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## education

Department:
Education
PROVINCE OF KWAZULU-NATAL

# NATIONAL SENIOR CERTIFICATE

**GRADE 12** 

**GEOGRAPHY P1** 

PREPARATORY EXAMINATION

SEPTEMBER 2019

**MARKS: 225** 

TIME: 3 hours

This question paper consists of 16 pages and an Annexure of 13 pages.

#### **INSTRUCTIONS AND INFORMATION**

- 1. This question paper consists of FOUR questions.
- 2. Answer ANY THREE questions of 75 marks each.
- 3. ALL diagrams are included in the ANNEXURE.
- 4. Leave a line open between subsections of questions answered.
- 5. Start EACH question at the top of a NEW page.
- 6. Number your 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 Refer FIGURE 1.1 which shows a station model from a synoptic weather map to answer the following questions. Write only the answer next to the question number (1.1.1 to 1.1.8) in your ANSWER BOOK. e.g. 1.1.9 snow
  - 1.1.1 Give the air temperature.
  - 1.1.2 State the wind direction.
  - 1.1.3 Give the dew point temperature.
  - 1.1.4 Give the wind speed
  - 1.1.5 State the type of precipitation illustrated.
  - 1.1.6 Indicate the cloud cover.
  - 1.1.7 Is the relative humidity for the station model 65% or 96%?
  - 1.1.8 Is this weather station model associated with stable or unstable atmospheric condition? (8 x 1) (8)
- 1.2 Refer to FIGURE 1.2 showing a river meander. Match the slopes **A** and **B** in the sketch with the descriptions given below. Write only the letter A or B next to the question numbers (1.2.1 1.2.7) in your ANSWER BOOK. e.g. 1.2.8 B
  - 1.2.1 The outer bend of the river
  - 1.2.2 Erosion is the main process
  - 1.2.3 The slope is convex in shape
  - 1.2.4 Known as the slip-off slope
  - 1.2.5 Water flows faster at this point
  - 1.2.6 The slope has a gentle gradient
  - 1.2.7 Deposition is the main process

 $(7 \times 1)(7)$ 

1.3	Refer	to FIGURE 1.3, showing the path of Tropical Cyclone Idai.	
	1.3.1	How many tropical cyclones occurred before Tropical Cyclone Idai?	(1 x 1) (1)
	1.3.2	Explain the term 'storm surge' mentioned in FIGURE 1.3.	(1 x 2) (2)
	1.3.3	Provide TWO pieces of evidence from Figure 1.3 to suggest that Cyclone Idai was classified as a category 3 storm.	(2 x 2) (4)
	1.3.4	In a paragraph of approximately EIGHT lines suggest sustainable strategies that could be implemented in order to decrease the devastation of future tropical cyclone events in this region.	(4 x 2) (8)
1.4	Study	FIGURE 1.4, an article on Urban Climates.	
	1.4.1	Which land-use zone in a city records the higest temperatures?	(1 x 1) (1)
	1.4.2	Give the term used to describe the increased temperature	

recorded in the part of the city mentioned in QUESTION 1.4.1. (2 x 2) (4)

1.4.4 Explain the term *greenbelt*. (1 x 1) (1)

1.4.3 Suggest TWO possible reasons for the high temperatures

experienced in the land-use zone mentioned in QUESTION 1.4.1. (1 x 1) (1)

1.4.5 Discuss the positive impact that greenbelt development will have on cities/urban areas. (2 x 2) (4)

1.4.6 Although the development of greenbelts in a city is a modern trend, its development is met with a number of challenges.
Evaluate TWO challenges of greenbelt development in cities/ urban areas.
(2 x 2) (4)

- 1.5 Refer to FIGURE 1.5 showing a Fluvial Landform.
  - 1.5.1 Mention the erosional process responsible for the waterfall moving upstream.

(1 x 1) (1)

1.5.2 How does the varying resistance of rocks shown in FIGURE 1.5 contribute to the formation of waterfalls?

(1 x 2) (2)

1.5.3 Explain TWO climatological factors can affect the rate at which the erosional process mentioned in QUESTION 1.5.2 will occur.

(2 x 2) (4)

1.5.4 Explain TWO ways in which rejuvenation will impact on the waterfall over time.

 $(2 \times 2) (4)$ 

1.5.5 Discuss the economic benefits of the waterfall to the local communities.

(2 x 2) (4)

- 1.6 Refer to FIGURE 1.6 showing river capture.
  - 1.6.1 Which river, **A** or **B**, is the captor river?

 $(1 \times 1)(1)$ 

1.6.2 Give a reason for your answer in QUESTION 1.6.1.

 $(1 \times 2)(2)$ 

1.6.3 Explain TWO possible reasons for river capture taking place in FIGURE 1.6.

(2 x 2) (4)

1.6.4 In a paragraph of approximately EIGHT lines, describe how the changes in the river discharge of rivers **C** and **D** would affect the erosional and depositional capacity of each of the two rivers.

