Province of the
EASTERN CAPE
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 10

NOVEMBER 2018

GEOGRAPHY P1

MARKS: **225**

TIME: **3 hours**

This question paper consists of 16 pages and an addendum of 12 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 ADDENDUM.
4. Leave a line between subsections of questions answered.
5. Start EACH question on a NEW page.
6. Number the answers correctly according to the numbering system used in this question paper.
7. Number the answers in the centre of the line.
8. Do NOT write in the margins of the ANSWER BOOK.
9. Draw fully labelled diagrams when instructed to do so.
10. Answer in FULL SENTENCES, except where you have to state, name, identify or list.
11. Write neatly and legibly.

SECTION A: THE ATMOSPHERE AND GEOMORPHOLOGY

Answer at least ONE question in this section. If you answer ONE question in SECTION A, you MUST answer TWO questions in SECTION B.

QUESTION 1

1.1 Study the following weather station model of Butterworth FIGURE 1.1 and answer the questions below.

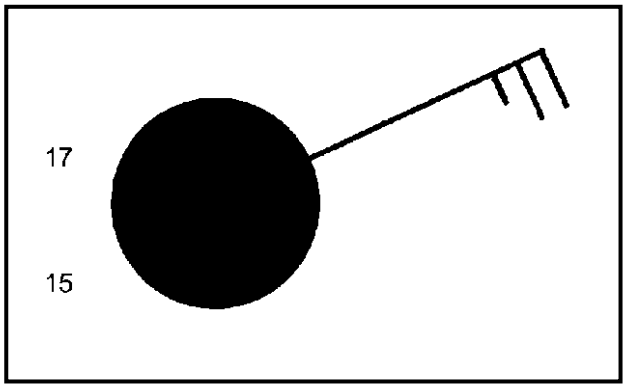

FIGURE 1.1

Use the weather station model to write the script for the television weather presenter's program. In your script outline the following weather properties:

1.1.1 Dew point temperature

1.1.2 Air temperature

1.1.3 Cloud cover

1.1.4 Wind direction

1.1.5 Wind speed in knots

1.1.6 Precipitation

1.1.7 Is the atmosphere unsaturated or saturated with water vapour?

(7 x 1) (7)

1.2 Match the terms in COLUMN B with the descriptions in COLUMN A. Write only the correct letter (A–I) next to the corresponding question number (1.2.1–1.2.8) in your ANSWER BOOK, for example 1.2.8 K.

COLUMN A		COLUMN B	
1.2.1	The study of Earth's physical features and processes that formed them	A	sediments
1.2.2	Large cracks which form as a result of continuous tension and compression forces	B	Crust
1.2.3	Solid outer layer of the Earth, 5–70 km thick	C	Fossil
1.2.4	Pieces of rock, clay and other substances from eroded rocks which accumulate at the bottom of a lake or sea	D	Geomorphology
1.2.5	The remains of dead plants or animals that have been preserved in rock	E	Fault
1.2.6	A bending of rocks into folds due to strong compressional forces from the inside	F	Mantle
1.2.7	The layer of molten material around the Earth's core	G	Quartzite
1.2.8	A metamorphic rock formed from sandstone, quite resistant to erosion	H	Folding
		I	Batholith

(8 x 1) (8)

1.3 Refer to FIGURE 1.3 showing ozone depletion.

1.3.1 Define the term *ozone depletion.* (1 x 1) (1)

1.3.2 In which layer of the atmosphere is ozone concentrated? (1 x 1) (1)

1.3.3 What does the acronym CFC stand for? (1 x 1) (1)

1.3.4 Identify THREE causes of ozone depletion in FIGURE 1.3. (3 x 1) (3)

1.3.5 Describe ONE way in which the depletion of the ozone layer will affect humans. (1 x 2) (2)

1.3.6 In a paragraph of approximately EIGHT lines, discuss sustainable strategies (ways) to reduce ozone depletion. (4 x 2) (8)

1.4 Refer to FIGURE 1.4 showing a cloud type.

1.4.1 Label **A** and **B** on the diagram as *warm air* and *cold air* respectively. (2 x 1) (2)

1.4.2 Identify the type of cloud in FIGURE 1.4. (1 x 1) (1)

1.4.3 (a) Is this cloud type associated with *snow* or *lighting?* (1 x 1) (1)

(b) Justify your answer in QUESTION 1.4.3(a) by providing TWO reasons. (2 x 2) (4)

1.4.4 Thunderstorm is another form of precipitation. Discuss ONE positive and TWO negative impacts of thunderstorms on people and the environment. (3 x 2) (6)

1.5 Carefully read the extract in FIGURE 1.5 on earthquakes.

1.5.1 Provide a geographical term for the following:

(a) The vibration in the Earth's crust due to sudden movements of the crust along a fault

(b) The point on the Earth's surface immediately above the focus of an earthquake (2 x 1) (2)

1.5.2 Give the magnitude of this earthquake and the number of people who died respectively. (2 x 1) (2)

1.5.3 Which instrument is used to measure the magnitude of an earthquake? (1 x 1) (1)

1.5.4 Explain why most earthquakes happen close to plate boundaries. (1 x 2) (2)

1.5.5 Briefly describe the negative results or damage caused by the earthquake in Kashmir. (2 x 2) (4)

1.5.6 Discuss why less developed countries are unable to cope with earthquakes than more developed countries. (2 x 2) (4)

1.6 Refer to FIGURE 1.6 showing the structure of the Earth.

1.6.1 Name the layers labelled **X**, **Y** and **Z**. (3 x 1) (3)

1.6.2 Copy the table below and fill in the following thicknesses for each layer to complete it. 1200 km, 5 to 90 km and 1 200 km.

LAYER	THICKNESS
X	
Y	
Z	

(3 x 1) (3)

1.6.3 Is the temperature change decreasing or increasing as one moves from layer **Y** to layer **Z**? (1 x 1) (1)

1.6.4 Layer **Z** consists of TWO layers. Name these TWO layers. (2 x 1) (2)

1.6.5 Explain how layer **X** results in volcanic activity. (1 x 2) (2)

1.6.6 Describe TWO ways in which the layer labelled **Z** is important to humans. (2 x 2) (4)

[75]

QUESTION 2

2.1 Various options are provided as possible answers to the following questions. Choose the correct answer and write only the letter (A–D) next to the question number (2.1.1–2.1.8) in the ANSWER BOOK, for example 2.1.9 D.

2.1.1 Which of the following is not a greenhouse gas?

A Methane
B CFC
C Carbon dioxide
D Oxygen

2.1.2 Incoming solar radiation is called …

A convection.
B insolation.
C reflection.
D conduction.

2.1.3 The warm ocean current found along the east coast of South Africa is the … current.

A Indian
B Benguela
C Mozambique
D Kuroshio

2.1.4 Clouds of great vertical extension are …

A cumulo-stratus.
B cumulo-nimbus.
C cirrus.
D strato-cumulus.

2.1.5 Lines joining places of the same pressure:

A Isotherms
B Isobars
C Longitudinal lines
D Latitudinal

2.1.6 The layers of the atmosphere where there is inversion of temperature increase are the …

A troposphere and thermosphere.
B mesosphere and stratosphere.
C stratosphere and thermosphere.
D troposphere and mesosphere.

2.1.7 Convectional rain is the type of rainfall that is common in the … Province during summer.

A Free State
B Western Cape
C Eastern Cape
D Gauteng

2.1.8 Water vapour is moisture in the atmosphere in its … state.

A liquid
B gaseous
C solid
D condensation (8 x 1) (8)

2.2 Refer to FIGURE 2.2 which shows various igneous intrusions.

2.2.1 Label the igneous intrusions indicated by letters **A**, **B, C** and **D** as dyke, sill, batholith and laccolith. (4)

2.2.2 Name the process that is responsible for the exposure of intrusive igneous features on the Earth surface. (1)

2.2.3 Which letter indicates a volcanic pipe? (1)

2.2.4 Name ONE intrusive igneous feature that is associated with granite. (1)

2.3 Refer to FIGURE 2.3 which shows a rainfall type.

2.3.1 Is the type of rainfall depicted by FIGURE 2.3, a convectional rainfall or a frontal rainfall? (1 x 1) (1)

2.3.2 Give the name of the boundary between warm air and cold air. (1 x 1) (1)

2.3.3 Identify warm air and cold air in FIGURE 2.3 as sinking or rising air respectively. (2 x 1) (2)

2.3.4 (a) Are clouds likely to form in **X** or **Y**? (1 x 1) (1)

(b) Justify your answer in QUESTION 2.3.4 (a) by providing ONE reason. (1 x 2) (2)

2.3.5 In a paragraph of approximately EIGHT lines, discuss the positive and negative impact of the rainfall type mentioned in QUESTION 2.3.1 in the Western Cape Province. (4 x 2) (8)

2.4 Carefully read the case study in FIGURE 2.4 about drought in Ethiopia as a result of climate change.

2.4.1 Define the term *drought.* (1 x 1) (1)

2.4.2 Mention TWO human causes of droughts in the case study. (2 x 1) (2)

2.4.3 Provide TWO effects of drought on the people of Ethiopia. (2 x 2) (4)

2.4.4 Drought is a threat to the environment. Discuss TWO point of evidence from the case study to support this statement. (2 x 2) (4)

