NATIONAL SENIOR CERTIFICATE

GRADE 11

NOVEMBER 2014

GEOGRAPHY P1

MARKS: 225

TIME: 3 hours

IGEOGE1

This question paper consists of 14 pages.

INFORMATION AND INSTRUCTIONS

1. This question paper consists of TWO sections, namely SECTION A and SECTION B.

2. Answer ANY THREE questions of 75 marks for a total of 225 marks.

3. All diagrams are included in the ANNEXURE.

4. Leave a line between the subsections 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. Do not write in the margins of the ANSWER BOOK.

8. Where possible, illustrate your answer with labelled diagrams.

9. Write neatly and legibly.

10. Mark allocation: If marks are given as follows – 3 x 2 = (6), it means that THREE facts should be given for TWO marks each.
If marks are given as follows – 3 x 1 = (3), it means that THREE facts should be given for ONE mark each.
Essay type questions must be answered in FULL SENTENCES. LISTING will result in marks being deducted.

SECTION A: THE ATMOSPHERE AND GEOMORPHOLOGY

QUESTION 1

1.1 Select from the list below a suitable term that matches the definition provided in. Write only the question number (1.1.1–1.1.7) and the term of your choice, for example 1.1.8 Geography.

Planetary winds; Isobar; Climatic region; Isotherm; Front; Insolation; Atmospheric pressure; Cyclone; Monsoons; Equator; Geostrophic Flow

1.1.1 Incoming solar radiation

1.1.2 The force exerted against a surface by the weight of a column of air above that surface
.

1.1.3 An area over which temperature and rainfall conditions are very similar, and different from those in other areas

1.1.4 Major winds that blow all year round over large expanses of the earth's surface

1.1.5 The boundary between air masses that have different characteristics

1.1.6 Theoretical wind that would result from an exact balance between the Coriolis force and the Pressure Gradient force.

1.1.7 Lines joining places of equal temperature (7 x 1) (7)

1.2 Match the terms/concepts in COLUMN B with the descriptions in COLUMN A. Write only the letter (A–H) of your choice next to the question number (1.2.1–1.2.8) for example 1.2.9 J.

COLUMN A		COLUMN B	
1.2.1	The relief of the earth's surface	A	Canyon
1.2.2	Breakdown of rocks due to chemical, mechanical and temperature differences	B	Plateau
1.2.3	A deep narrow valley in an arid region	C	Exfoliation
1.2.4	Removal of broken rock material by wind, water or ice	D	Homoclinal shifting
1.2.5	Also known as scarp retreat	E	Topography
1.2.6	The lowering and shifting of the watershed on a homoclinal ridge	F	Back wasting
1.2.7	Outer layers of igneous rock peel off due to temperature changes causing expansion and contraction	G	Weathering
1.2.8	Large high-lying area that is relatively flat	H	Erosion

(8 x 1) (8)

1.3 Refer to FIGURE 1.3 showing the earth's revolution around the sun to answer the following questions.

1.3.1 Which term/concept describes the constant alignment of the axis as the earth's revolution takes place? (1 x 2) (2)

1.3.2 FIGURE 1.3 shows the position of the earth at four important dates in the Southern Hemisphere. Match the descriptions below to the letters A, B, C, or D. Write only the letter (A–D) from the diagram next to the question number (A–D)

A 21 December – Southern Hemisphere tilts towards the sun.
B 22 June – Southern Hemisphere tilts away from the sun.
C 21 March – The sun directs insolation onto the equator.
D 22 September – The sun directs insolation onto the equator.

(4 x 1) (4)

1.3.3 What happens on the dates of the equinox? (1 x 1) (1)

1.3.4 On what date do the polar areas in the Southern Hemisphere experience 24 hours of night? (1 x 1) (1)

1.3.5 Explain why the polar areas in the Southern Hemisphere would experience 24 hours of night. (1 x 2) (2)

1.4 Read through the article FIGURE 1.4 on the Sahel Desert and answer the questions that follow.

1.4.1 Define the term *desertification*. (1 x 2) (2)

1.4.2 List TWO causes of desertification mentioned in the article. (2 x 1) (2)

1.4.3 Describe THREE negative effects of desertification on the environment. (3 x 2) (6)

1.4.4 Write a short paragraph of approximately 8 lines in which you explain sustainable strategies that can be implemented, to manage desertification. (4 x 2) (8)

1.4.5 Evaluate why the implementation of these sustainable strategies would be difficult in the Sahel Desert. (2 x 2) (4)

1.5 Refer to FIGURE 1.5 a diagram showing topography associated with horizontal layered rocks to answer the following questions.

1.5.1 Identify the landforms at **A, B** and **C** respectively. (3 x 1) (3)

1.5.2 Differentiate between the dimensions of landforms **A** and **C**. (1 x 2) (2)

1.5.3 Landforms associated with horizontal rocks have both positive and negative impacts for people living in these areas. Explain in a paragraph of approximately 8 lines at least TWO negative impacts and TWO positive impacts of these landscapes on human activities. (4 x 2) (8)

1.5.4 What type of erosion is responsible for these landforms maintaining their height despite getting narrower? (1 x 2) (2)

1.6 Refer to FIGURE 1. 6 which shows an example of tors. Use the diagram to answer the following questions.

1.6.1 What is **A** called? (1 x 2) (2)

1.6.2 Name the type of igneous intrusion that is associated with the formation of tors. (1 x 2) (2)

1.6.3 Identify the rock type associated with tors. (1 x 1) (1)

1.6.4 Explain the processes responsible for the formation of tors. (4 x 2) (8)

1.6.5 Name and explain the type of weathering linked to the formation of granite domes. (2 x 2) (4)

[75]

QUESTION 2

2.1 Refer to the synoptic weather map, FIGURE 2.1 to identify the following weather features. Write only the letter of your choice from the map, against the question number (2.1.1–2.1.8).

2.1.1 The South Indian High pressure system

2.1.2 Cold Front

2.1.3 Trough

2.1.4 Ridge

2.1.5 Weather station

2.1.6 Low pressure

2.1.7 Saddle

2.1.8 South Atlantic High Pressure system (8 x 1) (8)

2.2 Select from the list below a term/ concept that matches the descriptions (2.2.1–2.2.7) provided. Write only the term/concept of your choice next to the question number (2.2.1–2.2.7), for example 2.2.8 Geomorphology.

Great Karoo; Debris; Basin; Laccolith; Poort; Little Karoo; Slumps; Scree; Mud; Knick point

2.2.1 It is found at the change in gradient at the base of the slope

2.2.2 An igneous intrusion that pushes into the rock strata forming a dome shape

2.2.3 The gap between mountains

2.2.4 Loose or broken down material after the process of erosion

2.2.5 The part of South Africa that lies between the northern chain of Cape fold mountains and the escarpment

2.2.6 Loose material slipping down a slope along a curved path

2.2.7 An alternative to describe the talus slope (7 x 1) (7)

2.3 Read through the article, FIGURE 2.3, on the effects of El Nino and La Nina and answer the following questions:

2.3.1 Explain the occurrence of El Nino. (1 x 2) (2)

2.3.2 Name the season in South Africa when El Nino strikes. (1 x 1) (1)

2.3.3 Contrast how El Nino and La Nina affect the weather in South Africa. (2 x 2) (4)

2.3.4 Scientists refer to the event when exceptionally cool water lies off the coast of South America as La Nina. In a paragraph of approximately 8 lines, explain what happens in the Pacific Ocean during a La Nina event. (4 x 2) (8)

2.4 FIGURE 2.4 shows the formation of a Föhn wind. Use the figure to answer the following questions.

2.4.1 Explain what a Föhn wind is. (1 x 2) (2)

2.4.2 Provide the name of a similar wind found in South Africa. (1 x 1) (1)

2.4.3 Explain why precipitation will occur on the windward side of the mountain. (3 x 2) (6)

2.4.4 Classify any THREE natural disasters that Föhn winds and other similar kinds of winds can cause. (3 x 1) (3)

2.4.5 Explain why air will be warmer on the lower slopes on the leeward side of a mountain, compared to a similar height above sea level on the windward side. (2 x 2) (4)

