



Province of the
EASTERN CAPE
EDUCATION

**NATIONAL
SENIOR CERTIFICATE**

GRADE 11

NOVEMBER 2015

GEOGRAPHY P1

MARKS: 225

TIME: 3 hours



This question paper consists of 13 pages.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of FOUR questions.
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 questions 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.

SECTION A: THE ATMOSPHERE AND GEOMORPHOLOGY**QUESTION 1**

- 1.1 Select from the list below a suitable term that matches the definition provided in 1.1.1–1.1.8. Write only the question number (1.1.1–1.1.8) and then the term of your choice:

Jet stream; Cyclonic; Orographic; Intertropical Convergence Zone; Continental climate; Maritime climate; Solstice; Equinox; Desertification; Degraded; Föhn; Monsoon

- 1.1.1 The time at which the sun is directly above a tropic line
- 1.1.2 A high speed wind in the tropopause
- 1.1.3 A wind warmed by adiabatic descent
- 1.1.4 A wind that reverses direction in summer and winter
- 1.1.5 Land that is no longer as productive as it was previously
- 1.1.6 Type of climate experienced by coastal places
- 1.1.7 Type of rain that occurs when air cools as it rises up a mountain
- 1.1.8 A front where tropical air masses north and south of the equator meet and converge (8 x 1) (8)
- 1.2 Match the terms/concepts in COLUMN B with the descriptions in COLUMN A. Write only the letter (A–I) of your choice next to the question number (1.2.1–1.2.8) for example 1.2.8 J.

	COLUMN A		COLUMN B
1.2.1	Stepped slope that forms when more than one sill is exposed on the side of a hill	A	Tectonic uplift
1.2.2	Joint between layers of sedimentary rock	B	Sheetwash
1.2.3	Steep slope which joins low-lying land with high lying land	C	Canyon
1.2.4	Surface erosion caused by thin film of water run off during heavy rain	D	Structural terrace
1.2.5	A flattened, featureless surface	E	Anticlines
1.2.6	A steep and rugged landscape	F	Pediplain
1.2.7	Rising of land mass due to crustal forces	G	Bedding plane
		H	Peneplain
		I	Escarpment

(7 x 1) (7)

- 1.3 Refer to FIGURE 1.3 showing the world's pressure belts and wind patterns at the earth's surface.
- 1.3.1 Provide a suitable term that describes major winds which blow all year round over large areas of the earth's surface. (1 x 1) (1)
- 1.3.2 FIGURE 1.3 depicts winds deflecting to the left in the southern hemisphere and to the right in the northern hemisphere. Name the force that causes this deflection. (1 x 1) (1)
- 1.3.3 Briefly describe any THREE characteristics of the force you mentioned in QUESTION 1.3.2. (3 x 1) (3)
- 1.3.4 Explain why the equator is an area of converging air. (2 x 1) (2)
- 1.3.5 Patterns of ascent and descent, of convergence and divergence, help us describe a more accurate model of air circulation. Justify this description by explaining in a paragraph of 8 lines how the tri-cellular model explains these patterns. (4 x 2) (8)
- 1.4 Refer to the synoptic weather map in FIGURE 1.4 and answer the questions that follow.
- 1.4.1 Identify the following:
- (a) Pressure cells at A and B (2 x 1) (2)
- (b) Front at C (1 x 1) (1)
- 1.4.2 Calculate the isobaric interval on the map. (1 x 1) (1)
- 1.4.3 What evidence suggests that the wind speed in Cape Town is greater than the wind speed in Port Elizabeth? (1 x 2) (2)
- 1.4.4 Find Gough Island and Marion Island on the map. At which of these two islands is the wind almost geostrophic? (1 x 1) (1)
- 1.4.5 Explain the reason for your answer in QUESTION 1.4.4. (1 x 2) (2)
- 1.4.6 Describe any FOUR weather conditions recorded at the weather station at Durban. (4 x 1) (4)
- 1.5 FIGURE 1.5 illustrates a classification of mass movements according to water content and velocity.
- 1.5.1 Define the term *mass movement*. (1 x 1) (1)
- 1.5.2 Give the water content and range of velocities that are associated with:
- (a) Mudflow (2 x 1) (2)
- (b) Rockfalls (2 x 1) (2)

- 1.5.3 Explain how different soils influence the degree and speed of mass movement. (2 x 2) (4)
- 1.5.4 Evaluate the impact that mass movement has on the environment. (3 x 2) (6)
- 1.6 FIGURE 1.6 illustrates a characteristic Karoo landscape found in areas with horizontal strata:
- 1.6.1 Identify the flat-topped hill at A. (1 x 1) (1)
- 1.6.2 Describe the cap rock on top of this flat-topped hill mentioned in QUESTION 1.6.1 (1 x 2) (2)
- 1.6.3 State how C can be differentiated from A and B. (1 x 2) (2)
- 1.6.4 Draw a simple freehand sketch through these flat-topped hills to illustrate the FOUR slope elements/forms. (4 x 1) (4)
- 1.6.5 Scarp retreat/scarp recession also known as back wasting played an important role in the development of these flat-topped hills. In a paragraph of approximately EIGHT lines explain the process of scarp retreat. (4 x 2) (8)
- [75]**

QUESTION 2

2.1 Various options are given as possible answers to the following questions. Choose the answer and write only the letter (A–D) next to the question number (2.1.1–2.1.8).