2.4.5 Describe TWO sustainable strategies that can be put in place to manage drought. (2 x 2) (4)

2.5 Study the extract in FIGURE 2.5 about tsunamis.

2.5.1 Differentiate between *tsunami* and an *earthquake.* (2 x 1) (2)

2.5.2 Excluding South Africa, list TWO countries affected by this tsunami. (2 x 1) (2)

2.5.3 Give the total number of people killed in South Africa. (1 x 1) (1)

2.5.4 Explain why South Africa had few deaths as compared to other countries affected by this tsunami. (1 x 2) (2)

2.5.5 Discuss the main dangers (threats) to the survivors of the tsunami in Sumatra. (2 x 2) (4)

2.5.6 Suggest TWO methods that can be used in these countries to reduce the impact of a tsunami. (2 x 2) (4)

2.6 Refer to FIGURE 2.6 which shows Laurasia and Gondwanaland 200 million years ago.

2.6.1 All the continents and adjacent water masses are divided into tectonic plates. What is *plate tectonics*? (1 x 1) (1)

2.6.2 Which theory is illustrated in FIGURE 2.6? (1 x 1) (1)

2.6.3 Which continent in Gondwanaland is part of both the Southern and Northern hemisphere? (1 x 1) (1)

2.6.4 (a) Name TWO continents that formed Laurasia. (2 x 1) (2)

(b) Name THREE continents that formed Gondwanaland. (3 x 1) (3)

2.6.5 What was the name of the single continent that existed before Laurasia and Gondwanaland? (1 x 1) (1)

2.6.6 Provide THREE points of evidence that suggest that continents were once all joined in a single landmass. (3 x 2) (6)

[75]

SECTION B: POPULATION AND WATER RESOURCES

ANSWER at least ONE question from this section. If you answer ONE question from SECTION B, you must answer TWO questions from SECTION A.

QUESTION 3

3.1 Choose the correct word(s) between brackets to make the statements true. Write ONLY the word(s) next to the question number (3.1.1–3.1.7) in your ANSWER BOOK.

3.1.1 (Water distribution / Rainfall distribution) is the spread of rainfall across an area.

3.1.2 The process where liquid changes into ice is called (freezing / melting).

3.1.3 (Desalination / Sublimation) is the process of turning salty water into fresh water.

3.1.4 The process of absorption of water by plants, the transfer of the water through the plant and release to the atmosphere is (transpiration / evaporation).

3.1.5 (Infiltration / Run-off) is the process where water seeps into the soil.

3.1.6 Most precipitation happens over the (rivers / oceans).

3.1.7 (Marine pollution / Land pollution) is the pollution of the oceans (7 x 1) (7)

3.2 Match the term/concept in COLUMN A with the correct relevant descriptions in COLUMN B. Write only the correct letter (A–I) next to the corresponding number (3.2.1–3.2.8) in your ANSWER BOOK, for example 3.2.9 K.

COLUMN A		COLUMN B	
3.2.1	Birth rate	A	The way people are spread out over an area
3.2.2	Population density	B	The number of deaths per 1 000 population per year
3.2.3	Death rate	C	Number of children who die before they reach age 5
3.2.4	Life expectancy	D	The number of babies born per 1 000 population per year
3.2.5	Infant mortality rate	E	The number of people per square km
3.2.6	Growth rate	F	A person who moves to a foreign country
3.2.7	Population distribution	G	Calculated by finding the difference between birth rate and death rate
3.2.8	Fertility rate	H	Average number of years a person can be expected to live
		I	Average number of children per woman

(8 x 1) (8)

3.3 Study the ARTICLE in FIGURE 3.3 on the population of South Africa.

3.3.1 Define the term *population.* (1 x 1) (1)

3.3.2 What was South Africa's population in 2001 and 2015 respectively? (2 x 1) (2)

3.3.3 Name the province with the lowest population and the number of people living in this province. (2 x 1) (2)

3.3.4 Comment on the trend from 2001 to 2016 in the article regarding the population of South Africa. (1 x 2) (2)

3.3.5 Discuss TWO negative impacts that the increased population growth has shown on the natural resources of the country. (2 x 2) (4)

3.3.6 Suggest any TWO strategies that can be put in place to manage the population growth in South Africa. (2 x 2) (4)

3.4 Refer to FIGURE 3.4 which illustrates HIV/Aids infection rate per province.

3.4.1 Write the acronym Aids in full. (1 x 1) (1)

3.4.2 Name TWO symptoms that might be experienced by people who have contracted HIV/Aids. (2 x 1) (2)

3.4.3 List provinces with the highest and lowest infection rate respectively. (2 x 1) (2)

3.4.4 South Africa is one of the countries with the highest HIV/Aids infection rate. Explain ONE factor that contributes to high infection rate in a country like South Africa. (1 x 2) (2)

3.4.5 Suggest TWO ways in which HIV is passed from one person to another. (2 x 2) (4)

3.4.6 Suggest the best strategies to decrease the humiliation (shame) that people with HIV/Aids experience. (2 x 2) (4)

3.5 Carefully study FIGURE 3.5 illustrating inter-basin water transfer.

3.5.1 Explain what is meant by *water transfer*. (1 x 1) (1)

3.5.2 Mention ONE municipality and the province that benefits from this water transfer. (2 x 1) (2)

3.5.3 Give TWO activities that water is used for in this municipality. (2 x 1) (2)

3.5.4 Explain the way water is transferred from the Great Fish River basin to the Sundays River basin. (2 x 2) (4)

3.5.5 There is an increased demand for water in South Africa, but the supply of usable water is decreasing.
Discuss THREE human and physical factors influencing the availability of water in South Africa. (3 x 2) (6)

3.6 Refer to FIGURE 3.6 and answer the questions that follow.

3.6.1 Give a suitable term that describes electricity generated from water. (1 x 1) (1)

3.6.2 Is water a renewable or non-renewable resource? (1 x 1) (1)

3.6.3 What is water used for in FIGURE 3.6. (1 x 1) (1)

3.6.4 Provide TWO other examples of how rural communities use their water resources excluding the one illustrated in FIGURE 3.6. (2 x 1) (2)

3.6.5 Briefly explain how groundwater contributes to the availability of water in South Africa. (1 x 2) (2)

3.6.6 In a paragraph of approximately EIGHT lines suggest how individuals can sustainably save water at home, garden and in the community. (4 x 2) (8)

[75]

QUESTION 4

4.1 Select the correct answer from the list provided below to match the statements (4.1.1–4.1.7). Write only the correct word next to each question number, for example 4.1.8 pyramid.

Immigration; emigration; voluntary migration; push factor; pull factor; refugees; xenophobia

4.1.1 This encourages people to move away from a specific area.

4.1.2 Movement of people from one place to another by choice.

4.1.3 When people move to a new country.

4.1.4 People leave their homes and flee to another country out of fear for their lives.

4.1.5 Unreasonable fear, distrust and hatred of foreign nationals.

4.1.6 When people move out of a country.

4.1.7 This attracts people to an area. (7 x 1) (7)

4.2 Describe the hydrological cycle by choosing correct word(s) in brackets in the following paragraph. Write the number (4.2.1–4.2.8) and correct word next to it.

Most water evaporates from 4.2.1 (oceans / rivers) to form moist air. Moist air is pushed over the land from 4.2.2 (high pressure / low pressure) over the sea to the 4.2.3 (high pressure / low pressure) over the land. When the 4.2.4 (dry / moist) air is forced up it condenses and 4.2.5 (clouds / run-off) will form. 4.2.6 (Precipitation / Percolation) takes place and the water lands on the earth's surface. Water drains into rivers and this is called 4.2.7 (surface run-off / base flow). As the water infiltrates, the water table will 4.2.8 (rise / subside). (8 x 1) (8)

4.3 Read the case study in FIGURE 4.3 carefully before you answer the questions that follow.

4.3.1 Give the geographical term that best describes the movement of the Tsitsa family from one place to another. (1 x 1) (1)

4.3.2 Choose the correct word in relation to the Tsitsa family's relocation from South Africa to England.

(a) Regional / International

(b) Voluntary / Forced

(c) Permanent / Temporary (3 x 1) (3)

4.3.3 Explain why the Tsitsa family moved from South Africa to England. (1 x 1) (1)

4.3.4 Discuss TWO pull factors that attracted the Tsitsa family to England. (2 x 2) (4)

4.3.5 Suggest THREE negative impacts of the voluntary migration on the Tsitsa's place of origin (South Africa). (3 x 2) (6)

4.4 Read the case study in FIGURE 4.4 carefully before you answer the questions that follow.

4.4.1 Define *demographic transition model*. (1 x 1) (1)

4.4.2 Identify the stage where birth rate is high and death rate falls rapidly. (1 x 1) (1)

4.4.3 Indicate the stage where both death rate and birth rate are low. (1 x 1) (1)

4.4.4 Compare the level of birth rate and level of death rate in stage 1. (1 x 2) (2)

4.4.5 In stage 2 the death rate is starting to drop rapidly. Suggest TWO reasons why this is the case. (2 x 2) (4)

4.4.6 In stage 3 the birth rate starts to level out as the population growth rate decreases. Discuss THREE factors that affect birth rates. (3 x 2) (6)