2.5 Refer to FIGURE 2.5 which depicts an example of a cuesta to answer the following questions.

2.5.1 Cuestas are associated with inclined strata. Name the type of rock associated with this landform. (1 x 1) (1)

2.5.2 Identify slopes **A** and **B** that are associated with a cuesta. (2 x 1) (2)

2.5.3 Describe each of these slopes identified in QUESTION 2.5.2. (2 x 2) (4)

2.5.4 Use the diagram to explain how cuestas and hogsbacks differ. (1 x 2) (2)

2.5.5 TWO types of cuesta's are formed when strata is pushed up and down by warping and folding. Name these TWO different types of cuestas. (2 x 1) (2)

2.5.6 Explain any TWO ways in which cuestas can be of benefit to humans. (2 x 2) (4)

2.6 Study FIGURE 2.6, showing mass movement, and answer the following questions.

2.6.1 Identify the type of mass movement shown in FIGURE 2.6. (1 x 1) (1)

2.6.2 Describe the type of soil that is associated with this type of mass movement. (1 x 1) (1)

2.6.3 Describe the type of mass movement that you have identified in QUESTION 2.6.1. (1 x 2) (2)

2.6.4 State the effect that this type of mass movement, identified in QUESTION 2.6.1 will have on the surface. (1 x 2) (2)

2.6.5 When people in urban areas do not plan properly and do not use slopes correctly, the risk of slope failure increases. In a paragraph of approximately 8 lines explain how the activities of people contribute to slope failure. (4 x 2) (8)

[75]

SECTION B: DEVELOPMENT GEOGRAPHY AND RESOURCES AND SUSTAINABILITY

QUESTION 3

3.1 Read the statements below and determine if the statement refers to an **(MEDC) – More economically developed country** or **(LEDC) – Less economically developed country**. Write only your choice (**MEDC** or **LEDC**) next to the question number (3.1.1−3.1.8) for example 3.1.9 LEDC.

3.1.1 Very few individuals die before the age of 5 years.

3.1.2 Death rate is high due to poor health care and widespread disease.

3.1.3 The majority of people have access to a doctor.

3.1.4 Housing is often inadequate with limited access to clean running water and electricity.

3.1.5 Literacy rates are high because the majority of children have access to free education.

3.1.6 Life expectancy is high due to medical care and quality of life.

3.1.7 20–45 people per 1 000 people are born per year.

3.1.8 200–500 babies per 1 000 people are born per year. (8 x 1) (8)

3.2 Match the list of terms below with the statements (3.2.1–3.2.7). Write only the number (3.2.1–3.2.6) and the correct answer, for example 3.2.7 Geography.

Fracking; Extraction; Thermal energy; Conventional; Biomass energy; Non-Conventional; Biogas energy

3.2.1 Energy transferred from one source to another

3.2.2 The removal of raw materials from its natural environment

3.2.3 Energy of the usual type, normal or traditional

3.2.4 Energy sources that provide an alternative

3.2.5 The energy produced by heat and from the methane gas that is released, as plant and animal matter decompose

3.2.6 The energy produced by burning vegetation and organic material

3.2.7 Extracting natural gas from sedimentary rocks. (7 x 1) (7)

3.3 Use the world map, (FIGURE 3.3), which indicates Gross National product per person and answer the following questions.

3.3.1 Define the concept *Gross National Product*. (1 x 2) (2)

3.3.2 Name any TWO other economic indicators (excluding GDP and GNP) of development. (2 x 2) (4)

3.3.3 Identify the continent with the lowest Gross National Product. (1 x 2) (2)

3.3.4 In 1980, the Brandt Report used the expression the 'North-South divide'. Deduce how this map reinforces Brandt's findings. (1 x 2) (2)

3.3.5 Explain why the statistics represented on this map never really present a complete and accurate picture of what life is like on a continent. (2 x 2) (4)

3.4 Study FIGURE 3.4, which depicts a model of development to answer the following questions.

3.4.1 Name the model of development depicted in FIGURE 3.4. (1 x 2) (2)

3.4.2 Identify the stage on the graph which would typify an advanced highly-developed industrial economy. (1 x 2) (2)

3.4.3 List TWO characteristics of Stage 4 (Drive to maturity). (2 x 2) (4)

3.4.4 This model of development has been strongly criticised and replaced by a number of different theories and models. Discuss in a paragraph of approximately 8 lines the criticism levelled against this model of development. (4 x 2) (8)

3.5 Study FIGURE 3.5, a cartoon about acid rain and answer the following questions.

3.5.1 What form of pollution is the cause of acid rain? (1 x 1) (1)

3.5.2 Identify the main greenhouse gas associated with acid rain. (1 x 2) (2)

3.5.3 Explain TWO detrimental effects of acid rain depicted in the cartoon. (2 x 2) (4)

3.5.4 What impact does acid rain have on human health? (1 x 2) (2)

3.5.5 Discuss TWO possible solutions to the problem of acid rain. (2 x 2) (4)

3.6 Read through the newspaper article on 'Wind turbines', FIGURE 3.6, to answer the following questions.

3.6.1 Explain what *wind energy* is. (1 x 2) (2)

3.6.2 Is wind energy a form of conventional or non-conventional energy? (1 x 1) (1)

3.6.3 Interpret what is meant by the following statement: "SA to enter clean green energy era". (1 x 2) (2)

3.6.4 '... the Van Stadens project has however, not all been a breeze for the developers after a handful of local residents complained about …'

State TWO possible complaints that could have been levelled by the residents against these wind turbines. (2 x 2) (4)

3.6.5 In a paragraph of approximately 8 lines explain why the use of energy forms such as wind energy is increasing throughout the world. (4 x 2) (8)

[75]

QUESTION 4

4.1 Match the terms/concepts below with the statements that follows. Write only the term/concept next to the question number (4.1.1–4.1.7)

Tertiary activities; Life expectancy; Infant mortality; Industrialised; Capitalism; Primary activities; Modernisation

4.1.1 Economic system based on private ownership.

4.1.2 Type of development based on economic growth, technology and industrialisation.

4.1.3 Economic activities providing a service.

4.1.4 The average number of years that a new born baby in a population is expected to live.

4.1.5 The number of infant deaths in a country in a specific year.

4.1.6 A description given to a country that has many manufacturing and technology based industries.

4.1.7 Those activities involving forestry, farming, mining and fishing that extract natural resources directly from the environment (7 x 1) (7)

4.2 Choose a term/word from COLUMN B which matches the description in COLUMN A. Write only the letter (A–H) next to the question number (4.2.1–4.2.8) in the answer book, for example 4.2.9 I.

COLUMN A		COLUMN B	
4.2.1	Electricity produced from turbines powered by falling water	A	Solar energy
4.2.2	The amount of carbon dioxide or other carbon compounds in the atmosphere	B	Geothermal energy
4.2.3	The increase in unsustainable human activities that increase the emission of greenhouse gases.	C	Land degradation
4.2.4	Produced from natural underground heat in rocks and fluids under the earth's surface.	D	Despoliation
4.2.5	Damage and exploitation of the of the landscape by humans in search for more resources	E	Hydro power
4.2.6	The effect of coal being extracted from the earth by mining	F	Carbon footprint
4.2.7	The ability to create and store electricity	G	Global warming
4.2.8	The control of the use of energy resources to avoid them being exploited	H	Sustainable energy

(8 x 1) (8)

4.3 Read through the case study, FIGURE 4.3, 'AGRINAS' to answer the questions below.

4.3.1 Explain what community-based development is. (1 x 2) (2)

4.3.2 Name TWO ways in which people in the community (in the case study) act together to produce goods of value. (2 x 2) (4)

4.3.3 List THREE skills that the local farmers need. (3 x 1) (3)

4.3.4 Identify ONE advantage and ONE disadvantage of community organised labour. (2 x 2) (4)

4.4 Study the quotation below, which is based on the role the state and business plays in the development of Africa, and answer the questions that follows.

> "In Africa, many newly independent, developing countries placed their faith in the government as agents of economic development. However in the last 30 years there has been a lack of success in government-driven economic programmes."

