Province of the
EASTERN CAPE
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 11

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GEOGRAPHY P1

MARKS: **225**

TIME: **3 hours**

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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
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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)

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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)

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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)

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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