(4 x 2) (8)

[75]

#### **QUESTION 2**

- 2.1 Refer to FIGURE 2.1 showing the influence of slope aspect on a valley in the Southern Hemisphere. Write only the correct letter/answer next to the question number (2.1.1 2.1.7) in the ANSWER BOOK. e.g. 2.1.8 B
  - 2.1.1 Which slope **A** or **B** is receiving the direct sun rays?
  - 2.1.2 Which slope **A** or **B** is called the shadow zone?
  - 2.1.3 High income settlements are most likely to develop at A, B or C?
  - 2.1.4 Are forests most likely to be found on slope A or B?
  - 2.1.5 Will slope **A** or **B** have the highest ground water content?
  - 2.1.6 Will slope **A** or **B** be most suitable for sugar cane farming?
  - 2.1.7 In which season will the influence of slope aspect be more prominent? (7 x 1) (7)
- 2.2 Choose the term from COLUMN B that matches the descriptions in COLUMN A. Write only the letter (A I) next to the question number (2.2.1 2.2.8) in the ANSWER BOOK. e.g. 2.2.9 radial

	COLUMN A		COLUMN B
2.2.1	Channels that are separated by islands of deposited material.	A.	Ox-bow lake
	,	В.	Levees
2.2.2	A cut-off meander that contains water.	C.	Superimposed
2.2.3	The drainage system maintains its original course over a landscape that has undergone	D.	Braided streams
	upliftment.	E.	Rapids
2.2.4	Feature formed due to deposition at the mouth of the river.	F.	Delta
2.2.5	Raised banks of a river.	G.	Flood plain
2.2.6	Wide area of flat land along a river in the lower	Н.	Confluence
	course.	1.	Antecedent
2.2.7	Feature develops where streams flow over bands of hard rock which dip upstream.		
2.2.8	Point where one river in the network joins another.		(Q v 1) (Q

(8 x 1) (8)

2.3	Refer to	<b>FIGURE</b>	2.3,	based	on	a	local	wind.
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2.3.1	Identify the wind described in FIGURE 2.3.	(1	x 1) (1)
2.3.2	Name the season during which this local wind blows.	(1	x 1) (1)
2.3.3	What is the relationsip between this local wind and veld fires?	(1	x 1) (1)
2.3.4	Name the specific weather phenomena/systems necessary for the development of the wind mentioned in QUESTION 2.3.1.	(2	x 1) (2)
2.3.5	Explain why these winds are hot and dry.	(1	x 2) (2)
2.3.6	In a paragraph of approxiamately EIGHT lines discuss the impact that these winds would have on the farming community and the natural environment in the KZN midlands and surrounding areas.	(4	x 2) (8)
Study South	FIGURE 2.4, a satellite image of a low presssure system over Africa.		
2.4.1	Identify the low pressure system on the satellite image.	(1:	x 1) (1)
2.4.2	Give TWO pieces of evidence from the satellite image to support your answer to QUESTION 2.4.1.	(2)	x 1) (2)
2.4.3	Explain TWO weather changes associated with the passing of the cold front (X - Y) over Cape Town on the satellite image.	(2)	x 2) (4)

2.4.4 Draw a fully labelled cross section, of the cold front part of the

2.4.5 Discuss the positive impact this low pressure system will have

on the farming community of the Western Cape.

low pressure system in FIGURE 2.4.

2.4

 $(4 \times 1) (4)$ 

 $(2 \times 2) (4)$ 

2.5

Refer to FIGURE 2.5, which shows a drainage basin.

2.0	Tierer to Fractic 2.3, which shows a drainage basin.	
	2.5.1 Define the term drainage basin.	(1 x 1) (1)
	2.5.2 Determine the stream order at <b>A</b> .	(1 x 2) (2)
	2.5.3 The drainage pattern at area <b>B</b> is dendritic. Provide TWO reasons to support this statement.	(2 x 2) (4)
	2.5.4 With reference to porosity of rocks, compare the drainage density at area <b>B</b> with that of area <b>C</b>	(2 x 2) (4)
	2.5.5 The river energy at <b>E</b> is higher than at <b>D</b> . Give TWO reasons to support this statement	(2 x 2) (4)
2.6	Refer to FIGURE 2.6, on river management.	

