TSB, in partnership with the Department of Land Affairs, bear testimony to TSB's commitment to see the transfer of land rights to black people. TSB's support to newly settled growers includes credit finance and technical services to ensure the transfer of the critical skills required to underpin their success as emerging farming entrepreneurs.

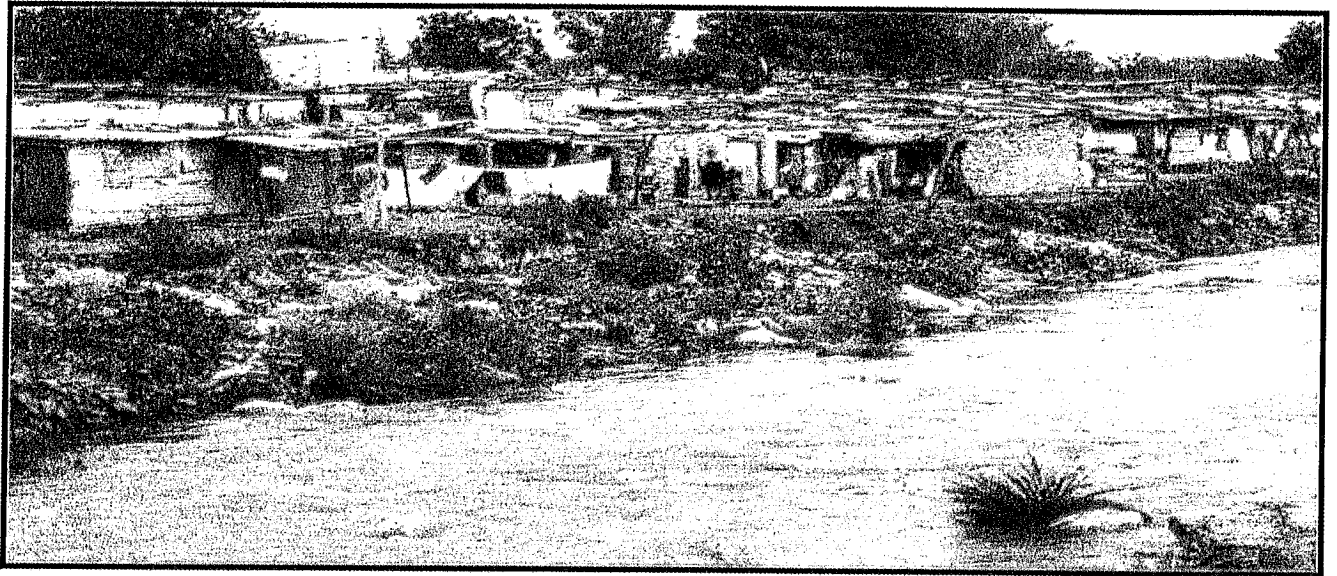
[Source: http://www.tsb.co.za/cane_farming.cfm#]