4.4.1 What role does private business play in the development of Africa? (1 x 2) (2)

4.4.2 Define the concept '*weak state* control'. (1 x 2) (2)

4.4.3 'The South African government allows a free-market system to operate in South Africa.' What do you understand by this statement? (1 x 2) (2)

4.4.4 Is this (statement to QUESTION 4.4.3) an example of weak state control? Give a reason for your answer. (1 + 2) (3)

4.4.5 In 2010, the South African government outlined its New Growth Path, (NGP) framework in response to the ongoing challenges we face in South Africa. In a paragraph of approximately 8 lines, identify at least FOUR challenges that the South African economy faces. (4 x 2) (8)

4.5 Read through the case study on the 'Koeberg nuclear power station', FIGURE 4.5, to answer the following questions.

4.5.1 What mineral is used to produce nuclear energy? (1 x 1) (1)

4.5.2 Explain why it was necessary to develop a nuclear power station in the Western Cape. (1 x 2) (2)

4.5.3 The production of nuclear energy yields a by-product which is harmful to humans. Name this harmful by-product. (1 x 1) (1)

4.5.4 Deduce from the CASE STUDY any TWO safety precautions that have been implemented at the Koeberg Nuclear Power Station. (2 x 2) (4)

4.5.5 Despite the risks involved in using nuclear energy, the world's reliance on nuclear energy is increasing. Write a paragraph of approximately 8 lines in which you analyse some of the advantages of nuclear energy. (4 x 2) (8)

4.6 Use the case study in FIGURE 4.6 to answer the following questions on Energy Management in South Africa.

4.6.1 Define the concept *'greener technologies'*. (1 x 2) (2)

4.6.2 Suggest TWO ways in which South Africa can move towards greener technologies. (2 x 2) (4)

4.6.3 What benefits will the use of 'greener technologies' have on the economy and the environment? State at least TWO economic benefits and TWO environmental benefits. (4 x 2) (8)

[75]

TOTAL: 225

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GEOGRAPHY P1 ANNEXURE

IGEOGE3

This annexure consists of 11 pages.

FIGURE 1.3: EARTH'S REVOLUTION AROUND THE SUN

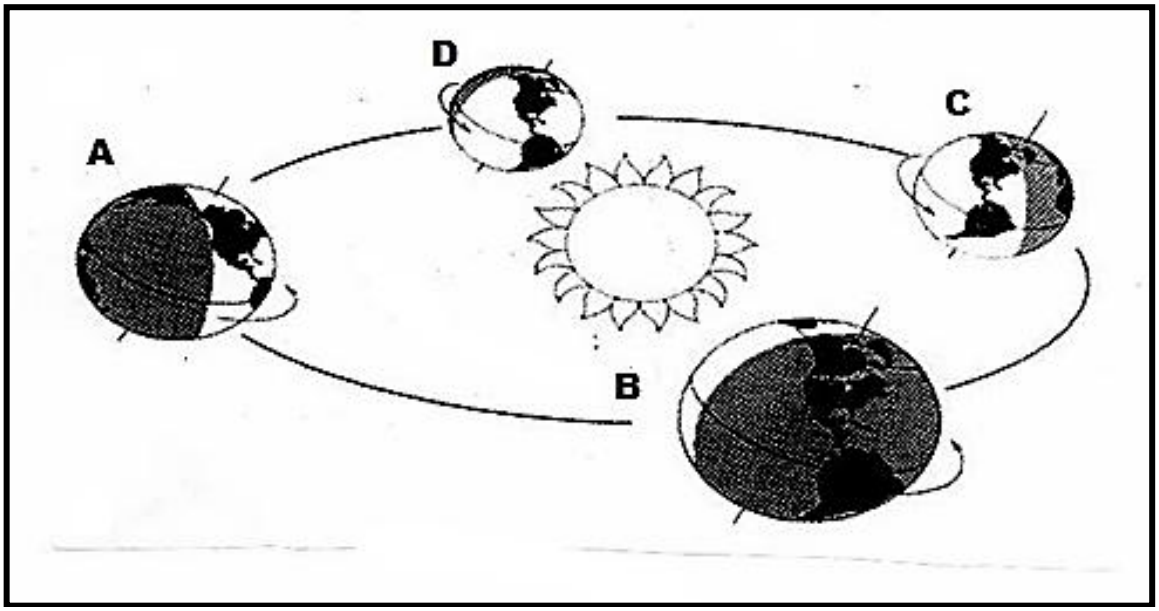

FIGURE 1.4

The Sahel Desert

In the Sahel Desert, desertification is becoming a huge problem. Around the 1950's people settled into the Sahel region, in areas where there was water. This resulted in overgrazing, which is one of the greatest causes of desertification. Eventually, the perennial shrubs were destroyed because of grazing, and they were replaced by annuals. Then the annuals were grazed out which left bare soil. A lot of the topsoil was washed away, and all that was left were rocks. Silt turned hard when it was hit by rain. Therefore, plants were not able to grow because their roots could not penetrate this hard layer. Now this region has turned to desert and it continues to expand. Records show that rainfall in the Sahel has decreased and sands have shifted about sixty miles south into the area. Sahel is expanding due to lack of vegetation in the area. Another reason desertification is happening in the Sahel region is because people are using the slashing and burning method to clear land. This degrades the quality of soil just like overgrazing.

[Source: (No name). *Desertification – a Threat to the Sahel. (2000)*]