2.6.1 Define the term *river management*. (1 x 1) (1)

2.6.2 Provide TWO pieces of evidence from the photograph showing poor river management. (2 x 1) (2)

2.6.3 Recommend TWO ways in which the local municipality can reduce the impact of the problems mentioned in QUESTION 2.6.2 caused by settlements located close to rivers. (2 x 2) (4)

2.6.4 In a paragraph of approximately EIGHT lines, explain why it is crucial (very important) to maintain the health (quality of water) of rivers in South Africa. (4 x 2) (8)

[75]

### SECTION B: RURAL AND URBAN SETTLEMENT, ECONOMIC GEOGRAPHY OF SOUTH AFRICA

#### **QUESTION 3**

- 3.1 Study FIGURE 3.1 showing rural settlement patterns. Match the descriptions below to the correct settlement patterns. Write down the correct settlement pattern next to the question number (3.1.1 3.1.8) in the ANSWER BOOK, for example 3.1.9 Dispersed.
  - 3.1.1 Farmers are independent and can experiment with modern equipment.
  - 3.1.2 Basic services such as schooling are far away.
  - 3.1.3 These settlements have a long and narrow shape.
  - 3.1.4 Safety is an advantage because of large number of farmers.
  - 3.1.5 These farms require large amounts of capital to be sustained.
  - 3.1.6 Farmer will have fragmented pieces of land.
  - 3.1.7 Buildings are located close together.
  - 3.1.8 Lack of privacy is a disadvantage in this settlement pattern. (8 x 1) (8)

3.2 Choose the correct term/phrase that matches the descriptions below. Write only the correct term/phrase next to question number (3.2.1 – 3.2.7) e.g. 3.2.8 PE - Uitenhage.

Growth points; Deconcentration points; Spatial Development Initiative; Industrial Development Zone; Maputo Corridor; Centralisation; Reconstruction and Development program; Growth, Employment and Redistribution

- 3.2.1 A program to initiate and support a series of development corridors stretching across South Africa.
- 3.2.2 Each of these areas are directly connected to a harbour or port.
- 3.2.3 A pre-1994 development strategy, where industries were set up in remote areas with adequate infrastructure.
- 3.2.4 A strategy concentrating on meeting the people's basic needs.
- 3.2.5 When industries and activities are concentrated around a central point or economic advantage.
- 3.2.6 Pre-apartheid economic strategy, where industrial development sites were located outside main metropolitan areas.
- 3.2.7 This trade infrastructure connects Gauteng with the capital of Mozambique. (7 x 1) (7)

3.3 Refer to FIGURE 3.3 based on a rural social justice issue.

3.3.1 Name the resource mentioned in FIGURE 3.3 that rural people have limited access to. (1 x 1)(1)

3.3.2 Why is this resource mentioned in QUESTION 3.3.1 considered to be a social justice issue? (1 x 1) (1)

3.3.3 According to the article, what has contributed to the lack of this resource mentioned in QUESTION 3.3.1 (1 x 1) (1)

3.3.4 What is meant by 'a water shedding system' in the context of the article in FIGURE 3.3? (1 x 2) (2)

3.3.5 Why has it not been possible to provide reliable water infrastructure to the rural community of Beaufort West? (2 x 2) (4)

3.3.6 Evaluate the negative impact of the water crisis on employment in rural areas. (2 x 2) (4)

3.4 Refer to FIGURE 3.4 showing urban land-use models.

3.4.1 Identify the urban land-use models labelled **B** and **C**. (2 x 1) (2)

3.4.2 Explain the purpose of developing urban land-use models.  $(1 \times 2)(2)$ 

3.4.3 Refer to land-use zone 1.

(a) Name land-use zone 1.  $(1 \times 1)(1)$ 

(b) Account for land-use zone 1's central location in urban land-use models A and B. (2 x 1) (2)

(c) Why has the location of land-use zone 1 changed in land-use model C? (1 x 2) (2)

3.4.4 Refer to land-use zone 2 in Urban land-use model A.
In a paragraph of approximately EIGHT lines explain why buildings in this zone are generally in a poor state of disrepair and outline strategies planners can employ to revitalise(restore) this zone. (4 x 2) (8)

3.6

3.5	Refer to FIGURE 3.5, an article on food security.
0.0	riological radial did, an arriological rood boodinty.

3.5.1	What percentage of South Africans do not have a secure access to food?	(1 x 1)(1)
3.5.2	According to the article, explain ONE reason for food insecurity in South Africa.	(1 x 2) (2)
3.5.3	Give the measure that is used to determine food security in South Africa.	(1 x 1) (1)
3.5.4	Why is it important to ensure food security in South Africa?	(1 x 2) (2)
3.5.5	Mention TWO economic factors resulting in food insecurity in South Africa.	(2 x 2) (4)
3.5.6	Discuss TWO sustainable measures that can be implemented to ensure food security for all South Africans.	(2 x 2) (4)
Refer Africa	to FIGURE 3.6 showing the largest core industrial area in South .	
3.6.1	Name the core industrial area shown in FIGURE 3.6.	(1 x 1) (1)
3.6.2	In which province is this industrial area located?	(1 x 1) (1)
3.6.3	State TWO important industrial activities found in the core industrial area mentioned in QUESTION 3.6.1.	(2 x 1) (2)
3.6.4	Mention any TWO factors evident in FIGURE 3.6 that favoured the development of this core industrial area.	(2 x 2) (4)
3.6.5	'The concentration of industrial activities in the illustrated core industrial area has a negative impact on people living there.' In a paragraph approximately EIGHT lines, discuss the above statement	(4 × 2)(8)

statement.