FIGURE 3.5: LAND-USE ZONES

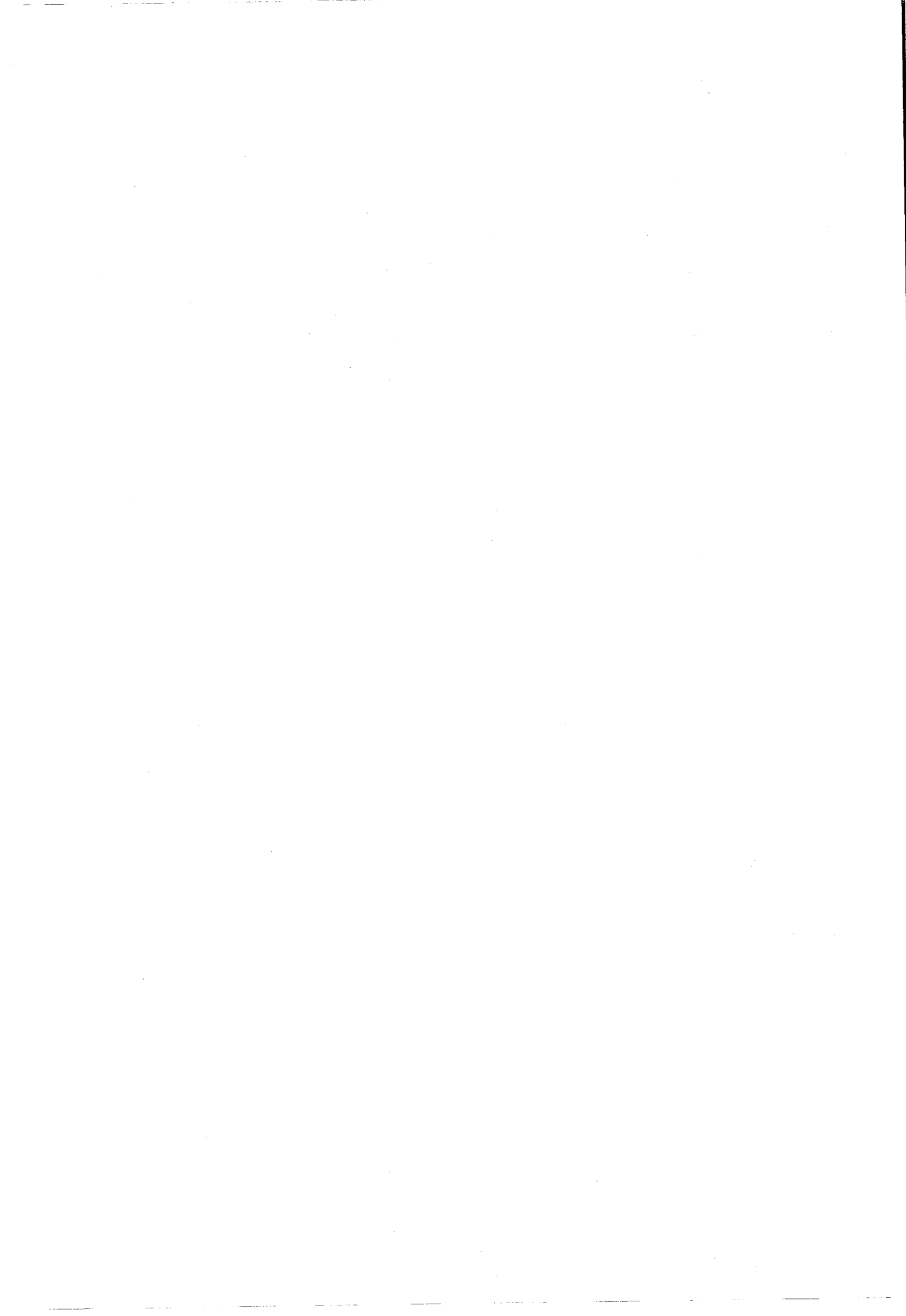


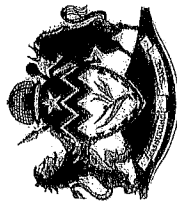
[Source: Adapted from Living Geography]

FIGURE 3.6: INFORMAL SETTLEMENT



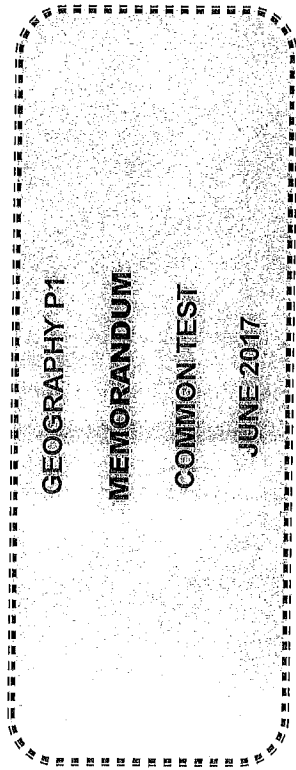
[Source: Google Images]





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**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

MARKS: 225

This memorandum consists of 14 pages.