FIGURE 1.5: TOPOGRAPHY ASSOCIATED WITH HORIZONTAL LAYERED ROCKS

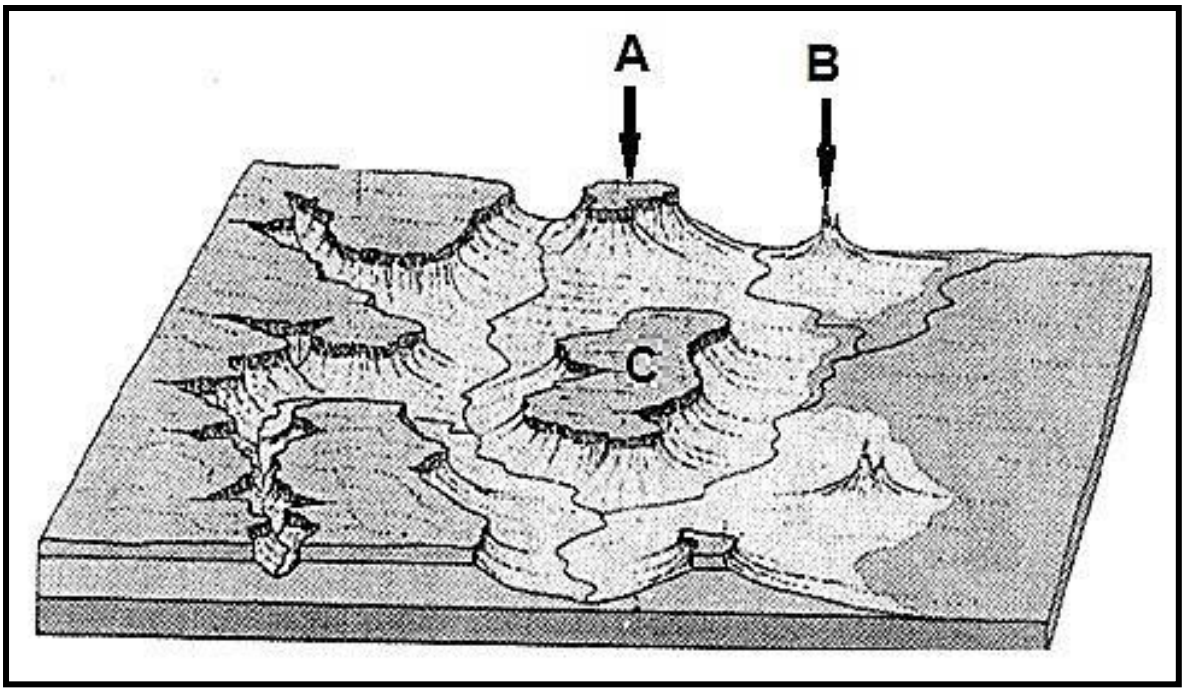

FIGURE 1.6

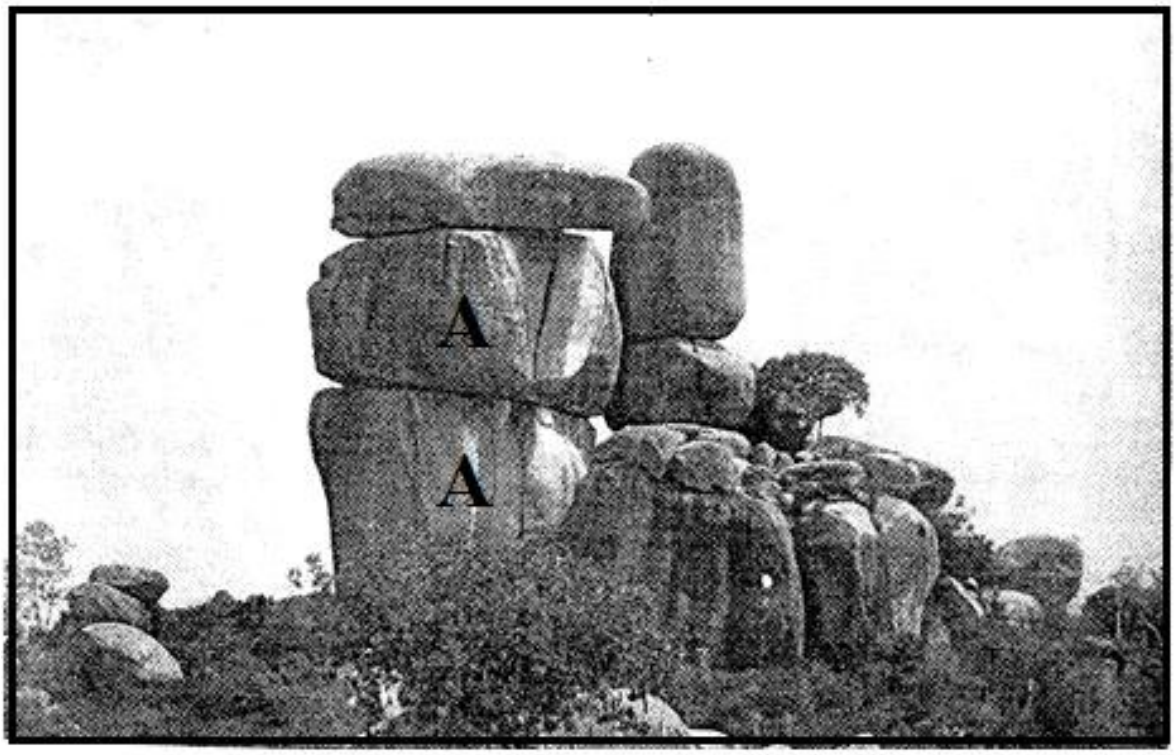

FIGURE 2.1: SYNOPTIC WEATHER MAP

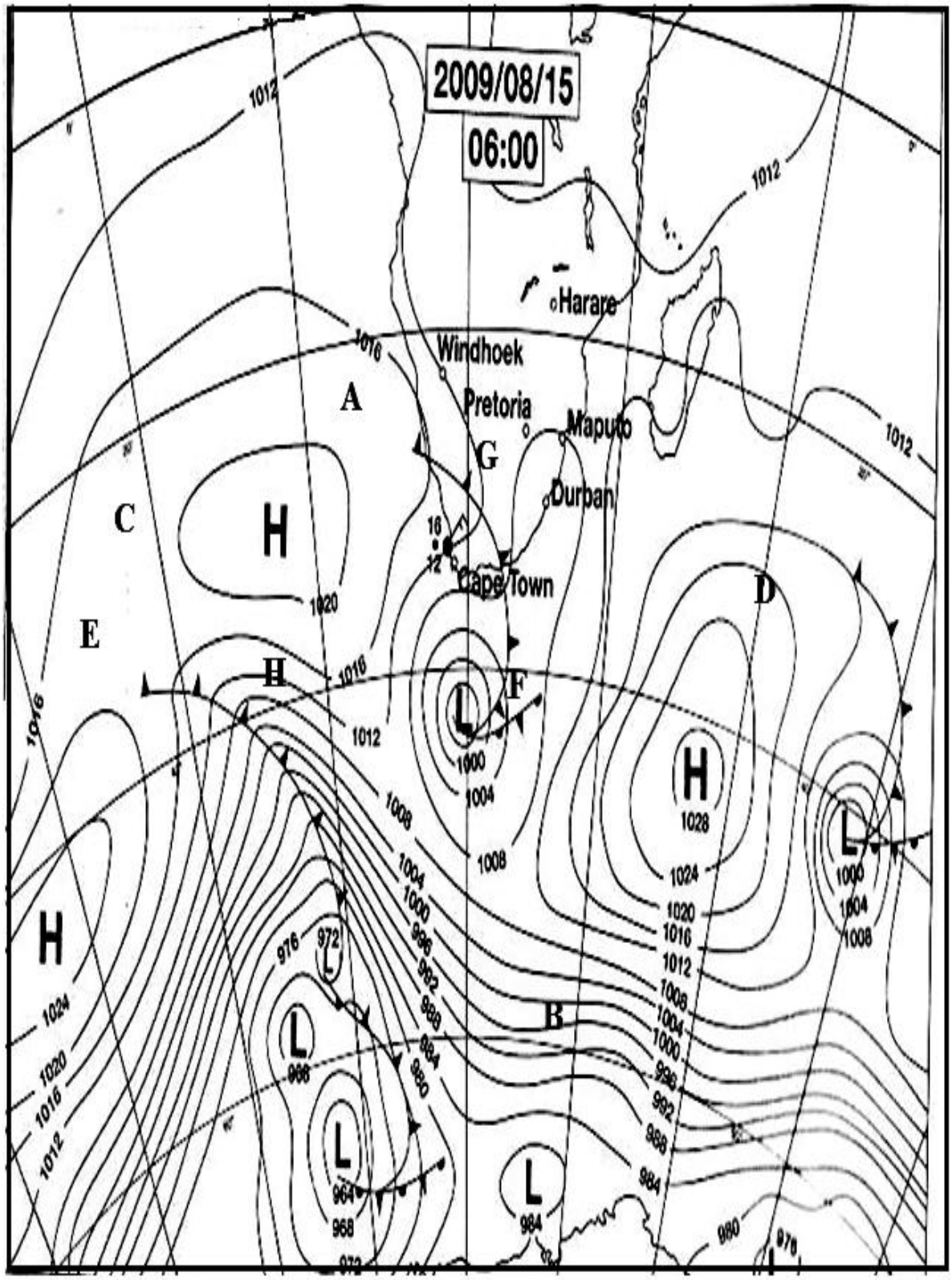

FIGURE 2.3

El Nino and La Nina: The boy child and his little sister

In Spanish, El Nino means 'The Christ child '.This is the name Peruvian fishermen gave to a warm current that sometimes arrived off the South American coast around Christmas time. The warm current was a tell-tale sign that fishing would be bad that season, because El Nino blocks the upwelling of nutrient rich water.

El Nino is responsible for drought in some parts of the world. Since 1525, there have been 113 El Nino's recorded. This is an average of about one El Nino in every four years. The catastrophic El Nino's are spaced roughly 15 years apart.