4.5 Carefully study FIGURE 4.5.

4.5.1 Define the term *over-fishing*. (1 x 1) (1)

4.5.2 Give TWO reasons that cause over-fishing. (2 x 1) (2)

4.5.3 Provide TWO negative effects of over-fishing on people and the environment. (2 x 2) (4)

4.5.4 'The oceans are one of our greatest resources for life.'
In a paragraph of approximately EIGHT lines, discuss the importance of the oceans in people's lives. (4 x 2) (8)

4.6 Read the extract in FIGURE 4.6 carefully before you answer the questions that follow.

4.6.1 Name the country affected by flooding in the extract. (1 x 1) (1)

4.6.2 Which country was called upon to assist the affected country? (1 x 1) (1)

4.6.3 Mention the organisation that was deployed to the flooded area to provide relief to people. (1 x 1) (1)

4.6.4 Explain why the houses illustrated in FIGURE 4.6 are referred to as 'informal'. (1 x 2) (2)

4.6.5 Provide TWO examples of poor infrastructure that led to inaccessibility in the area affected by flooding. (2 x 2) (4)

4.6.6 Suggest THREE strategies to reduce the impact of flooding in the informal settlement. (3 x 2) (6)

[75]

GRAND TOTAL: 225

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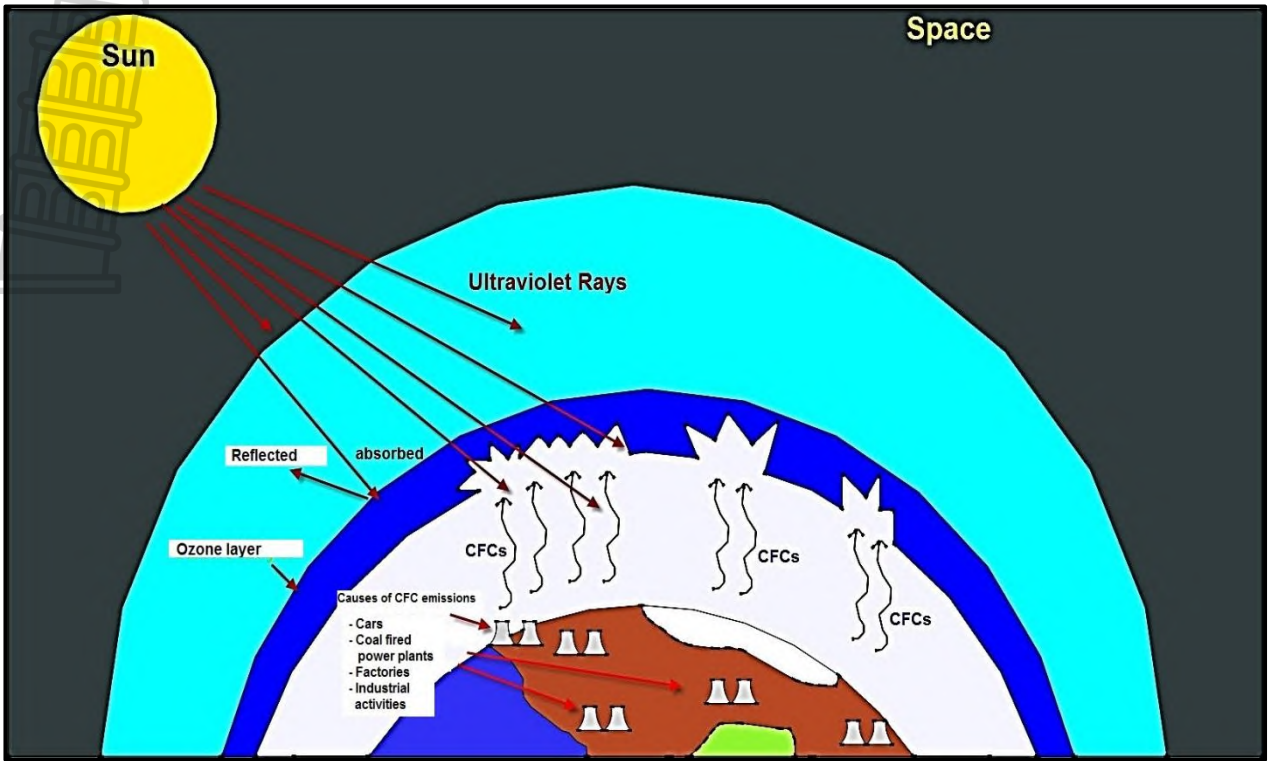
GEOGRAPHY P1 ADDENDUM

* X G E O E 3 *

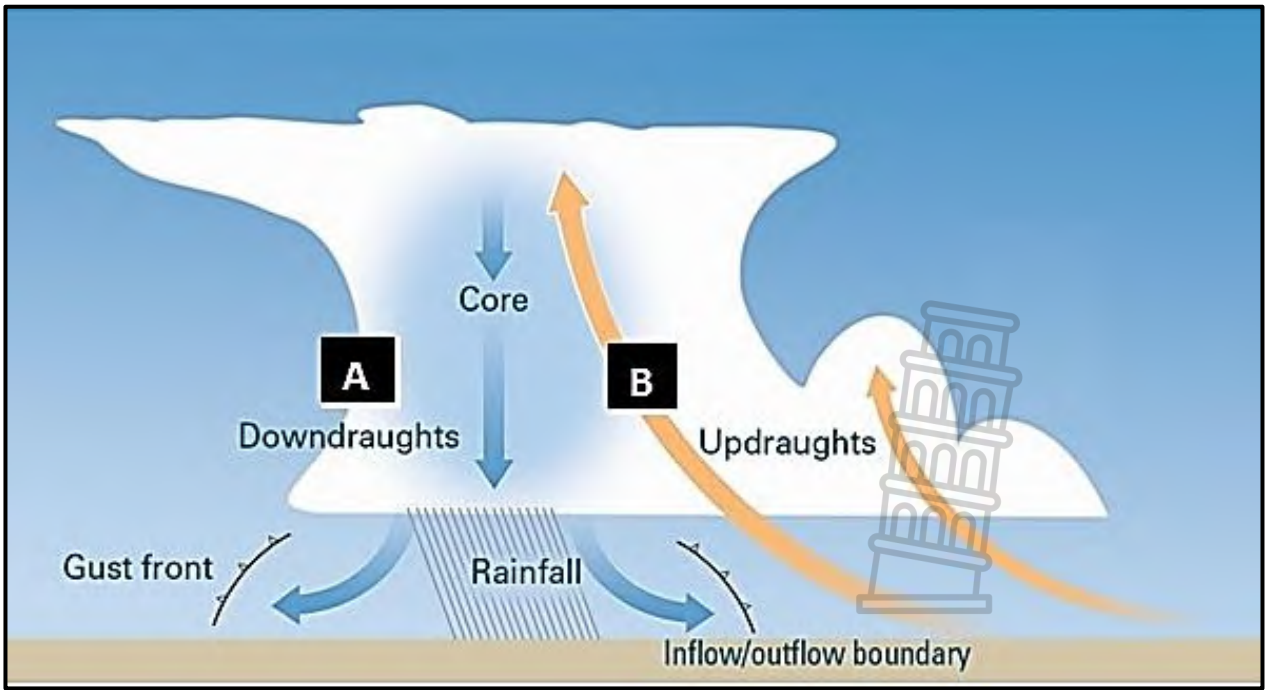
This addendum consists of 12 pages.

FIGURE 1.3: OZONE DEPLETION



[Source: Google Images]

FIGURE 1.4: CLOUD TYPE



[Source: Google Images]