SECTION A: CLIMATE AND WEATHER AND GEOMORPHOLOGY

QUESTION 1

- 1.1
- 1.1.1 4mb / hpa ✓
 - 1.1.2 gentle pressure gradient ✓
 - 1.1.3 $\frac{1}{8}$ ✓
 - 1.1.4 23°C ✓
 - 1.1.5 15 knots ✓
 - 1.1.6 (a) tropical cyclone/TropicalcycloneErnest ✓
(b) clockwise ✓
- 1.2
- 1.1.7 cold front ✓ (8 x 1) (8)
 - 1.2.1 Interfluve ✓
 - 1.2.2 Watershed / drainage divide ✓
 - 1.2.3 Confluence ✓
 - 1.2.4 Perennial river/Permanent river ✓
 - 1.2.5 Turbulent flow ✓
 - 1.2.6 Sea level / ocean / sea ✓
 - 1.2.7 Levee ✓ (7 x 1) (7)

1.4 VALLEY CLIMATE

- 1.4.1 A temperature inversion means an increase in temperature with an increase in altitude ✓
[Concept] (1 x 1) (1)
- 1.4.2 When cold air sinks under the influence of gravity to the valley bottom and forces warm air to rise ✓✓ (1 x 2) (2)
- 1.4.3 It results in the formation of fog ✓✓
It leads to the development of frost/frost pocket in the valley ✓✓
(Any ONE) (1 x 2) (2)
- 1.4.4 No clouds ✓
No wind /calm conditions ✓
Temperature must drop below freezing point ✓
Cold air sinks down the valley sides ✓ (2 x 1) (2)
- 1.4.5 Crops that are frost-resistant are planted at the foot of the slope. (A) ✓✓
Crops that are sensitive to frost are planted higher up the slope. (B) ✓✓
Thin skinned fruits are to be grown on the warmer north facing slopes (C) ✓✓
Thick skinned fruits are to be grown on the cooler south facing slopes (B) ✓✓
Forestry is recommended on the cooler south facing slopes (B) ✓✓
(Any THREE) (3 x 2) (6)

1.3 SATELLITE IMAGE OF A MID-LATITUDE CYCLONE

- 1.3.1 South western part/South western cape ✓ (1 x 1) (1)
- 1.3.2 Winter ✓ (1 x 1) (1)
- 1.3.3 Mid-latitude cyclone very close to the subcontinent ✓✓ (1 x 2) (2)
- 1.3.4 Temperature drops ✓✓ – arrival of cold air with cold front ✓✓
Pressure increases ✓✓ – with drop in temperature ✓✓
Humidity decreases ✓✓ – warm air replaced by cold air ✓✓
Cumulonimbus clouds formed ✓✓ – as warm air condenses ✓✓
Heavy rains ✓✓ – towering cumulonimbus clouds ✓✓
Wind speed increases ✓✓ because of steeper pressure gradient ✓✓ (2 x 2) (4)
(Any ONE)
- 1.3.5 **Farmers**
Winter rain ideal for farming in Western Cape ✓✓
Frost and snow impact negatively ✓✓
Very low temperature retards production and may affect food security ✓✓
Very cold weather may result in the death of animals ✓✓
Reduced income for farmers ✓✓
Dam levels may rise ensuring greater water supply ✓✓
Inhabitants
Cold conditions not ideal for inhabitants ✓✓
High rainfall may result in floods causing loss of human lives ✓✓
Snowfall will attract tourists ✓✓
Heavy rain may result in a drop in tourism ✓✓
Outdoor activities may be affected ✓✓
(Any FOUR) (4 x 2) (8)

(Learners may give three points on farmers and one point on inhabitants and vice versa to achieve full marks)

1.5 RIVER PROFILE

- 1.5.1 Source ✓ (1 x 1) (1)
- 1.5.2 Multi – Concave ✓ (1 x 1) (1)
- 1.5.3 A longitudinal profile is the shape of the river from its source to the mouth ✓ while a cross profile is the shape of the river channel from bank to bank ✓
longitudinal profile shows length and gradient of a river course ✓
cross profile shows width and depth ✓ (2 x 2) (4)
- 1.5.4 The river has sufficient energy to flow, with erosion rates in balance with deposition rates. ✓
A river flowing in a channel without obstruction. ✓
A river having a smooth concave profile ✓ (Any ONE) (1 x 2) (2)
- 1.5.5 The upper course is steep and speed increases resulting in greater downcutting ✓
The lower course is gentle and speed decreases resulting in lateral erosion ✓ (2 x 2) (4)
- 1.5.6 A knickpoint is a break in the slope of a river profile caused by a rejuvenated river. A knickpoint is often a waterfall. ✓
When rejuvenation of a river flowing on a wide valley occurs, a new valley is carved into the old valley. ✓
The floor of the old valley forms a terrace on either side of the valley after rejuvenation. ✓
Incised meanders form when rejuvenation occurs in a stream which is already meandering ✓
Incised meanders can also form oxbow lakes and cut-off meander scars. ✓ (Any TWO) (2 x 2) (4)