(4 x 2)(8) **[75]** 

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#### **QUESTION 4**

4.1 Choose a description from COLUMN A that matches the word(s)/concepts in COLUMN B. Write only the letter (A-H) next to the question number (4.1.1 - 4.1.8) in the ANSWER BOOK. e.g. 4.1.9 Urban profile

	COLUMN A	y bara b	COLUMN B
4.1.1	A small settlement with few functions.	A.	urban hierarchy
4.1.2	A system of ranking items, people or places according to level of importance or size.	ß.	high-order services
113	The minimum number of people required for	Q.	high-order centre
4.1.0	a business to be successful.	D.	sphere of influence
4.1.4	The maximum distance a customer is willing to travel to purchase goods.	₽.	low-order centre
445		₹.	central place
4.1.5	Services that are required every day and are frequently used.	Ç۵.	threshold population
4.1.6	A large settlement with many functions, e.g.	10.939	iq 3M9 ebivor9 _S.S.I
	a city.	H.	low-order service
4.1.7	The area from which a business draws its customers.	Y.	range
	odotomoro. mast einir yd brusterebnu uay ferfw n	Holograd	
4.1.8	Provides goods and services to surrounding rural areas.	80g E	ERRIT notineM A.S.

 $(8 \times 1)(8)$ 

4.2 Choose the correct term/phrase that matches the descriptions below. Write the correct term/phrase next to question number (4.2.1 - 4.2.7). e.g. 4.2.8 ubiquitous industries.

> Footloose industries; Raw-material oriented; Import substitution; Informal sector; Bridge industries; Heavy industry; Quaternary activity; Light industry

- 4.2.1 Type of employment where people find work for themselves and are not contracted to a business or company.
- 4.2.2 Provision of intellectual services/high level of research.

- 4.2.3 Industries that tend to be very labour intensive.
- 4.2.4 Industries located where one means of transport is replaced by another.
- 4.2.5 The replacement of goods which were previously imported with locally produced ones.
- 4.2.6 Industries located over a geographical area without concentration in one particular region.
- 4.2.7 The type of industry that is a weight losing industry eg. Sugar mill.

 $(7 \times 1)(7)$ 

- 4.3 Refer to FIGURE 4.3 showing rural-urban migration.
  - 4.3.1 Define the term rural-urban migration.

 $(1 \times 1)(1)$ 

4.3.2 Provide ONE piece of evidence, from FIGURE 4.3, for people leaving the rural area.

 $(1 \times 1)(1)$ 

4.3.3 The rural towns that are left behind are often referred to as 'Ghost Towns'. Explain what you understand by this term.

 $(1 \times 1)(1)$ 

4.3.4 Mention THREE possible ways that the people's positive perception (idea) of urban life in FIGURE 4.3 will be shattered.

 $(3 \times 2)(6)$ 

4.3.5 Explain the economic importance for maintaining or improving rural settlements.

 $(3 \times 2)(6)$ 

4.4 Refer to FIGURE 4.4 based on an urban settlement issue.

4.4.1 What is an *informal settlement*?

 $(1 \times 1)(1)$ 

4.4.2 Explain ONE possible reason why the outbreak of a fire would be a serious issue in the informal settlement depicted in FIGURE 4.4.

 $(1 \times 2)(2)$ 

4.4.3 Why would it be difficult for emergency vehicles like the fire brigade, ambulance and police to have access and put out a blaze in the informal settlement depicted in FIGURE 4.4.

 $(2 \times 2)(4)$ 

4.4.4 In a paragraph of approximately EIGHT lines, suggest possible short-term and long-term strategies that the government can implement to assist residents of these settlements to reduce the chance of future fires occurring.

 $(4 \times 2)(8)$ 

4.5 Refer to FIGURE 4.5, an article on mining in South Africa.

4.5.1 What percentage does the mining sector contribute to the GDP of South Africa according to the information in FIGURE 4.5?

 $(1 \times 1)(1)$ 

4.5.2 With reference to FIGURE 4.5, account for the high percentage that mining contributes to the economy of South Africa.

 $(2 \times 2)(4)$ 

4.5.3 Discuss THREE factors that favour the mining sector in South Africa.

 $(3 \times 2)(6)$ 

4.5.4 Mention ONE way in which mining can negatively affect the environment and suggest a solution for the issue mentioned.

 $(2 \times 2)(4)$ 

- 4.6 Refer to FIGURE 4.6 an extract on the Saldanha Bay IDZ.
  - 4.6.1 In which province is the Saldanha Bay IDZ situated.

 $(1 \times 1)(1)$ 

4.6.2 Name ONE secondary project and ONE tertiary project that are being invested in, mentioned in FIGURE 4.6.

(2 x 1)(2)

4.6.3 Suggest how improved infrastructure facilities will attract new investment in the Saldanha Bay region.

 $(2 \times 2)(4)$ 

4.6.4 Foreign and local investment in the Saldanha Bay IDZ will have a positive impact on this region. In a paragraph of approximately EIGHT lines, explain how this investment initiative will benefit the local people.