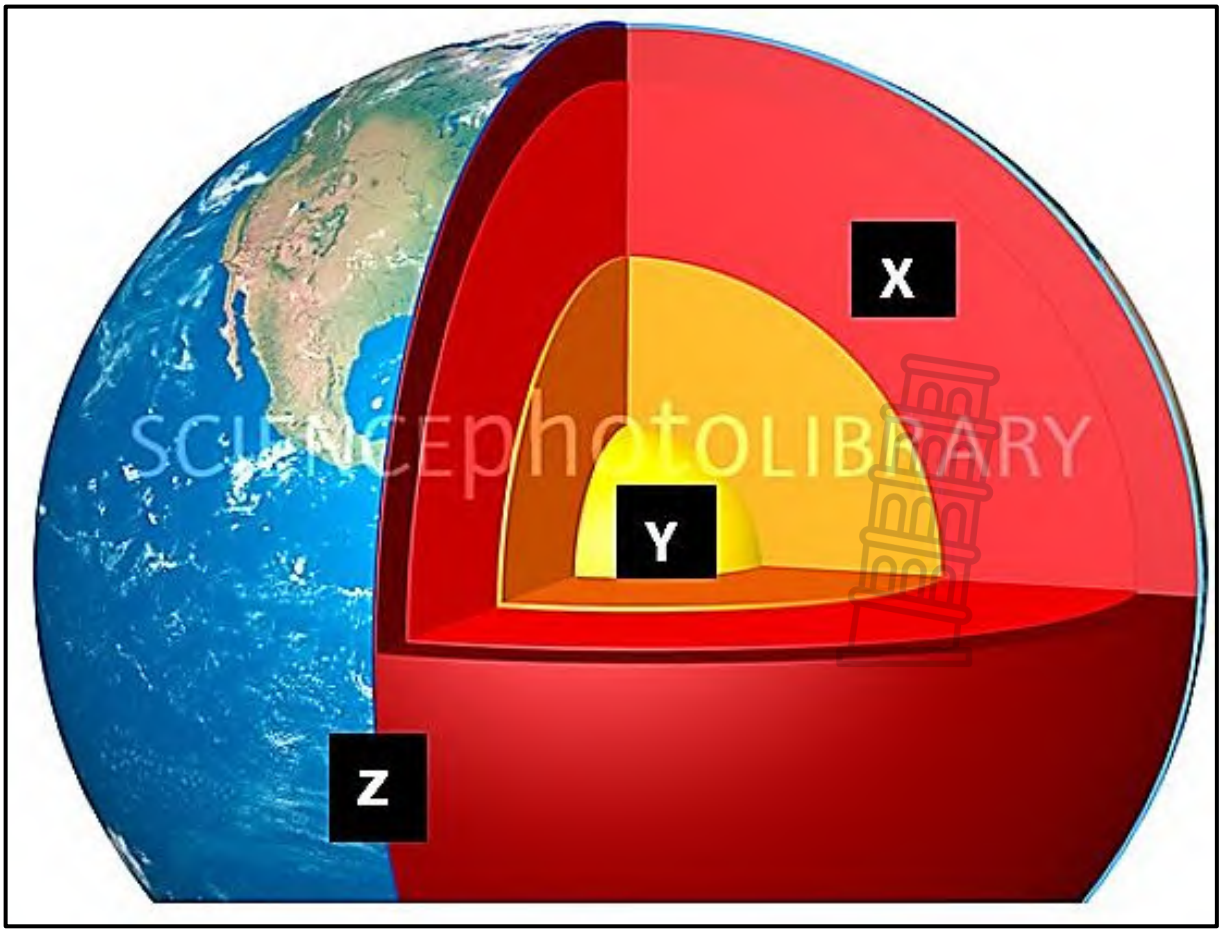
FIGURE 1.5: EARTHQUAKE

On 8 October 2015, an earthquake measuring 7,6 on the Richer scale hit the Kashmir region of Pakistan. The earthquake was the result of collision between the Indian and Eurasian plates.

Many buildings in the region collapsed. 79 000 people were killed. Landslides, and large cracks appeared in the ground. Brocken sewerage pipes contaminated water supplies and spread diseases.

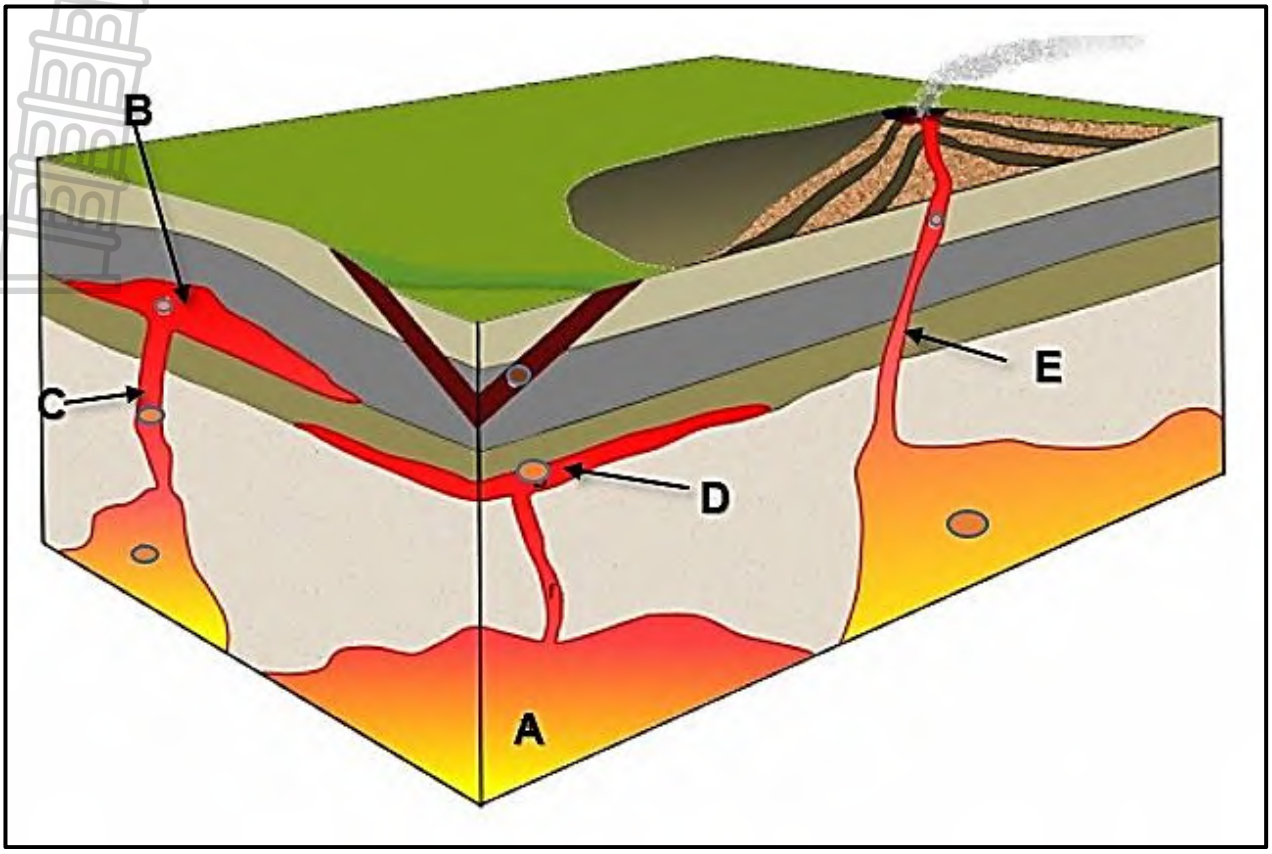
[Adapted from Google]

FIGURE 1.6: STRUCTURE OF THE EARTH



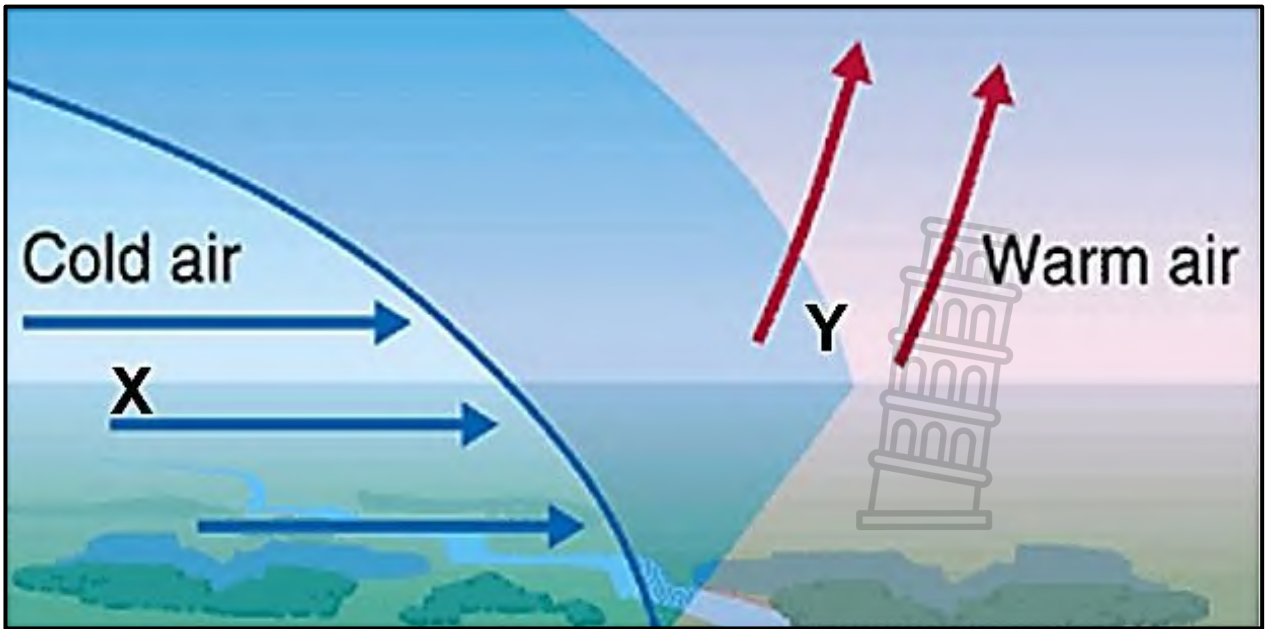
[Source: Google Images]

FIGURE 2.2: FEATURES OF IGNEOUS INTRUSION



[Source: *Google Images*]

FIGURE 2.3: RAINFALL TYPE



[Source: Google Images]

FIGURE 2.4: DROUGHT IN ETHIOPIA

ETHIOPIA DROUGHT

10 million people are in need of emergency food right now. 1,5 million children, pregnant and breast feeding women are in need of supplementary feeding. 400 000 children need treatment for acute to severe malnutrition. Two million people are in need of emergency water, sanitation and hygiene.