1.6 RIVER SYSTEM

- 1.6.1 Main river and its tributaries ✓ [Concept] (1 x 1) (1)
- 1.6.2 Meandering / Winding river channel ✓ (1 x 1) (1)
- 1.6.3 Oxbow lake ✓ (1 x 1) (1)
- 1.6.4 Soils may be clay preventing infiltration ✓
Higher water table ✓
Continuous flooding ✓ [Any ONE] (1 x 2) (2)
- 1.6.5 Can be intensely cultivated because it is fertile ✓
Machinery can be used because the land is flat ✓
Regular supply of water for cultivation from nearby river ✓ [Any ONE] (1 x 2) (2)
- 1.6.6 River carries huge amounts of material to the sea ✓
Most of the material is deposited in the oceans ✓
The saline conditions in the sea cause fine clay particles to stick together making the particles larger and heavier ✓
The particles sink to the bottom in the mouth of the river ✓
Layer upon layer is deposited until the sand and the mud may build upwards and outwards ✓
The river deposits its sediments faster than the sea removes it ✓
It forms a roughly triangular delta ✓
The river divides into smaller channels crossing the delta to reach the sea ✓ [Any FOUR] (4 x 2) (8) [75]

QUESTION 2

2.3 TROPICAL CYCLONE

- 2.1
 - 2.1.1 A (South Atlantic High) ✓
 - 2.1.2 B (Kalahari High/Continental High) ✓
 - 2.1.3 B (Kalahari High / Continental High) ✓
 - 2.1.4 A (South Atlantic High / St Helena) ✓
 - 2.1.5 A (South Atlantic High / St Helena) ✓
 - 2.1.6 A (South Atlantic High /St Helena)) ✓
 - 2.1.7 C (South Indian High / Mauritian High) ✓

(7 x 1) (7)

- 2.3.1 7/03/2017 ✓
- 2.3.2 4 ✓

(1 x 1) (1)
(1 x 1) (1)

- 2.3.3 Sea surface temperatures of 27°C and above/extremely high temperatures ✓
 Unstable atmospheric conditions/rising warm moist air ✓
 Developed between 5° and 20° south of the equator ✓
 Coriolis force is required for spiralling action of air ✓
 Upper-air divergence ✓
 High rate of evaporation/sufficient moisture content ✓
 Release of latent heat ✓
 Winds that are light and variable ✓
 Calm conditions ✓
 Little friction over the ocean ✓
 Rapid convection ✓
[Any ONE]

(1 x 1) (1)

2.2

- 2.2.1 C tributary ✓
- 2.2.2 E river capture ✓
- 2.2.3 A antecedent ✓
- 2.2.4 G periodic ✓
- 2.2.5 H suspension ✓
- 2.2.6 D abstraction ✓
- 2.2.7 F superimposed ✓
- 2.2.8 I water table ✓

(2 x 1) (2)

- 2.3.5 (a) There was a raging storm and suddenly the storm calmed down [candidates must emphasise the quick/abrupt/sudden change] ✓✓
 Clear weather /no clouds ✓✓
 No wind ✓✓

(1 x 2) (2)

- (b) Subsiding/descending/sinking air causes stable clear and calm conditions ✓✓
 Artificial wall caused by the spiralling upward movement of air preventing surface air entering the eye ✓✓

(1 x 2) (2)

- 2.3.6 Tracked for a long time over the rugged terrain of Madagascar from north to south ✓✓
 The cyclone moved inland for a long time ✓✓