FIGURE 2.4: FORMATION OF A FÖHN WIND

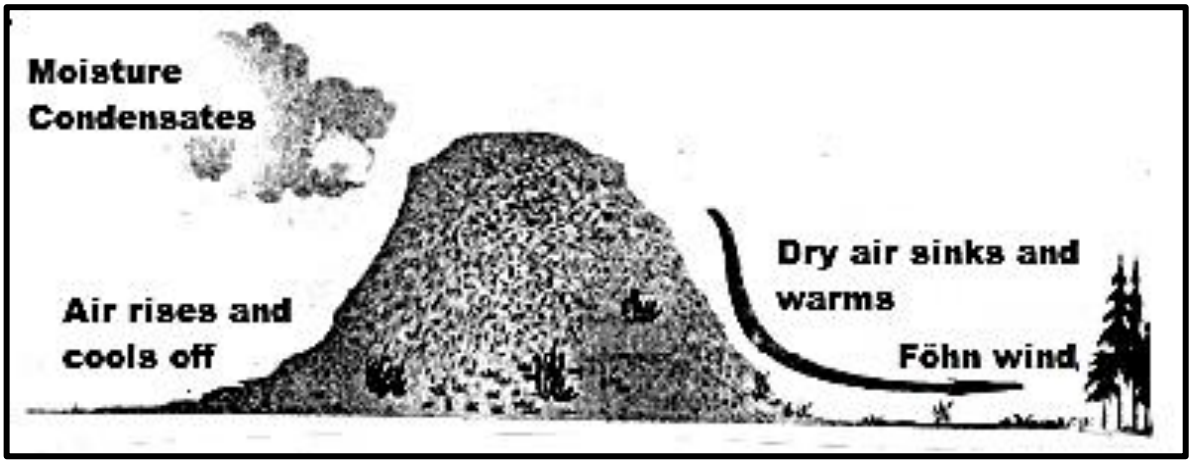

FIGURE 2.5: CUESTA

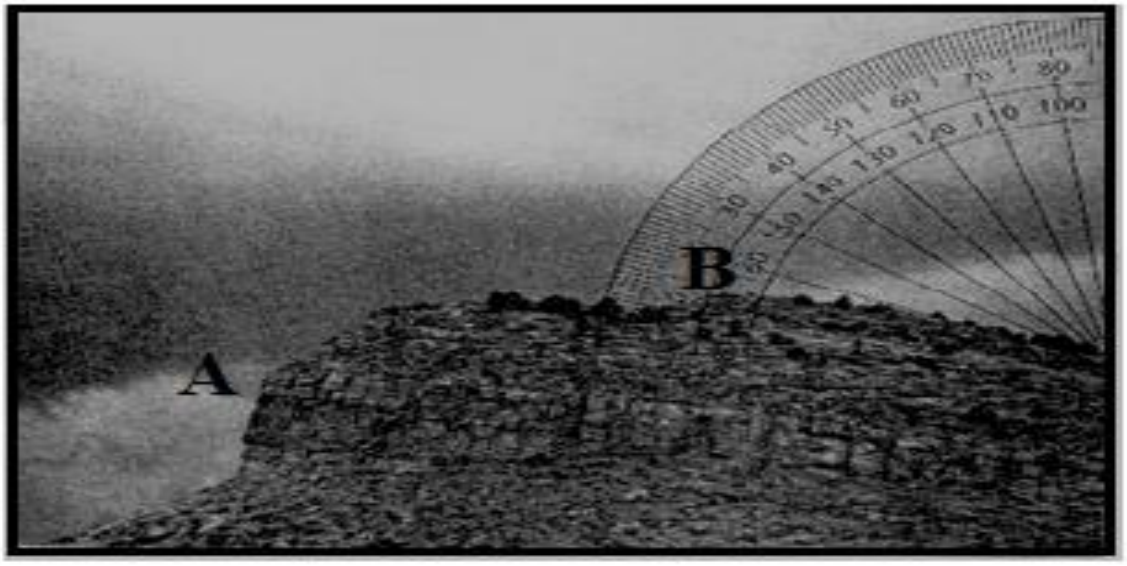

FIGURE 2.6: MASS MOVEMENT

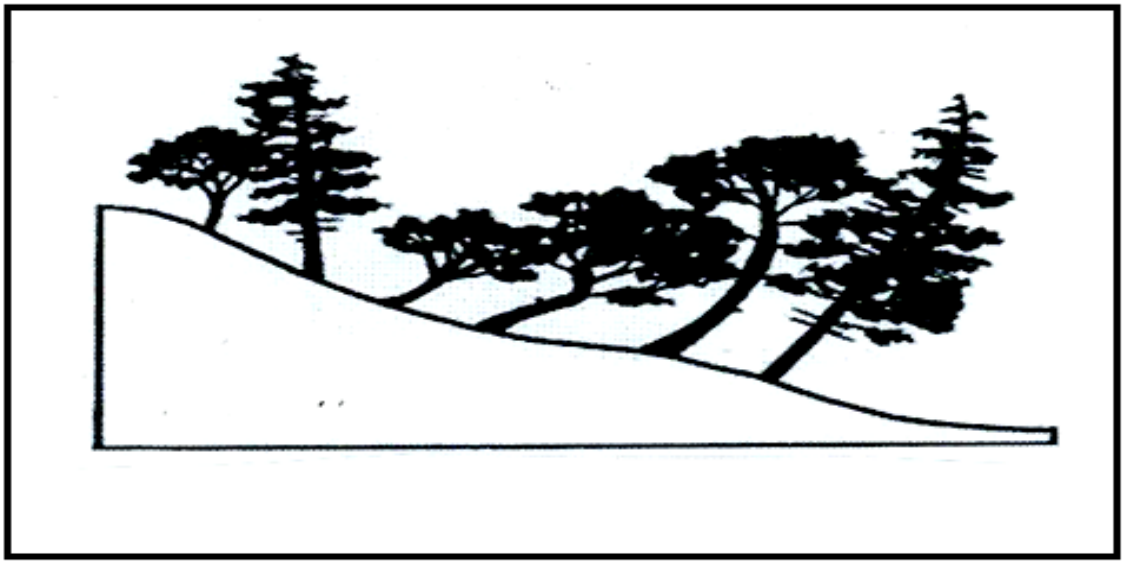

FIGURE 3.3: GROSS NATIONAL PRODUCT

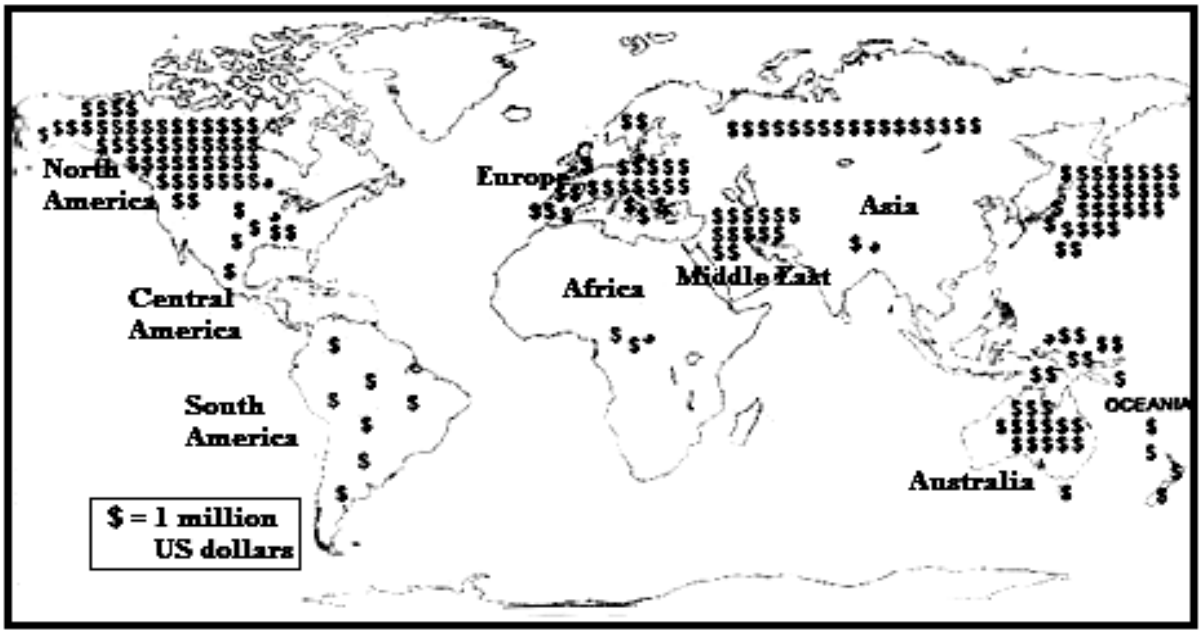

FIGURE 3.4: MODEL OF DEVELOPMENT

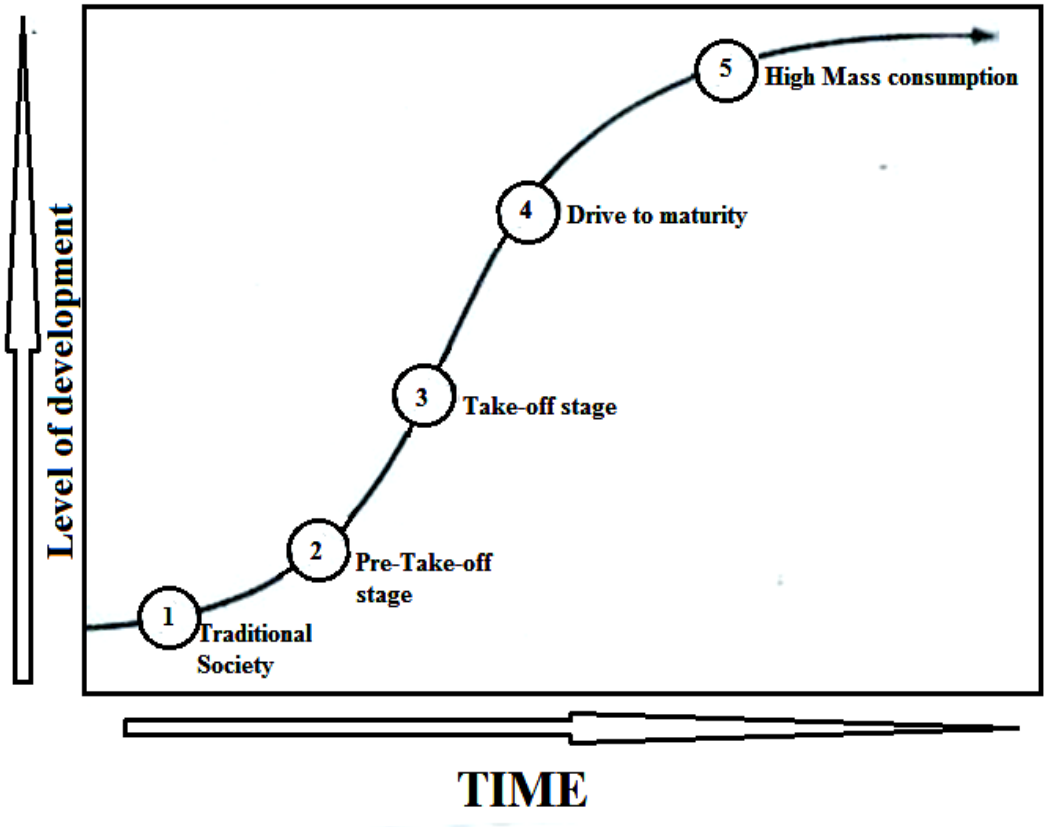

FIGURE 3.5: ACID RAIN

FIGURE 3.6: NEWSPAPER ARTICLE

Van Stadens wind turbines set for Eskom grid hook-up

SA to enter clean energy era

Clean green electricity will become a reality later this week when South Africa's first utility-scale, privately owned wind farm connects to the electricity grid.
All eyes will be on the nine Metro's and turbines at Van Stadens near Port Elizabeth as the developers test the R500 million state-of-the-art renewable energy equipment in the build-up to the official 27MW facility to the Eskom grid in just over two months' time.

Afri-Coast Engineers director Donald McGillivray – who has spent 10 years pioneering renewable wind energy in South Africa – said after a year of construction on the outskirts of Blue Horizon Bay, they were now counting the days until they started supplying much needed power to the Nelson Mandela Metro from February next year. "It is exciting to see everything coming together so quickly," he said.
Mcgillivray said the hot commissioning of the project – which will start one turbine at a time was critical to ensuring the success of the project.

Erected using the biggest crane on the African continent, the Van Stadens project has, however, not all been a breeze for the developers after a handful of local residents complained about the towering wind turbines on a hill above the seaside village.
The objections from a few wealthy landowners have come despite the development obtaining all environmental approvals and permits required and guaranteeing impoverished local township residents a substantial portion of the project equity and revenue over the next 20 years.

Several costly legal challenges have fallen flat. "The fourth-generation wind turbines are quieter than older wind turbines and all wind farms have to comply with strict environmental authorization requirements, which include noise emissions," said McGillivray. "The wind farms will improve both the quality and reliability of the electricity supply to Blue Horizon Bay and surrounding areas.

[Source: David MacGregor *(*Senior Reporter – *Daily Dispatch)*]

FIGURE 4.3: CASE STUDY – AGRINAS

AGRINAS is a community-based organization that works principally in rural farming communities in China, Bosnia, Morocco, Kazakhstan, Indonesia and Albania. AGRINAS is an acronym for Agricultural International Assistance. Its purpose is to assist at community level, with better agricultural practice that is appropriate and sustainable. In this way, communities can create surpluses and break out of their cycle of poverty, by initiating trade.

Almost 60% of the Chinese population is rural. Although the economic growth of China has been strong, this growth is almost completely confined to the urban areas. There is very little sign of progress that has happened in Chinese rural areas.