 $(4 \times 2)(8)$ 

[75]

**GRAND TOTAL: 225** 

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### NATIONAL SENIOR CERTIFICATE

**GRADE 12** 

**GEOGRAPHY P1** 

**ANNEXURE** 

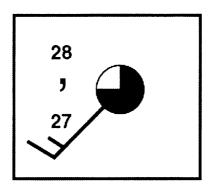
SEPTEMBER 2019

PREPARATORY EXAMINATION

This Annexure consists of 13 pages.

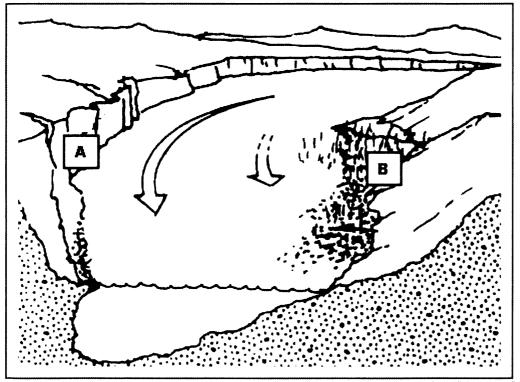
#### **QUESTION 1**

#### FIGURE 1.1: WEATHER STATION MODEL



[Source: https://www.symbols.com/weather/]

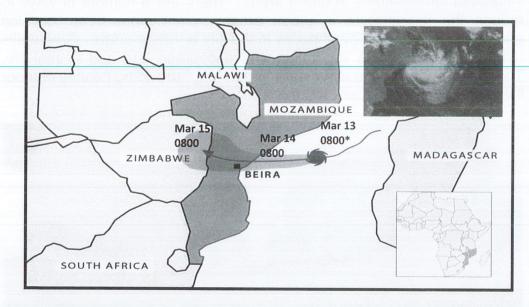
#### FIGURE 1.2: RIVER MEANDER



[https://simple.wikipedia.org/wiki/Meander]

#### FIGURE 1.3: TROPICAL CYCLONE IDAI

#### CYCLONE IDAI 'MIGHT BE SOUTHERN HEMISPHERE'S WORST SUCH DISASTER'



The devastating cyclone that hit south-eastern Africa may be the worst ever disaster to strike the southern hemisphere. Idai's estimated maximum sustained winds topped out at 188 km/hr on Monday, the equivalent of a Category 3 storm. Storm surges, which reached up 4m in height were experienced in the coastal city of Beira.

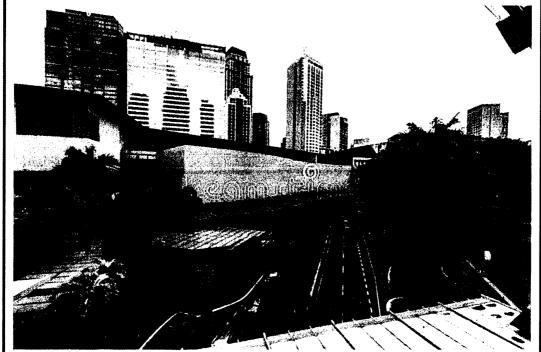
Cyclone Idai has swept through Mozambique, Malawi and Zimbabwe over the past few days, destroying almost everything in its path, causing devastating floods, killing and injuring thousands of people and ruining crops. More than 2.6 million people could be affected across the three countries. The port city of Beira, which was hit on Friday and is home to 500,000 people, is now an "island in the ocean", almost completely cut off. Houses, roads and telegraph poles are completely submerged.

The official death tolls in Mozambique, Zimbabwe and Malawi stands at 750 at this time.

[Source: Adapted from **Ruth Maclean** *in Dakar* Tue 19 Mar 2019 21.23 GMT First published on Tue 19 Mar 2019 11.40 GMT

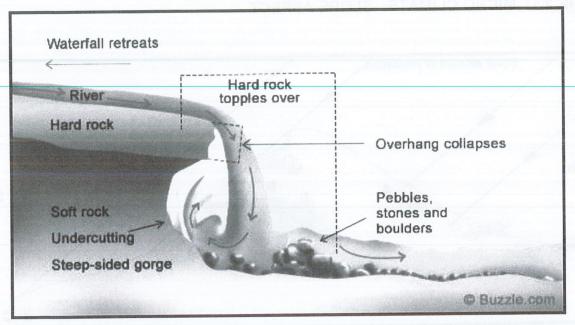
#### **FIGURE 1.4: URBAN CLIMATES**

Greenbelt development is one of the most sustainable solutions to increased temperatures in urban areas. There are a number of ways to reduce the temperature in urban areas: plant more trees, develop greenbelts and green open spaces in the city or urban areas. Greenbelts reintroduce indigenous vegetation and encourage bird and animal life. The green open spaces serve as a "green lung" providing healthy outdoor living and purifying the air.