(1 x 2) (2)

- 2.3.7 Enawo's rains will help break the drought and restore ecosystems ✓✓
 Water available for crop farming ✓✓
 Break the famine ✓✓
 Ensure food security ✓✓

(2 x 2) (4)

2.4 **BERG WIND**

- 2.4.1 Winter ✓ (1 x 1) (1)
- 2.4.2 Coastal low ✓ (1 x 1) (1)
- 2.4.3 Clear cloud conditions ✓ (1 x 1) (1)
- 2.4.4 Air is compressed and warms through surface friction as it descends the escarpment ✓✓
Wind originates from the interior of the country ✓✓
The air warms adiabatically (DALR) ✓✓ (2 x 2) (4)
- 2.4.5 Fire precautions ✓✓
Warnings ✓✓
Use of Fire Danger Index ✓✓
Fire breaks ✓✓
Construction of farm dams ✓✓
Controlled burning ✓✓
Specialised fire fighting teams in place ✓✓
(Any FOUR) (4 x 2) (8)

2.5 **GROUND WATER**

- 2.5.1 Water that is found below the surface. ✓
(Concept) (1 x 1) (1)
- 2.5.2 Infiltration refers to the soaking of water into the ground. ✓
Run-off refers to water flowing over the land. ✓
(Concept) (2 x 1) (2)
- 2.5.3 It will add water to the stream to allow it to continue flowing. ✓✓ (1 x 2) (2)
- 2.5.4 Water table will drop/lowered ✓✓
The growth of the natural vegetation will be negatively affected which may result in the extinction of certain indigenous species ✓✓ (2 x 2) (4)
- 2.5.5 Gentle slopes promotes infiltration of water and leads to a higher water table ✓✓
Permeable rock promotes infiltration and will lead to high water table ✓✓
Dry soil leads to high water table due to infiltration ✓✓
Saturated soil feeds the water table and causes it rise ✓✓
Prolonged and gentle rain leads to a higher water table ✓✓
Lots of/dense vegetation promotes infiltration and leads to high water table ✓✓

Low evaporation rates increases the rate of infiltration and leads to a rise of the water table ✓✓
(Any THREE) (3 x 2) (6)

2.6 **CATCHMENT MANAGEMENT AND CONSERVATION**

- 2.6.1 Catchment management refers to proper strategies formulated to maintain drainage basins in good condition. ✓
Catchment management refers to the protection of the catchment areas in order to promote sustainability. ✓
(Concept) (1 x 1) (1)
- 2.6.2 Contains the source of many rivers ✓✓
Natural purity of water is the highest in this point of the river. ✓✓
The inhabitants of the drainage basin depend on the catchment area for quality water supply for both industrial and domestic use ✓✓
(Any ONE) (2 x 2) (4)
- 2.6.3 Water quality is reduced ✓✓
Ecosystems are affected ✓✓ (1 x 2) (2)
- 2.6.4 Fencing or protecting river catchments area/buffering ✓✓
Prevent deforestation ✓✓
Revegetate with indigenous plants/afforestation ✓✓
Protection against soil erosion ✓✓
Treat industrial effluents before released into the river ✓✓
Treat sewage before released into the river ✓✓
Use natural fertilizers/compost ✓✓
Practice scientific/proper farming methods ✓✓
Monitor water usage by various economic sectors ✓✓
Legislation on water usage ✓✓
Raise public awareness ✓✓
(Any FOUR) (4 x 2) (8)

[75]

QUESTION 3

3.1 3.1.1 A ✓

3.1.2 D ✓

3.1.3 E ✓

3.1.4 A ✓

3.1.5 A ✓

3.1.6 C ✓

3.1.7 B ✓

3.1.8 A ✓

3.2 3.2.1 F – (Urban growth) ✓

3.2.2 G – (Urban ribbon development) ✓

3.2.3 C – (Urban sprawl) ✓

3.2.4 A – (Urban profile) ✓

3.2.5 E – (Urban morphology) ✓

3.2.6 B – (Urban expansion) ✓

3.2.7 D – (Urbanisation) ✓

3.3 RURAL SETTLEMENT ISSUES

3.3.1 It refers to the decrease in the number of people living in rural areas. ✓
[Concept]

3.3.2 Better standard of living. ✓
Availability of entertainment facilities. ✓
Better infrastructure. ✓
Better employment opportunities. ✓
Better housing. ✓
Better provision of basic services such as clean water. ✓
[Any TWO] (1x1) (1)