AGRINAS has facilitated farm industries in the rural communities of Yangqu county, Shanxi province. Farmers bring their products to a central point where people with skills have joined together into co-operatives to create factories to produce for example tomato paste, jam and juice. There is a cheese factory that requires up to 2 000 litres of milk each day. It not only provides jobs, but also teaches people new skills, such as commercial and management skills for farmers. Packaging and marketing centres create job opportunities and add value to the agricultural products made by the community. In this way, from grassroots beginnings economic and social development begins.

[Source: Adapted from the AGRINAS WEBSITE, "*Projects"*]

FIGURE 4.5: CASE STUDY – THE KOEBERG NUCLEAR POWER STATION

Cape Town's main energy supply was initially generated by the Athlone Power station. However because of a rapid increase in the population of Cape Town this energy supply became insufficient and uneconomical because large amounts of coal had to be transported from Mpumalanga to Cape Town.

The Koeberg Nuclear Power Station was built to generate energy to meet Cape Town's increased demand. It is currently the main energy supply of the Western Cape and nuclear energy can also be redistributed to the rest of South Africa during peak demand periods for electricity.

Koeberg Nuclear Power Station was originally located far outside the Cape Town area, but due to rapid growth over the past 20 years, suburban housing developments have moved closer and closer to the power station. The power station enforces strict housing regulations in case of evacuation due to nuclear radiation. For example no high rise buildings are allowed to be built in the vicinity. The power station is surrounded by an extensive nature reserve containing species of birds and small mammal species.

Koeberg Nuclear Power station uses two nuclear reactors to produce nuclear energy. The nuclear reactors are cooled by cold water from the Atlantic Ocean.

TOTAL: 225

Province of the
EASTERN CAPE
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 11

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GEOGRAPHY P1 MEMORANDUM

MARKS: **225**

This memorandum paper consists of 13 pages.

SECTION A: PHYSICAL GEOGRAPHY

QUESTION 1

1.1 1.1.1 Insolation ✓

1.1.2 Atmospheric pressure ✓

1.1.3 Climatic region ✓

1.1.4 Planetary winds ✓

1.1.5 Front ✓

1.1.6 Geostrophic flow ✓

1.1.7 Isotherm ✓ (7 x 1) (7)

1.2 1.2.1 E (Topography) ✓

1.2.2 G (Weathering) ✓

1.2.3 A (Canyon) ✓

1.2.4 H (Erosion) ✓

1.2.5 F (Back wasting) ✓

1.2.6 D (Homoclinal shifting) ✓

1.2.7 C (Exfoliation) ✓

1.2.8 B (Plateau) ✓ (8 x 1) (8)

1.3 1.3.1 Parallelism ✓✓ (1 x 2) (2)

1.3.2
A C ✓
B A ✓
C D ✓
D B ✓ (4 x 1) (4)

1.3.3 Places experience equal lengths of day and night. ✓ (1 x 1) (1)

1.3.4 22 June ✓ (1 x 1) (1)

1.3.5 The Northern Hemisphere would be experiencing its summer Solstice. (Sun's direct rays shine on the Tropic of Cancer) ✓✓
(1 x 2) (2)

1.4 1.4.1 Process whereby once fertile areas become increasingly arid. ✓✓
(Concept) (1 x 2) (2)