Droughts may happen naturally or are caused by humans. The natural causes of drought include high temperatures, low rainfall, areas that receive winds from inland etc. Human causes of drought include the removal of vegetation, overgrazing of livestock, burning of fossil fuels.

[Adapted from Google]

FIGURE 2.5: TSUNAMI

INDIAN OCEAN TSUNAMI 2004

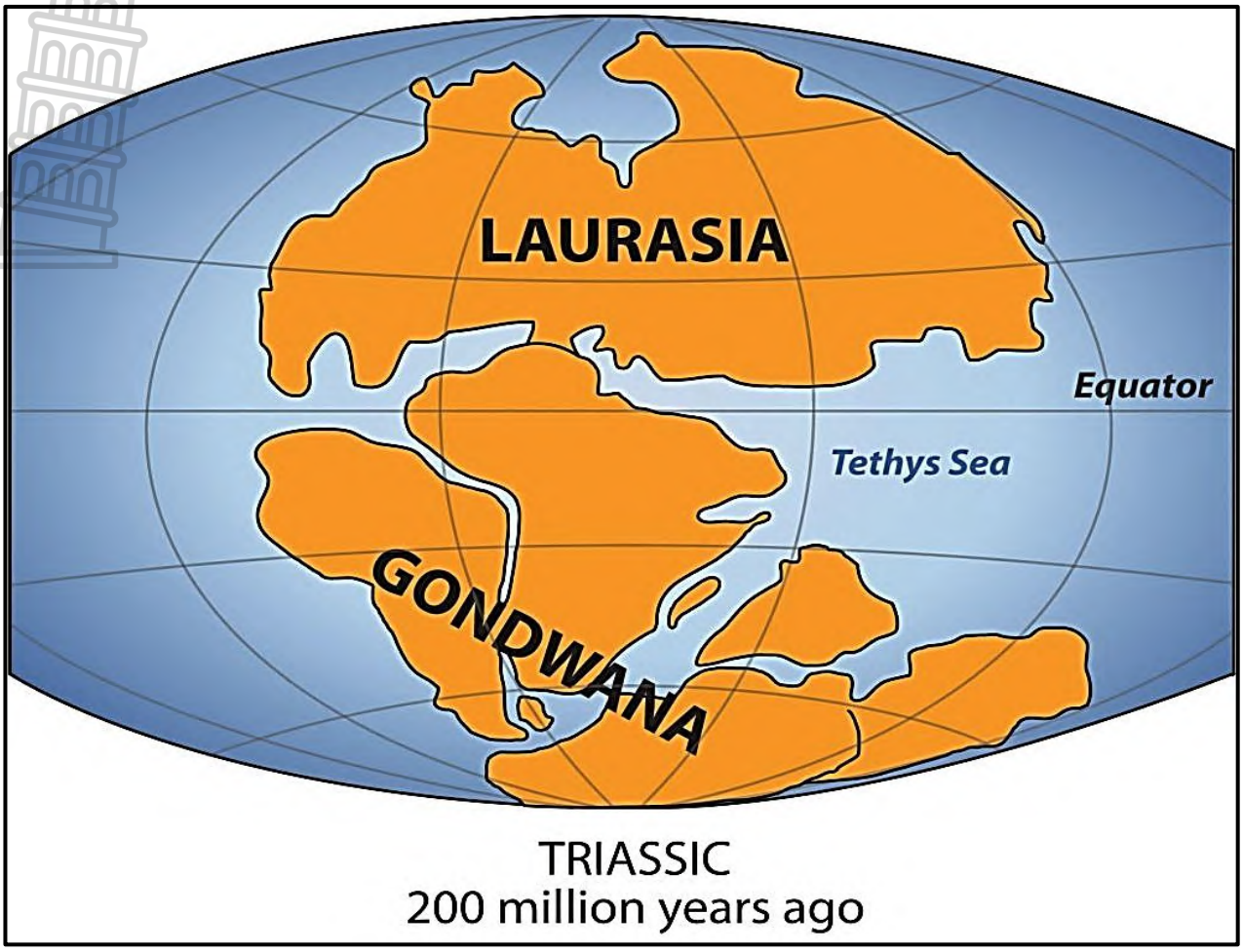
Primary effects of the tsunami

- The wave killed people in 14 different countries around the Indian Ocean totalling over 250 000.
- The highest death toll was on the Indonesian island of Sumatra where over 130 000 were killed and over 30 000 remain missing.
- In Sumatra over 500 000 people were made homeless, over 80 000 houses were destroyed as well as serious damage was caused to any ports, boats, roads, bridges, hospitals, forests and crops within 1 km of the shore.

- 8 people were killed in South Africa which is over 8000 km from the epicentre.
- In Sri Lanka, a train was derailed by the force of the wave killing over 1 000.

[Source: htttp/www.4w.tagplus.com]

FIGURE 2.6: LAURASIA AND GONDWANALAND



[Source: http//www.zmescience.com/geology/fossilized]

FIGURE 3.3: POPULATION INCREASE IN SOUTH AFRICA

There are 800 000 more people in South Africa in 2016

July McLennon, July 1, 2016

South Africa had a population growth of 800 000 people according to Statistics South Africa. This means that the population has grown with more than 15 million people from 1996.

Statistics South Africa released a community study in 2016 where it was shown that the country's population reached a total of 55,7 million people. This growth from 2001 took place as follows:

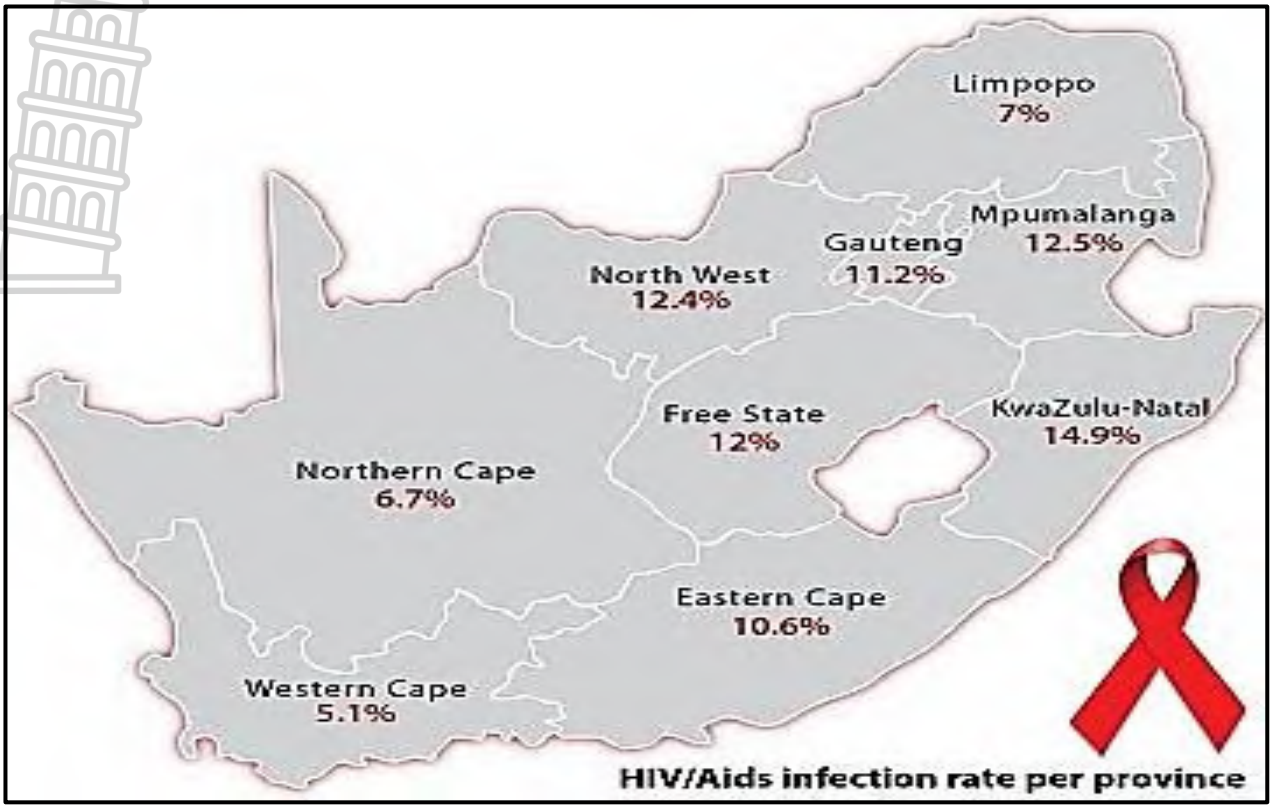
- 2002 – 44,8 million
- 2011 – 51,8 million
- 2015 – 54,9 million

Gauteng with 13,4 million people has the highest population and KwaZulu-Natal with 11,1 million people came second. Then the Eastern Cape with 7 million people and lastly the Western Cape with 6,3 million people.