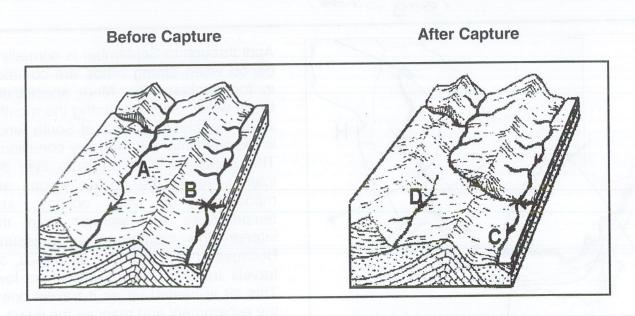
[Source: Adapted from New Trend in Urban Developments://www.sciencedirect.com]

FIGURE 1.5: FLUVIAL LANDFORM



[Source: Adapted from https://www.slideshare.net/.../geography-igcse-river-landforms]

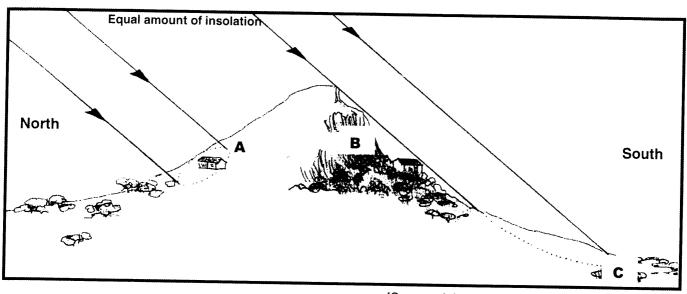
FIGURE 1.6: RIVER CAPTURE



[Source: Adapted from Earths Surface]

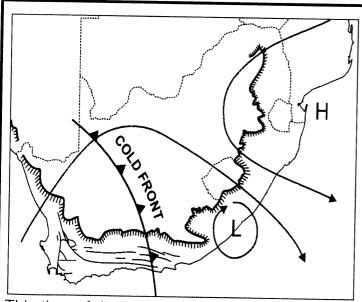
#### **QUESTION 2**

FIGURE 2.1: MICRO CLIMATE: SLOPE ASPECT



[Source: Adapted from http://learn.mindset.co.za]

FIGURE 2.3: LOCAL WIND

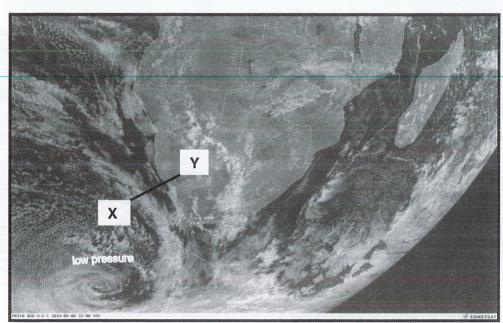


April through to September is normally a period when strong winds are common in the Drakensberg. More specifically, these winds originate during the months when the interior plateau of South Africa is experiencing cold and dry conditions. This creates a high pressure over the interior. Along the coast, regions are moderated bv the oceans and temperatures are warmer than the interior- this creates a low pressure. Because of this pressure difference, air travels from the high towards the low. This air is heated up as it travels down the escarpment and reaches the coast.

This time of the year is also known as the fire season in KZN. These hot, dry winds create the perfect environment to fuel runaway veld fires. A fire driven by a 100km an hour wind is unstoppable. These strong winds have a serious impact on farming activities and the natural environment. The winds eventually put every ones nerves on edge, it's a hot wind that wears you down.

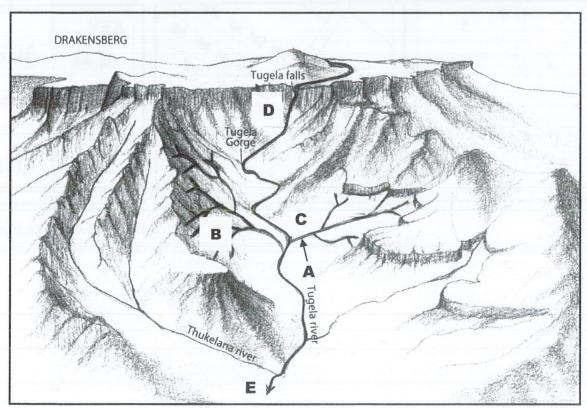
SOURCE: Adapted from <a href="https://www.vertical-endeavour.com/blog/33-drakensberg/general/106-fire-wind-season-in-berg.html">https://www.vertical-endeavour.com/blog/33-drakensberg/general/106-fire-wind-season-in-berg.html</a>

## FIGURE 2.4: SATELLITE IMAGE OF A LOW PRESSURE SYSTEM OVER SOUTH AFRICA



[Source: <a href="https://uk.images.search.yahoo.com">https://uk.images.search.yahoo.com</a>]