1.4.2 Overgrazing ✓
Burning of the land. ✓ (2 x 1) (2)

1.4.3
- Supply of water on the surface in rivers and lakes is less. ✓✓
- Water becomes polluted and reduces water supply even more. ✓✓
- Reduced groundwater levels increase evapo-transpiration. ✓✓
- Poorer soils, more saline (salt rich) soil leads to reduced vegetation cover and soil erosion from wind and water. ✓✓
- Damage to the natural habitats reduces the variety of plants and animals in an area. ✓✓
- As water levels in rivers and lakes decline, fish and wildlife die from lack of water. ✓✓
- Dry vegetation, high temperatures and low humidity increases the frequency and intensity of veld fires. ✓✓ (Any 3 x 2) (6)

1.4.4
- Proper soil management reduces the risk of severe soil erosion. ✓✓
- Afforestation programmes ✓✓
- Land management that recognises rainfall variability and finds other ways of making a living in drought conditions. ✓✓
- Correction of land ownership laws to encourage the sustainable management of resources. ✓✓
- Enlisting the support of local farmers. ✓✓
- Destroy alien plants. ✓✓

(Accept other relevant answers.) (Any 4 x 2) (8)

1.4.5
- Poverty ✓✓
- Political conflict ✓✓
- Traditional farming methods ✓✓ (Any 2 x 2) (4)

1.5 1.5.1
A Butte ✓
B Pointed Butte ✓
C Mesa ✓ (3 x 1) (3)

1.5.2 Mesas can be differentiated from buttes as their width is greater than their height OR the height of a butte is greater than its width. ✓✓ (1 x 2) (2)

1.5.3 POSITIVE

- In humid climates, the slopes of hills are suitable for farming. ✓✓
- Basaltic plateaus are great tourist attractions ✓✓
- Some plateaus (e.g. Deccan plateau in India) are suited for human settlement and agriculture. ✓✓
- Canyon landscapes have impressive scenery and are tourist attractions. ✓✓
- Canyon landscapes can be used for recreational purposes example hiking, abseiling etc. ✓✓
- Karoo landscapes are suitable for stock farming. ✓✓

(Any 2 x 2) (4)

NEGATIVE

- In arid climates, rugged, steep slopes have little agricultural value. ✓✓
- Some plateaus have little value for human settlement and farming. ✓✓
- Canyon landscapes is impossible for farming. ✓✓
- Settlements are impossible on canyon landscapes. ✓✓
- Difficult to develop infrastructure on canyon landscapes.

(Any 2 x 2) (4)

1.5.4 Scarp retreat or Backwasting ✓✓ (1 x 2) (2)

1.6 1.6.1 Core stones ✓ (1 x 2) (2)

1.6.2 Laccoliths or Batholiths ✓ (1 x 2) (2)

1.6.3 Granite ✓ (1 x 1) (1)

1.6.4
- Igneous material cools at different rates below the Earth's surface. ✓✓
- Cracks and joints develop. ✓✓
- Water seeps into vertical and horizontal joints of igneous rocks. ✓✓
- Chemical and takes place.
- The mass of igneous rocks is broken down into rectangular blocks of rock. ✓✓
- The joints are widened by mechanical weathering by means of the freezing and melting of water. ✓✓
- Weathered material removed by erosion processes. ✓✓
- Core stones remain behind. ✓✓

(Description is important.) (Any 4 x 2) (8)

[75]

QUESTION 2

2.1	2.1.1	D ✓		
	2.1.2	H ✓		
	2.1.3	F ✓		
	2.1.4	E ✓		
	2.1.5	G ✓		
	2.1.6	B ✓		
	2.1.7	C ✓		
	2.1.8	A ✓	(8 x 1)	(8)
2.2	2.2.1	Knickpoint ✓		
	2.2.2	Laccolith ✓		
	2.2.3	Poort ✓		
	2.2.4	Debris ✓		
	2.2.5	Great Karoo ✓		
	2.2.6	Slumps ✓		
	2.2.7	Scree ✓	(7 x 1)	(7)
2.3	2.3.1	El Nino occurs when there is a disruption in the ocean atmosphere systems in the Southern Pacific Ocean area. ✓✓	(1 x 2)	(2)
	2.3.2	Summer ✓✓	(1 x 1)	(1)

2.3.3 El Nino causes hotter, drier summers than usual; sometimes droughts. ✓✓

La Nina causes milder and wetter summers than usual; sometimes floods. ✓✓ (2 x 2) (4)

2.3.4
- In La Nina years, the tropical easterly winds are stronger than normal. ✓✓
- Upwelling of cold water is increased, which causes water on the eastern side of the Pacific Ocean to be very cold. ✓✓
- There is heavy rain on the eastern side of Australia, Southeast Asia and over the west Pacific Ocean. ✓✓
- Drier than normal conditions exist over the west coast of South America. ✓✓ (4 x 2) (8)

2.4 2.4.1 A warm, dry wind that descends the leeward side of a mountain ✓✓ (Concept) (1 x 2) (2)

2.4.2 Berg wind ✓ (1 x 1) (1)

2.4.3
- Moist air moves up the windward side of the mountain ✓✓
- The air will expand and cool. ✓✓
- Any moisture that the air holds will precipitate out on the windward side of the mountain. ✓✓ (3 x 2) (6)

2.4.4
- Droughts ✓
- Fire ✓
- Avalanches ✓
- Floods ✓ (Any 3 x 1) (3)

2.4.5 Cool dry air will descend on the leeward side and will heat by 1 °C/ 100 m. ✓✓
Air cools off by 1 °C/100 m on the windward side as it rises. ✓✓ (2 x 2) (4)

2.5 2.5.1 Sedimentary ✓ (1 x 1) (1)

2.5.2 A Scarp slope ✓
B Dip slope ✓ (2 x 1) (2)

2.5.3
- A scarp slope is generally steeper and is eroded through sheet wash and mass wasting. ✓✓
- A dip slope is more gentle and less erosion takes place because the rock is more resistant. ✓✓ (2 x 2) (4)

2.5.4
- Cuesta has a steep scarp slope and a more gentle dip slope or an angle < 45°.
- Hogsbacks have steep dip and scarp slopes (angle between 25° and 45°). ✓ (2 x 1) (2)

2.5.5
- Cuesta Dome ✓
- Cuesta Basin ✓ (2 x 1) (2)

2.5.6
- Dip slope is used for farming. ✓✓
- Cuesta basins yield artesian water. ✓✓
- Cuesta domes may also contain oil and natural gas. ✓✓

(Any 2 x 2) (4)

2.6 2.6.1 Soil creep ✓ (1 x 1) (1)

2.6.2 Dry soil / Fine soil ✓ (1 x 1) (1)

2.6.3
- It is the slowest of all mass movements. ✓✓
- Associated with soil that dries after freezing and thawing of ice. ✓✓ (Any 1 x 2) (2)

2.6.4 It will cause significant displacement downslope. ✓✓ (1 x 2) (2)

2.6.5
- The removal of minerals in mining activities. ✓✓
- The building of houses on slopes that are too deep. ✓✓
- The building of hotels on the edges of cliffs for sea views. ✓✓
- The activity of blasting for the removal of earth materials. ✓✓
- Deforestation that loosens soil and creates earth movements. ✓✓
- Road construction and quarrying at the foot of the slope. ✓✓

(Any 4 x 2) (8)

QUESTION 3: DEVELOPMENT GEOGRAPHY AND RESOURCES AND SUSTAINABILITY

3.1	3.1.1	MEDC ✓		
	3.1.2	LEDC ✓		
	3.1.3	MEDC ✓		
	3.1.4	LEDC ✓		
	3.1.5	MEDC ✓		
	3.1.6	MEDC ✓		
	3.1.7	MEDC ✓		
	3.1.8	LEDC ✓	(8 x 1)	(8)
3.2	3.2.1	Thermal energy ✓		
	3.2.2	Extraction ✓		
	3.2.3	Conventional ✓		
	3.2.4	Non-Conventional ✓		
	3.2.5	Biogas energy ✓		
	3.2.6	Biomass energy ✓		
	3.2.7	Fracking ✓	(7 x 1)	(7)
3.3	3.3.1	It is the value of all goods and services produced by a country in any year, with the addition of the value of goods and services made outside the country by citizens. ✓✓ The difference lies in the fact that Gross National Product includes earnings from foreign investments ✓✓	(Concept) (1 x 2)	(2)
	3.3.2	• Human Development Index (HDI) ✓✓ • Gini co-efficient ✓✓ • Trade balance ✓✓ • Employment ✓✓ • GDP/Capital ✓✓	(Any 2 x 2)	(4)
	3.3.3	Africa ✓✓	(1 x 2)	(2)