2.1.1 Slope failure refers to the ...

- A movement of sediments.
- B influence of gravity on sediments.
- C influence of gravity on a slope.
- D failure of the internal structure of soil.

2.1.2 Sedimentary rocks ...

- A form in horizontal layers.
- B are made mainly of dolerite.
- C are resistant to erosion.
- D forms when magma cools.

2.1.3 Topography refers to ...

- A horizontally layered rocks.
- B structure of rocks.
- C mountains, sea and depressions.
- D shape of the land.

2.1.4 Canyon landscapes are ...

- A important tourist attractions.
- B suitable for farming.
- C perfect for human settlements.
- D difficult for human settlements but ideal to develop infrastructure.

2.1.5 Tors ...

- A are usually convex in shape, steep low down and gentle higher up.
- B are sedimentary rocks which are made up of layers which erode.
- C develop in well-jointed igneous rock.
- D have serrated edges and portals.

2.1.6 Hilly landscapes and basaltic plateaus develop in areas where the rock strata are ...

- A horizontal and uniformly resistant to erosion.
- B horizontal and not uniformly resistant to erosion.
- C stratified and not uniformly resistant to erosion.
- D metamorphic and uniformly resistant to erosion.

- 2.1.7 Forces operating above the earth's surface, for example erosion and deposition are known as ...
- A contracting forces.
 - B exogenic forces.
 - C undercutting forces.
 - D endogenic forces.
- 2.1.8 River gorges and sea cliffs are examples of ...
- A primary slopes.
 - B secondary erosion.
 - C deposition slopes.
 - D primary erosion slopes. (8 x 1) (8)
- 2.2 Refer to FIGURE 2.2 showing the relationship between air pressure and wind. Choose ONE term in brackets to make each of the following statements true.
- 2.2.1 We measure air pressure in (hectopascals/degrees).
- 2.2.2 Lines joining places of equal pressure are known as (isotherms/isobars).
- 2.2.3 The difference in pressure between two places is known as the (pressure gradient force/pressure force).
- 2.2.4 Winds always blow from a (2.2.4(a) low/high) pressure to a (2.2.4(b) high/low) pressure.
- 2.2.5 The isobaric interval on in the sketch is (four/eight) hectopascals.
- 2.2.6 Air that subsides on the surface of the earth creates a high pressure, and so (convergence/divergence) takes place. (7 x 1) (7)
- 2.3 FIGURE 2.3 illustrates the position of the sun across the sky at two different places in the southern hemisphere.
- 2.3.1 Define the term *insolation*. (1 x 1) (1)
- 2.3.2 The amount of insolation is dependent on latitude and the seasons. List which ONE of the factors is illustrated in FIGURE 2.3. (1 x 1) (1)
- 2.3.3 State the factor in FIGURE 2.3 that determines the amount of insolation that the surface of the earth receives. (1 x 1) (1)
- 2.3.4 Name the heat zone of the earth that would be represented by X. (1 x 1) (1)
- 2.3.5 In FIGURE 2.3B the sun is not directly overhead and strikes the earth at an angle that is smaller than 90°. Explain how this will result in less radiation at point Y. (2 x 2) (4)