FIGURE 2.5: DRAINAGE BASIN



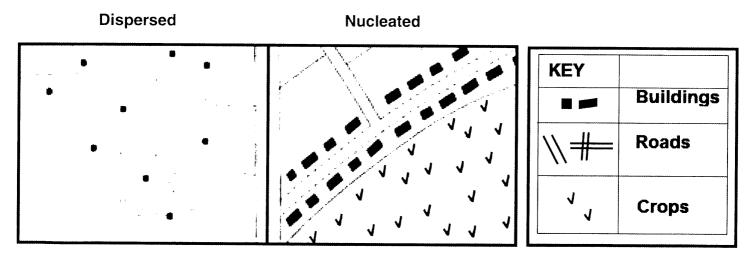
[Source: Adapted from https://en.wikipedia.org/wiki/Tugela\_River]

#### FIGURE 2.6: RIVER MANAGEMENT



[Source: Adapted from https://www.greenfacts.org/en/water]

FIGURE 3.1: SETTLEMENT PATTERNS



[Source: https://www.sciencedirect.com]

#### FIGURE 3.3: RURAL SOCIAL JUSTICE ISSUE

#### Water crisis continues in Beaufort West

CAPE TOWN - One by one South Africa's rural towns have succumbed as a devastating drought tightens its grip, turning vast areas into ground zero (without water).

Collapsed water infrastructure, theft and corruption have brought the future into the present with a bang. The Beaufort West Municipality is yet again urging residents to save water amid the town's ongoing water crisis.

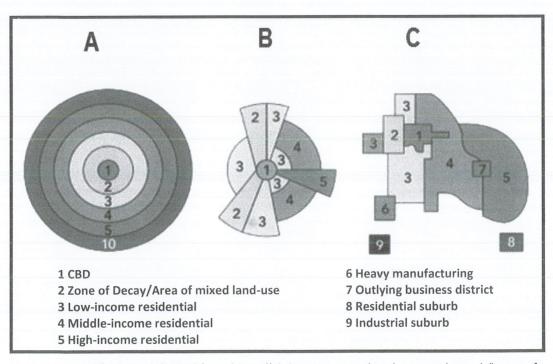
The Karoo town's three main reservoirs are at 11%, 13% and 28% of capacity. The municipality has since implemented a water shedding system in a bid to reduce consumption among residents.

In the long term, the municipality plans to get a pipeline which will pump water into the Gamka Dam.

With South Africa experiencing a water deficit of 38 billion cubic metres annually, and needing an additional R30 billion a year to bridge the gap in water services infrastructure, the situation is a daily challenge for thousands of people.

[Source: Adapted from https://ewn.co.za 07/01/2019]

#### FIGURE 3.4: URBAN LAND-USE MODELS



[Source: Adapted from <a href="https://uk.images.search.yahoo.com/search/images">https://uk.images.search.yahoo.com/search/images</a>]

#### FIGURE 3.5: FOOD SECURITY

### SA WILL HAVE TO PRODUCE 50% MORE FOOD BY 2050 OR FACE CRISIS WWF REPORT

South Africa faces an impending food security crisis if there isn't urgent action to correct unsustainable practices, says an environmental organisation.

According to the **World Wide Fund for Nature** (WWF), South Africa will have to produce 50% more food by 2050 to feed an estimated population of 73 million people.

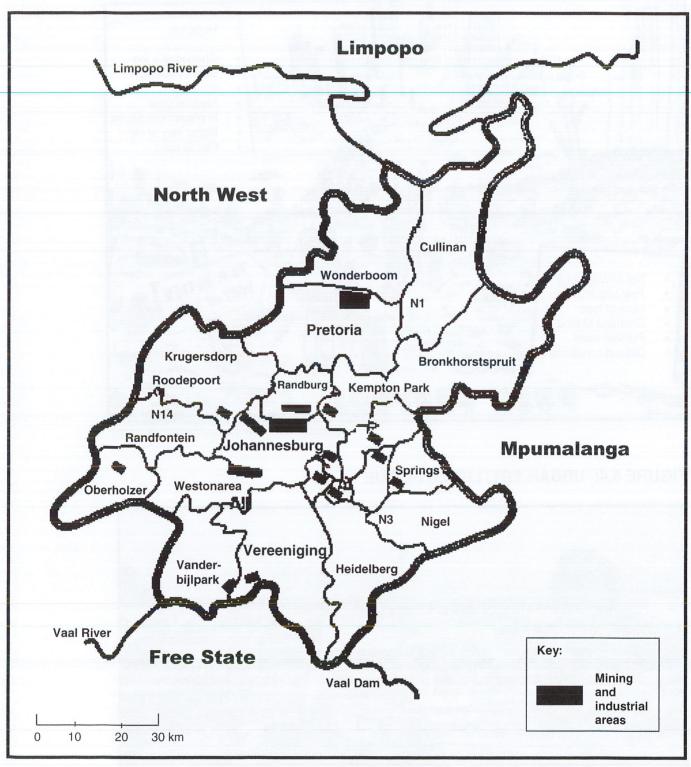
In South Africa, agriculture is the largest land use and has the largest impact on land transformation and biodiversity loss. Farming in South Africa needs comprehensive reform in order to meet the needs of a growing population.