The greatest increase in the population was the age group between 5–9 years old with a growth from 4,8 million in 2016.

[Adapted from Google]

FIGURE 3.4: HIV/AIDS INFECTION RATE PER PROVINCE



[Source: Google Images]

FIGURE 3.5: INTER-BASIN WATER TRANSFER

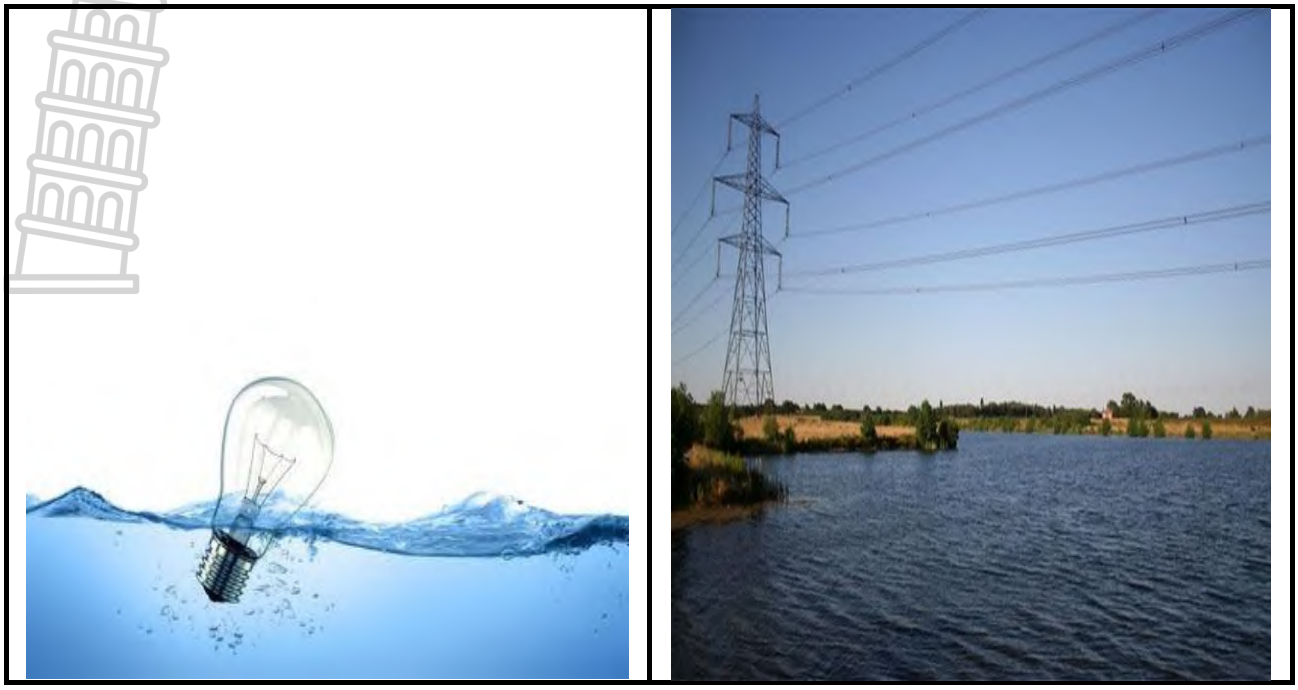
THE GARIEP-ORANGE-FISH-SUNDAYS INTER BASIN TRANSFERS

A complicated canal and tunnel system takes water from the Gariep Dam to the Nelson Mandela Metropolitan area via the Fish and Sundays Rivers. This system transfers water from the Gariep-Orange river basin to the Fish and Sundays River basins. The extra water is used for irrigation in the rural areas as well as supplying the urban centres in the Nelson Mandela Metropolitan area.

1. Water is piped from the Gariep Dam into the Great Fish River basin.
2. A weir, Elandsdrift, diverts water from the Great Fish River into a canal and through a tunnel into the Little Fish River.
3. A pipeline pipes water into a canal and into Darlington Dam on the Sundays River.
4. A pipeline pipes water from the Sundays River to the Nelson Mandela Metropolitan area.

[Adapted from Google]

FIGURE 3.6



[Adapted from Google]

FIGURE 4.3: POPULATION MOVEMENT

Mandla Tsitsa (pseudonym) with his wife (Violet) and their two children (Phokie and Lazie) in 2016 moved to England. The following are his reasons for their move:

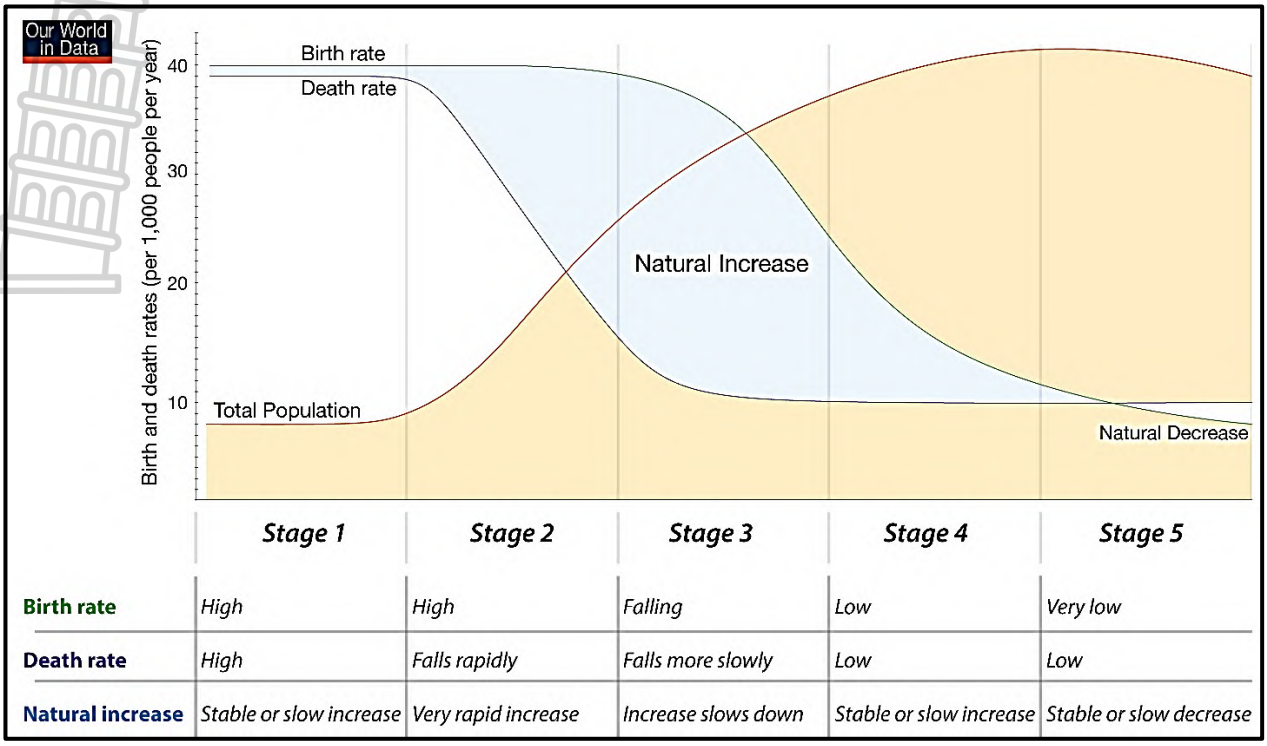
I was twice overlooked for promotion because the company where I worked followed a policy of affirmative action. After two armed robberies took place at our house and our car was hijacked, it made me realise that there are no prospects for me and my family and as I did not feel safe, I began to look for other options.

After I started finding out about other possibilities, I saw that there were many opportunities for me in England, as an electrical engineer. England needs more skilled people like me. It did not take long for me to find an excellent job in London and they were willing to carry our relocation costs (even for our pets). All necessary documentation was also handled by the firm in England.

Our children can now safely roller-skate, ride on their bikes, and can make use of an excellent public transport system. The weather is not the same as in Butterworth and we miss our relatives a lot, but if I consider everything, I feel that England has a better future for us.