3.3.3 Abandoned farm houses/ghost towns develop. ✓✓
Drop in agricultural production. ✓✓
Many services close down. ✓✓
Ageing of population in rural areas. ✓✓
[Any TWO] (2x2) (4)

3.3.4 Improve social services. ✓✓
Provide better infrastructure. ✓✓
Create employment through industrial decentralization. ✓✓
Establishment of game parks to promote tourism. ✓✓
Train young farmers to become commercial farmers. ✓✓
Provide incentives to keep farmers on their farms. ✓✓
[Any THREE] (2x3) (6)

3.4

3.4.1 To bring about equitable distribution and access to land. ✓ (1 x 1) (1)

3.4.2 Land restitution – To restore land and compensate individuals and communities who lost land as a result of Apartheid policies ✓
[Concept] (1 x 1) (1)

Tenure reform – To secure the rights of people living under insecure conditions on land owned by others ✓
[Concept] (1 x 1) (1)

3.4.3 Credit finance ✓
Technical services ✓
[Any ONE] (1 x 1) (1)

(7 x 1) (7)

- 3.4.4 Department of land Affairs is responsible for surveying and mapping. ✓✓ (1 x 2) (2)
- 3.4.5 To win trust of communities ✓✓
To get full cooperation ✓✓
[Any ONE] (1 x 2) (2)
- 3.4.6 Very costly process ✓✓
Takes time to resolve land claim disputes ✓✓
The willing buyer/seller clause causes delays in negotiating prices ✓✓
There are grey areas(gaps) in the land reform policies ✓✓
Lack of training and support for new owners ✓✓
Land has been redistributed to some people who have no interest or knowledge of agriculture ✓✓
Disagreement between government and traditional leaders in terms of restoring land to communities ✓✓
The anticipated move from subsistence to commercial farming has not taken place ✓✓
Land reform has not stimulated the economic growth of rural areas and reduced poverty ✓✓
[Any FOUR] (4 x 2) (8)
- 3.5.1 Specific areas set aside in urban areas to fulfill particular functions ✓(1x1) (1)
[Concept]
- 3.5.2 Sector model/Hoyt ✓ (1x1) (1)
- 3.5.3 Concentric pattern with wedges expanding outwards ✓✓
Sectors develop along the main routes ✓✓
The CBD has a circular shape ✓✓
[Any ONE] (1x2) (2)
- 3.5.4 Close to recreational areas ✓✓
Away from factories/industries ✓✓ (2x2) (4)
- 3.5.5 Service provision issues ✓✓
Lack of parking space ✓✓
High rentals ✓✓
Access is difficult ✓✓
High crime rates ✓✓
Pollution ✓✓
Overcrowded ✓✓
[Any THREE] (3x2) (6)
- 3.6 Informal settlement: usually unplanned and lack of services houses built from corrugated iron (shacks) ✓ (1 x 1) (1)
- 3.6.1 Lack of funds to build homes due to the rapid influx of people to urban areas ✓
Poverty ✓
Unemployment ✓
(Any ONE) (1 x 1) (1)
- 3.6.2 Prone to flooding because of being located on the banks of the river. ✓ (1 x 1) (1)
- 3.6.3 They cannot afford formal housing ✓✓
Need to be close to the place of employment ✓✓
Ownership of land outside the urban settlement is not clearly demarcated ✓✓ (2 x 2) (4)
- 3.6.4 Unsettling and can cause a drop in tourism ✓✓
Crime in areas ✓✓
Health risks due to spread of diseases ✓✓
Urban infrastructure cannot cope ✓✓
Fire hazards due to illegal connections ✓✓
Poor infrastructure makes monitoring of the area difficult ✓✓
Emergency services are hampered in their duties ✓✓
[Any FOUR] (4 x 2) (8)

TOTAL MARKS: 225