Food prices directly affect food security. According to Food Bank South Africa, more than 20% of the population today is food insecure. That means that approximately 11.5 million South Africans do not know where their next meal will come from. The hardest hit people are women and children in rural communities.

There is enough food to feed everyone; however the problem is distribution and access. Food security is generally measured in terms of the price of the country's staple food, which is maize. In broader terms however 'food security occurs when people lack secure access to sufficient amounts of safe and nutritious food for normal growth and development, and an active healthy life'.

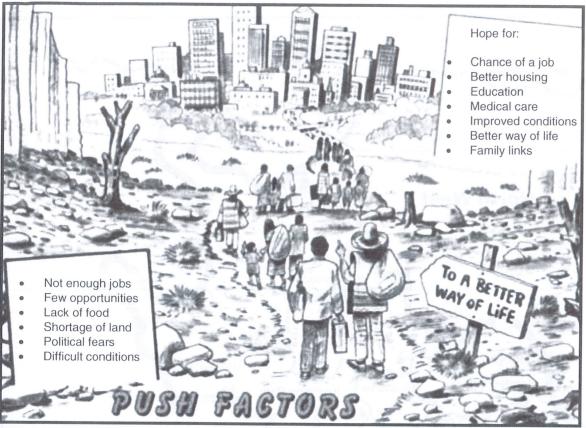
[Adapted from news 24 by Duncan Alfreds 24 (2019-02-19 20:52)]

FIGURER 3.6: LARGEST CORE INDUSTRIAL AREA IN SOUTH AFRICA



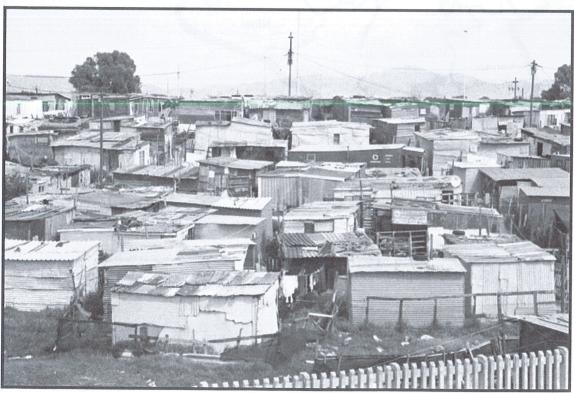
[Source: Adapted from www.roomsforafrica.com/dest/southafrica/gateng.jsp]

#### FIGURE 4.3: RURAL- URBAN MIGRATION



[Source: https://www.cartoonstock.com]

#### FIGURE 4.4: URBAN SETTLEMENT ISSUE



[Source: https://uk.images.search.yahoo.com]

#### FIGURE 4.5: MINING IN SOUTH AFRICA

South Africa is a world leader in mining. The country has an abundance of mineral resources, accounting for a significant proportion of world production and reserves, and South African mining companies are key players in the global industry.

South Africa's total reserves remain some of the world's most valuable, with an estimated worth of R20.3-trillion (\$2.5-trillion). Overall, the country is estimated to have the world's fifth-largest mining sector in terms of GDP value. Currently, mining in South Africa contributes an average of 20% to South Africa's GDP and boasts a total annual income of nearly R600 million.

Mining is continually adapting to changing local and international world conditions. It remains a cornerstone of the economy, making a significant contribution to economic activity, job creation and foreign exchange earnings. Mining and its related industries are critical to South Africa's socio-economic development. The sector accounts for roughly one-third of the market capitalisation of the JSE, and continues to attract foreign investment into the country.

[Adapted from tradingeconomics.com/southafrica/gdp-from-mining -2018]

#### FIGURE 4.6: SALDANHA BAY IDZ

#### Saldanha Bay IDZ attracts R3bn worth of investment

The Saldanha Bay Industrial Development Zone has signed new investment agreements, which brings the total number of signed investors to eight and investment value to over R3 billion.

All these investors are investing in a variety of fabrication workshops for steel and other metals, equipment and marine repair facilities, oil lubricant and fuel plants, as well as specialised engineering services. The investors are targeting construction to start between March 2019 and March 2020, Minister Rob Davies said.

Having established most of the major land-based infrastructure and some of the marine infrastructure, the zone's partnership with Transnet National Ports Authority has already started some of the design and commercial work for expanding the infrastructure offering, with additional port facilities.

Investments by local and international investors will signal confidence in the oil, gas and maritime sector and will contribute to opportunities for the development of small businesses in the region.

Our focus on the oil and gas sectors and continued growth and investment has the potential for further skills development and job creation opportunities into the future," said Schäfer.

[Source: Adapted from SAnews.gov.za(Tuesday, February 19, 2019)]