[Adapted from Google]

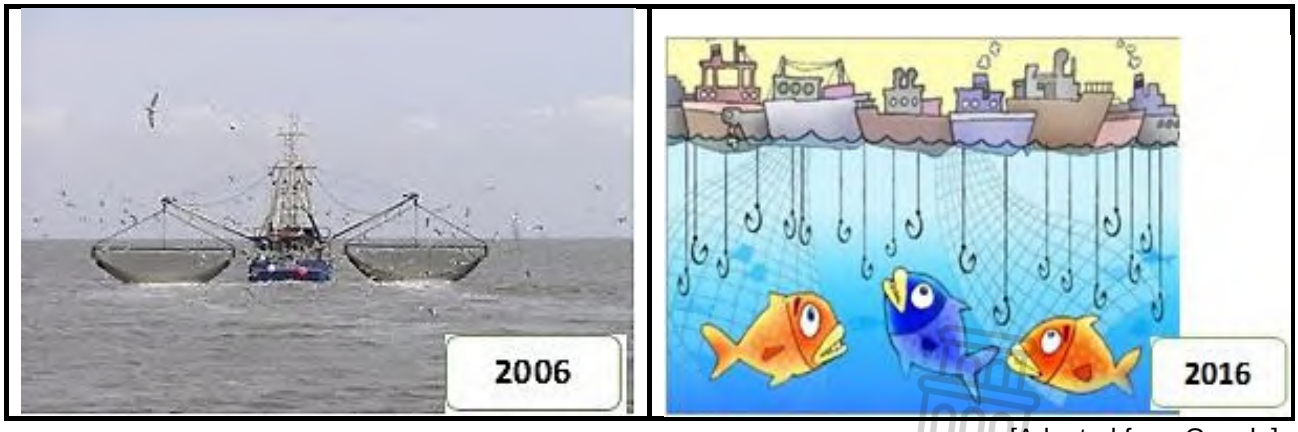
FIGURE 4.4: DEMOGRAPHIC TRANSITION MODEL



	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
Birth rate	*High*	*High*	*Falling*	*Low*	*Very low*
Death rate	*High*	*Falls rapidly*	*Falls more slowly*	*Low*	*Low*
Natural increase	*Stable or slow increase*	*Very rapid increase*	*Increase slows down*	*Stable or slow increase*	*Stable or slow decrease*

[Adapted from Google]

FIGURE 4.5



[Adapted from Google]

FIGURE 4.6: FLOODING

MOZAMBIQUE REQUESTS AID FROM SOUTH AFRICA

High rainfall filled up rivers and marshes and a large area was flooded. The consequences of the disaster were so extensive that the army was summoned to evacuate people in some of the affected areas.

A cry of distress from the Mozambican government was issued to South Africa to come and lend a hand. Captain Jaco Theunissen confirmed that the Mocuba area was the worst hit by flooding. The poor road junctions and low water bridges were flashed away which made the area unreachable. This made it necessary to deploy two Oryx-helicopters, a Hercules C-130 freight airplane and medical staff from the SA Military Health Services to help relieve the distress experienced by the people in this area.

Approximately more than 8 000 people were left homeless after extensive flooding. People living in the informal settlement were affected the most as their building structures can't withstand such weather phenomena.

[Adapted from Google]

Province of the
EASTERN CAPE
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 10

NOVEMBER 2018

GEOGRAPHY P1
MARKING GUIDELINE

MARKS: **225**

This marking guideline consists of 14 pages.

SECTION A: CLIMATE, WEATHER AND GEOMORPHOLOGY

QUESTION 1

1.1	1.1.1	15		
	1.1.2	17		
	1.1.3	Over-cast		
	1.1.4	North-East		
	1.1.5	25 knots		
	1.1.6	Rain		
	1.1.7	Saturated with water vapour	(7 x 1)	(7)
1.2	1.2.1	D (geomorphology)		
	1.2.2	E (fault)		
	1.2.3	B (crust)		
	1.2.4	G (quartzite)		
	1.2.5	C (fossil)		
	1.2.6	H (folding)		
	1.2.7	F (mantle)		
	1.2.8	A (sediments)	(8 x 1)	(8)
1.3	1.3.1	Ozone depletion is the destruction of ozone so that holes form in the ozone layer **(Concept)**	(1 x 1)	(1)
	1.3.2	Stratosphere	(1 x 1)	(1)
	1.3.3	Chlorofluorocarbon	(1 x 1)	(1)
	1.3.4	• Cars • Coal • Factories • Industrial activities • CFCs	(Any 3 x 1)	(3)

1.3.5
- It may cause skin cancer
- Eye cataracts
- Lowering of immune systems, resulting in increased illness in people and animals
- Increase in the incidence of malaria (Any 1 x 2) (2)

1.3.6
- People should try to use products which are labelled 'ozone friendly'
- The Montreal Protocol is seen as one of the most successful attempts at reducing the effects of ozone depletion
- All CFCs should be replaced
- Plant more trees
- Use public transport
- Internationally, people should keep high altitude flights to a minimum as combustion in aeroplane engines reduces the amount of oxygen in the atmosphere (Any 4 x 2) (8)

1.4 1.4.1 A – Cold air
B – Warm air (2 x 1) (2)

1.4.2 Cumulonimbus cloud (1 x 1) (1)

1.4.3 (a) Lightning (1 x 1) (1)

(b) Convectional currents within the cloud cause lightening.
The particles in the cloud become charged.
Positive charges move up by warm air and negative charges move down by cold air (Any 2 x 2) (4)

1.4.4 **Positive impacts**
- Thunderstorm is accompanied by rainfall
- There will be enough water for crops and animals
- There will be enough water for domestic use

Negative impact
- Heavy rainfalls can cause flash floods which may lead to the destruction of infrastructure and houses
- The impact thunderstorms have on people can be very harmful e.g. electrocution, shock and even deaths
- Thunder can destroy the environment
- It can hurt animals
- It can burn vegetation (Any 3 x 2) (6)

1.5 1.5.1 (a) Earthquake

(b) Epicentre (2 x 1) (2)

1.5.2 7,6 Richter scale
79 000 people were killed (2 x 1) (2)

1.5.3 Seismograph (1 x 1) (1)

1.5.4
- Earthquakes happen close to plate boundaries where plates move towards each other. (1 x 2) (2)

1.5.5
- Many buildings collapsed
- 79 000 people were killed
- Broken sewerage pipes
- Spread of diseases (Any 2 x 2) (4)

1.5.6
- There is a lack of early warning systems in less developed countries
- Buildings are poorly built and collapse easily
- Often there are few plans that inform people of what to do when an earthquake strikes
- People rely on outside help, which can take a long time to arrive
- These countries have lower standards of living (Any 2 x 2) (4)

1.6.1 X – Mantle
Y – Inner core
Z – Crust (3 x 1) (3)

1.6.2

LAYER	THICKNESS
X	2 900 km
Y	1 200 km
Z	5 to 90 km

(3 x 1) (3)

1.6.3 Decreasing (1 x 1) (1)

1.6.4 (a) Oceanic crust

(b) Continental crust (2 x 1) (2)

1.6.5
- Layer **X** is formed of rocks that are in a hot, thick molten state.
- Magma has a plastic consistency that allows it to move and flow slowly. (Any 1 x 2) (2)

1.6.6
- It is suitable for buildings
- It is suitable for agricultural activities (2 x 2) (4)

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QUESTION 2

2.1.1 D (Oxygen)

2.1.2 B (Insolation)

2.1.3 C (Mozambique)

2.1.4 B (Cumulonimbus)

2.1.5 B (Isobars)

2.1.6 C (Stratosphere and thermosphere)

2.1.7 D (Gauteng)

2.1.8 B (gaseous) (8 x 1) (8)

2.2.1 A – Batholith
B – Laccolith
C – Dyke
D – Sill (4 x 1) (4)

2.2.2 Erosion of top soil (1)

2.2.3 E (1)

2.2.4 (A) Batholith (1 x 1) (1)

2.3.1 Frontal rain (1 x 1) (1)

2.3.2 Front (1 x 1) (1)

2.3.3 Warm air – rising (1 x 1) (1)
Cold air – sinking (1 x 1) (1)

2.3.4 (a) Y (1 x 1) (1)

(b)
- Rising air that results in condensation and forms clouds
- Warm air for evaporation (Any 1 x 2) (2)

2.3.5 **Positive impact**
- More water will be available for domestic use
- Farming will benefit

Negative impact
- Low temperatures
- High risk of flooding
- Poor visibility that will result in accidents
- Availability of snow
- Effect on the economy of the province (Any 4 x 2) (8)

2.4.1 Drought is a long period with little rainfall **(Concept)** (1 x 1) (1)

2.4.2
- Removal of vegetation
- Overgrazing
- Burning of fossil fuels (Any 2 x 1) (2)

2.4.3
- Shortage of food
- Malnutrition
- Shortage of water
- Outbreak of diseases (Any 2 x 2) (4)

2.4.4
- Shortage of water for animals
- Shortage of water for plants
- Reduction in soil quality
- Disruption of the natural ecosystem (Any 2 x 2) (4)

2.4.5
- Building dams to store water
- Cloud seeding to artificially increase rainfall
- Desalination of sea water
- Crop rotation to protect soil to store water
- Water restrictions
- Recycling
- Redirecting water to provide for irrigation in areas prone to drought
- Harvesting rain water from rooftops
- Development of sustainable agricultural practices
- Educating people to change their attitude towards water usage
- Increase price of water to reduce usage (Any 2 x 2) (4)

2.5.1 Tsunami is a wave of water produced when an earthquake occurs under the ocean. **(Concept)**
Earthquake is a violent shaking of the earth's crust caused by movement along a fault. **(Concept)** (2 x 1) (2)

2.5.2 Sri Lanka
Indonesia (2 x 1) (2)

2.5.3 8 people (1 x 1) (1)

2.5.4 South Africa is far away from the epicentre (8 000 km away) (1 x 2) (2)

2.5.5
- Survivors were left homeless as the houses were destroyed
- Crops were destroyed that resulted in food shortages
- Poor infrastructure as roads and bridges collapsed
- No health care facilities
- Businesses were affected as many survivors may have lost their jobs. (Any 2 x 2) (4)