3.3.4 Wealthy countries are in the North and the poorer countries are in the South. ✓✓ (1 x 2) (2)

3.3.5
- Economic indicator statistics are generalised for the whole continent. ✓✓
- In the rich countries there are poor people and in the poor countries there are rich people. ✓✓ (2 x 2) (4)

3.4 3.4.1 Rostow's Development Model ✓✓ (1 x 2) (2)

3.4.2 5 – Mass consumption stage ✓✓ (1 x 2) (2)

3.4.3
- Industrialisation ✓✓
- Urbanisation ✓✓
- Economy matures ✓✓
- Economic growth spreads✓✓ (Any 2 x 2) (4)

3.4.4
- This model was based on West European countries only and not applicable to African and Asian countries. ✓✓
- It did not foresee that population growth rates can exceed that of economic growth. ✓✓
- It failed to foresee the expansion of deserts and the climate changes that have eroded the agricultural capacity of many sub-Saharan countries. ✓✓
- Asia, Middle East and Africa have a very different set of cultural, climatic, geographic and socio economic circumstances to the UK and USA. ✓✓
- The development of First World countries was dependent on the exploitation of the resources of Third World countries. ✓✓
- Third World countries were deprived of social, economic and political power to develop along a similar growth line. ✓✓

(Any 4 x 2) (8)

3.5 3.5.1 Air pollution ✓ (1 x 1) (1)

3.5.2 Sulphur dioxide ✓✓ (1 x 2) (2)

3.5.3
- Acid rain can corrode metal. ✓✓
- Fish can die when in contact with acid rain. ✓✓
- Destroys ecosystems. ✓✓
- Causes trees to die. ✓✓
- Soil becomes infertile. ✓✓ (Any 2 x 2) (4)

3.5.4
- Increases lung and heart disorders. ✓✓
- Linked to Alzheimer's disease. ✓✓
- Skin disease. (Any 1 x 2) (2)

3.5.5
- Decrease our reliance on fossil fuels. ✓✓
- Use alternative energy sources. ✓✓
- Reduce emissions from car exhausts / use of unleaded petrol. ✓✓
- Use of public transport. ✓✓
- Afforestation ✓✓
- International co-operation as acidic gases released by one country can result in acid rain in another country. ✓✓

(Any 2 x 2) (4)

3.6 3.6.1 It is the energy of wind which is changed into electrical energy, via wind turbines or windmills. ✓✓ (Concept) (1 x 2) (2)

3.6.2 Non-conventional energy ✓ (1 x 1) (1)

3.6.3 The use of energy sources that do not emit greenhouse gases. ✓✓ (1 x 2) (2)

3.6.4
- They spoil the beauty of the open countryside. ✓✓
- The noise caused by the turbines could disturb people. ✓✓
- The blades on turbines can destroy animals like birds and bats, and impact on ecosystems. ✓✓ (Any 2 x 2) (4)

3.6.5
- People are concerned about the effects of climate change. ✓✓
- Oil prices have increased. ✓✓
- Governments are giving financial support to research into efficient use of non-conventional energy. ✓✓
- Scientists are making progress in finding ways to use non-conventional energy sources more efficiently. ✓✓
- The threat posed by global warming. ✓✓
- Stricter implementation of the Kyoto Protocol and other agreements. ✓✓ (Any 4 x 2) (8)

[75]

QUESTION 4

4.1 4.1.1 Capitalism ✓

4.1.2 Modernisation ✓

4.1.3 Tertiary activities ✓

4.1.4 Life expectancy ✓

4.1.5 Infant mortality ✓

4.1.6 Industrialised ✓

4.1.7 Primary activities ✓ (7 x 1) (7)

4.2 4.2.1 E Hydro power ✓

4.2.2 F Carbon footprint ✓

4.2.3 G Global warming ✓

4.2.4 B Geothermal energy ✓

4.2.5 C Land degradation ✓

4.2.6 D Despoliation ✓

4.2.7 A Solar energy ✓

4.2.8 H Sustainable energy ✓ (8 x 1) (8)

4.3 4.3.1 Community-based development is about changes made at grassroots level by the people whose lives will be affected, rather than development being imposed by outsiders or from government on people. ✓✓ (Concept) (1 x 2) (2)

4.3.2
- Farmers bring fruits to a central point. ✓✓
- People make tomato paste, jam, juice and cheese in factories. ✓✓
- Packaging and marketing centres operate. ✓✓ (Any 2 x 2) (4)

4.3.3
- Agricultural skills ✓
- Technical skills ✓
- Marketing skills ✓
- Management skills ✓ (Any 3 x 1) (3)

4.3.4 ADVANTAGE

- Many people are better than few in accomplishing tasks. ✓✓ (1 x 2) (2)

DISADVANTAGE

- Individualism is stifled OR competitive advantages are lost. ✓✓ (1 x 2) (2)

4.4 4.4.1 Private business initiate development projects which range from local to national. ✓✓ (1 x 2) (2)

4.4.2 The withdrawal of the state from providing the main services that are required for development such as education, health care and income security. ✓✓(Concept) (1 x 2) (2)

4.4.3 South Africa does not impose restrictions on trade relations with certain countries. ✓✓ (1 x 2) (2)

4.4.4 Yes ✓

- The government allows the buying and selling of goods without restrictions like taxes or tariffs on goods and services. ✓✓

OR

No ✓

South Africa operates in a global market and restrictions on certain commodities will allow other countries to enforce their own restrictions on South Africa. ✓✓
(**NOTE**: Yes or No, with the relevant response is acceptable)
(1 + 2) (3)

4.4.5 Challenges to include but not limited to:

- Levels of poverty. ✓✓
- Weak systems of education. ✓✓
- Weak systems of health and transport. ✓✓
- High levels of raw material exports. ✓✓
- Importing of manufactured goods. ✓✓
- High level of debt from financial aid. ✓✓ (Any 4 x 2) (8)

4.5 4.5.1 Uranium ✓ (1 x 1) (1)

4.5.2 To meet the requirements of the increasing energy needs in the Western Cape. ✓✓ (1 x 2) (2)

4.5.3 Radioactive waste ✓ (1 x 1) (1)

4.5.4
- Located outside Cape Town. ✓✓
- No high rise buildings are allowed to be built in the vicinity. ✓✓
- The power station is surrounded by an extensive nature reserve. ✓✓
- Nuclear reactors are cooled by water from the Atlantic Ocean. ✓✓ (Any 2 x 2) (4)

4.5.5
- Nuclear power stations can produce energy if coal and oil become exhausted. ✓✓
- It is a sustainable source of energy, as it uses small amounts of uranium. ✓✓
- Less greenhouse gases released from nuclear power stations. ✓✓
- The production of nuclear energy is not affected by changing weather conditions. ✓✓
- The running costs of a nuclear power station is low. ✓✓
- New generation nuclear power stations are cheaper, safer and more reliable. ✓✓
- Waste products from a nuclear power station can be stored underground. ✓✓ (Any 4 x 2) (8)

4.6 4.6.1 Machines and processes that cause less pollution and use fewer non-renewable resources. ✓✓ (Concept) (1 x 2) (2)

4.6.2
- Changing the fuel mix. ✓✓
- Using available energy more efficiently. ✓✓ (2 x 2) (4)

4.6.3 <u>ENVIRONMENTAL</u>

- Reducing carbon dioxide emissions and local air pollution. ✓✓
- Improving the level of environmental health. ✓✓
- Creating a more aesthetically pleasing environment. ✓✓

(Any 2 x 2) (4)

<u>ECONOMIC</u>

- Lowering the cost of energy. ✓✓
- Changing human behaviour on consumption levels and pricing. ✓✓
- Promoting energy efficient appliances. ✓✓ (Any 2 x 2) (4)

TOTAL: 225