2.5.6
- Build specially strengthened buildings
- Educate people
- Having disaster supplies on hand
- Early warnings must be issued (Any 2 x 2) (4)

2.6.1 Plate tectonics is the theory of formation and motion of the plates that make up the Earth's crust **(Concept)** (1 x 1) (1)

2.6.2 continental drift (1 x 1) (1)

2.6.3 Africa (1 x 1) (1)

2.6.4 (a) Europe
North America (2 x 1) (2)

(b) South America
Africa
Antarctica
Asia (Any 3 x 1) (3)

2.6.5 Pangea (1 x 1) (1)

2.6.6
- Rocks of similar type
- The continents fit together like a jigsaw puzzle
- Fossils of similar reptiles were also found
- Fold mountain systems
- The Rift Valley
- Glaciers that covered large parts of the continents (3 x 2) (6)

[75]

SECTION B: POPULATION AND WATER RESOURCES

QUESTION 3

3.1 3.1.1 Rainfall distribution

3.1.2 freezing

3.1.3 Desalination

3.1.4 transpiration

3.1.5 Infiltration

3.1.6 oceans

3.1.7 Marine pollution (7 x 1) (7)

3.2 3.2.1 D

3.2.2 E

3.2.3 B

3.2.4 H

3.2.5 C

3.2.6 G

3.2.7 A

3.2.8 I (8 x 1) (8)

3.3 3.3.1 Population is the total number of people within a given area (1 x 1) (1)

3.3.2 2002 = 44,8 million
2016 = 54,9 million (2 x 1) (2)

3.3.3 Lowest – Western Cape (6,3 million)
Highest – Gauteng (13,4 million) (2 x 1) (2)

3.3.4 From 2002 to 2016 the population of South Africa increased (1 x 2) (2)

3.3.5
- Demand for water increases with a growing population
- As population increases, so available cropland decreases
- Original forests have disappeared
- Shortage of food (Any 2 x 2) (4)

3.3.6
- Practise birth control
- Availability of contraception
- Sterilisation
- Family planning
- People can be educated about the problems of population growth
- Encourage abortion (Any 2 x 2) (4)

3.4 3.4.1 Acquired Immune Deficiency Syndrome (1 x 1) (1)

3.4.2 Highest – KwaZulu Natal (14,9%)
Lowest – Western Cape (5,1%) (2 x 1) (2)

3.4.3
- Frequent fevers and sweats
- Lack of energy
- Swollen lymph nodes
- Persistent skin rashes or flaky skin
- Persistent or frequent yeast infections (oral or vaginal)
- Pelvic inflammatory disease in women that does not get better with treatment (Any 2 x 1) (2)

3.4.4
- South Africa has more people living with HIV than any other country in the world.
- The number of HIV-positive people in 2009 was estimated to be 5,6 million (Any 1 x 2) (2)

3.4.5
- HIV is spread through body fluids such as blood, semen, vaginal fluids and breast feeding
- Through unprotected sex
- During pregnancy
- During birth
- Reusing and sharing needles (Any 2 x 2) (4)

3.4.6
- Motivate people to change their negative attitude, ideas and behaviour towards people with HIV and Aids
- Make people more aware of what a stigma is and provide them with the knowledge and skills to reduce it
- Address the fears and misconceptions about HIV transmission
- Discuss taboo topics such as gender, violence, sexuality, sex and drug use
- Provide skills to challenge the stigma and change people's behaviour (Any 2 x 2) (4)

3.5 3.5.1 Water transfer is moving water from one area to another (1 x 1) (1)

3.5.2 Nelson Mandela Metropolitan Municipality
Eastern Cape (2 x 2) (2)

3.5.3
- Water is used for irrigation
- Supplying urban centres in the Nelson Mandela Metropolitan area (2 x 1) (2)

3.5.4
- Water is piped from the Gariep Dam to the Great Fish River basin
- A weir, Elandsdrift, diverts water from the Great Fish River into a canal and through a tunnel into the Little Fish River
- A pipeline pipes water into a canal and to the Darlington Dam on the Sundays River. (2 x 2) (4)

3.5.5 **Human factors**
- The population is increasing
- Commercial farmers are using more water for irrigation
- Urbanisation
- Untreated waste water
- Mines and factories use a lot of water
- Pollution of water sources

Physical factors
- Rainfall is not evenly distributed in South Africa
- Alien vegetation consumes more water
- Climate change (Any 3 x 2) (6)

3.6 3.6.1 Hydro-electricity (1 x 1) (1)

3.6.2 Renewable (1 x 1) (1)

3.6.3 It is used to generate electricity (1 x 1) (1)

3.6.4
- Domestic use (an example of any domestic use is accepted)
- Used for agricultural activities (2 x 1) (2)

3.6.5
- The availability of groundwater helps to make up for high evaporation rates
- People can tap into this groundwater supply through wells and boreholes
- At present, over 2 000 m^3 of water is removed from the ground through boreholes everyday (Any 1 x 2) (2)

3.6.6 **In the home:**

- Close taps when not using the water
- Fix dripping taps and leaks
- Use water-saving showerheads
- Flush toilets less often
- Take showers and fewer baths
- Re-use dirty water for cleaning e.g. washing cars or floors

In the garden

- Use a watering can instead of a hose pipe
- Collect rainwater from the roof
- Use bath water to water vegetables
- Water plants in the evening

In the community

- Report leaking pipes to the municipality
- Remove invasive alien plants
- Educate others about using water sustainably

(Any 4 x 2) (8)

[75]

QUESTION 4

4.1	4.1.1	Push factor		
	4.1.2	Voluntary		
	4.1.3	Immigrant		
	4.1.4	Refugee		
	4.1.5	Xenophobia		
	4.1.6	Emigration		
	4.1.7	Pull factor	(7 x 1)	(7)
4.2	4.2.1	Oceans		
	4.2.2	Low pressure		
	4.2.3	High pressure		
	4.2.4	Moist		
	4.2.5	Clouds		
	4.2.6	Precipitation		
	4.2.7	Surface runoff		
	4.2.8	Rise	(8 x 1)	(8)
4.3	4.3.1	Migration		(1)
	4.3.2	(a) International (b) Voluntary (c) Temporal	(3 x 1)	(3)
	4.3.3	• He is looking for better job opportunities • He is not feeling safe in South Africa	(Any 1 x 1)	(1)
	4.3.4	• Better job opportunities • Better standard of living • Safety	(Any 2 x 2)	(4)

4.3.5
- Migration increase skills shortages in South Africa
- Brain drain
- It leaves older people only in South Africa
- There is less money to support local businesses because many people leave the country
- Population shrinks so local authorities find it too expensive to maintain schools, clinics and other services (Any 3 x 2) (6)

4.4 4.4.1 Demographic transition model is a model explaining how country's population changes over time **(Concept)** (1 x 1) (1)

4.4.2 Stage 2 (1 x 1) (1)

4.4.3 Stage 4 (1 x 1) (1)

4.4.4 Birth rate and death rate in stage 1 are high (1 x 2) (2)

4.4.5
- Improved medical services
- Better diet
- Better services and infrastructure
- Fewer wars
- Better quality of life (Any 2 x 2) (4)

4.4.6
- The availability of contraception
- The status of women
- Education
- Job opportunities
- Medical care
- Culture and tradition
- Religion
- The age of marrying
- Polygamy
- Political system (Any 3 x 2) (6)

4.5 4.5.1 Overfishing is catching fish faster than they can reproduce, thereby gradually reducing the fish resources. **(Concept)** (1 x 1) (1)

4.5.2
- More people and companies are fishing in the world's oceans
- The lack of other jobs in coastal communities, forces people to survive by fishing
- Fishing technology has greatly improved, which results in more fish being caught
- Lack of laws to control the quantity of fish which can be removed from the world's oceans (Any 2 x 2) (2)

4.5.3
- Overfishing reduces the amount of food available for people to eat
- Overfishing one species affects many other species
- A decline in fish stocks leads to job losses and hardship

(Any 2 x 2) (4)

4.5.4
- The oceans contain vast stores of oxygen
- Sea weed is used by people as food
- There are oil and gas fields in many oceans
- Ocean can provide tidal and wave energy
- Ocean transport is one of the most affordable forms of transport
- Human use oceans for tourism and holidays
- They moderate our climate and temperature (Any 4 x 2) (8)

4.6 4.6.1 Mozambique (1 x 1) (1)

4.6.2 South Africa (1 x 1) (1)

4.6.3 SA Military Health Services (1 x 1) (1)

4.6.4
- Houses are built out of plastic, wood, zinc, etc.
- Very dense housing with unplanned street patterns

(Any 1 x 2) (2)

4.6.5
- Poor road junctions were washed away
- Low bridges were washed away which made the area unreachable (inaccessible) (2 x 2) (4)

4.6.6
- Providing of formal housing in other areas
- Relocating buildings within settlements
- Preventing people from building houses in areas at high risk of flooding
- Improving the design of houses
- Installing and maintaining drains
- Designing disaster plans to handle a flood situation when it happens
- Educating people about flood dangers (Any 3 x 2) (6)

[75]

TOTAL: 225