- 2.4 Study FIGURE 2.4 which depicts the frequency of droughts occurring in Southern African countries, measured over 50 years.
- 2.4.1 Interpret from the map the least spatial frequency of droughts on the eastern side of the map. (1 x 1) (1)
- 2.4.2 According to the map which country has the highest frequency of droughts within 50 years? (1 x 1) (1)
- 2.4.3 How can droughts be triggered by human activities? (2 x 2) (4)
- 2.4.4 State the relationship between drought and global warming. (1 x 2) (2)
- 2.4.5 Explain how it is possible that countries with low annual average rainfall have fewer droughts compared to countries with better average rainfall. (2 x 2) (4)
- 2.4.6 In a paragraph of approximately 8 lines outline the negative impact that drought has on the people of Southern Africa. (4 x 2) (8)
- 2.5 FIGURE 2.5 illustrates asymmetrical ridges (topography associated with inclined rocks). Study the FIGURE and answer the questions.
- 2.5.1 Classify asymmetrical ridges A, B and C according to the angle of their dip slope. (3 x 1) (3)
- 2.5.2 Name the type of rock associated with inclined rock strata. (1 x 1) (1)
- 2.5.3 Describe how this type of rock (answer in QUESTION 2.5.2) forms asymmetrical ridges. (2 x 2) (4)
- 2.5.4 Describe TWO characteristics of asymmetrical ridge A. (2 x 2) (4)
- 2.5.5 The THREE asymmetrical ridges illustrated in FIGURE 2.5 show potential for human activities. Explain in a paragraph format (approximately 8 lines) how these asymmetrical ridges can be utilised by humans. (4 x 2) (8)
- 2.6 Study FIGURE 2.6 which depicts the various igneous intrusion forms to answer the following questions.
- 2.6.1 Differentiate between intrusive and extrusive igneous rocks. (2 x 1) (2)
- 2.6.2 Identify the igneous intrusive features labelled A, B and C. (3 x 1) (3)
- 2.6.3 Name ONE landform that may develop from features A and D each when they are exposed to the earth's surface. (2 x 1) (2)
- 2.6.4 Explain how a *lopolith* is formed. (2 x 2) (4)
- 2.6.5 Name ONE South African example of a *lopolith*. (1 x 1) (1)

[75]

SECTION B: DEVELOPMENT GEOGRAPHY AND RESOURCES AND SUSTAINABILITY**QUESTION 3**

3.1 Read the statements below and determine if the statement refers to:

- MDC** Most developed countries
LDC Least developed countries
NIC Newly industrialised countries

Write the numbers 3.1.1–3.1.8 and write either **MDC**, **LDC** or **NIC** next to the question number. For example 3.1.9 **MDC**

- 3.1.1 Fast growing economies
- 3.1.2 High levels of poverty, weak economies
- 3.1.3 Growing economies, large informal sector
- 3.1.4 Access to services is excellent
- 3.1.5 These countries, according to the Brandt report, are mostly in the north
- 3.1.6 Colonialism had a major negative impact on these countries
- 3.1.7 Strong economies, high levels of employment
- 3.1.8 These countries favour export-led development (8 x 1) (8)

3.2 Choose ONE term in brackets to make each of the following statements TRUE.

- 3.2.1 Wind power is (reliable/unreliable) throughout the year.
- 3.2.2 The (Kyoto protocol/COP17) signed in 2002 required countries to reduce greenhouse gas emissions.
- 3.2.3 To keep areas of the earth in their present condition untouched by humans is known as (conservation/preservation).
- 3.2.4 The organic material in soil is known as (topsoil/humus).
- 3.2.5 (Deforestation/Afforestation) is tree planting on land that was previously wooded but has been cleared.
- 3.2.6 Hydro electricity is a (renewable/non-renewable) source of energy.
- 3.2.7 The power utility (Eskom/Koeberg) produces 95% of South Africa's electrical energy. (7 x 1) (7)

- 3.3 Refer to the pie graph in FIGURE 3.3 showing you how a rural African woman traditionally spends her time.
- 3.3.1 State what you understand by *gender roles*. (1 x 1) (1)
- 3.3.2 Calculate what percentage of a rural African woman's day is given to rest according to the pie graph. (1 x 1) (1)
- 3.3.3 According to the pie-chart, women in Africa are subjected to specific gender roles. Provide possible reasons why it is especially on the African continent the case. (2 x 2) (4)
- 3.3.4 In a paragraph format (approximately 8 lines) suggest some ways in which governments on the African continent can improve economic participation by women and improve their standard of living. (4 x 2) (8)
- 3.4 Read through the case study in FIGURE 3.4 on the South African textile industry.
- 3.4.1 Define the term *globalisation*. (1 x 1) (2)
- 3.4.2 List any TWO positive impacts of *globalisation*. (2 x 2) (4)
- 3.4.3 Provide reasons why the South African textile industry has had to close down so many factories and businesses. (2 x 2) (4)
- 3.4.4 Evaluate why China's clothing exports has increased. (2 x 2) (4)
- 3.5 Read through the newspaper article *Solar power changes villagers lives* in FIGURE 3.5 and answer the following questions.
- 3.5.1 State what you understand by *alternative energy*. (1 x 1) (1)
- 3.5.2 Suggest a possible reason why 'Eskom had no immediate plans to electrify the village'. (1 x 2) (2)
- 3.5.3 Identify the device that will be used for converting solar power into energy in the village. (1 x 1) (1)
- 3.5.4 Explain how electricity will help eradicate poverty for the villagers. (2 x 2) (4)
- 3.5.5 In a paragraph of approximately 8 lines explain the benefits that solar energy has for the world. (4 x 2) (8)

- 3.6 Refer to FIGURE 3.6 showing a simple soil profile and answer the questions that follow.
- 3.6.1 Match the horizons labelled 1, 2, 3, 4 and 5 with the following alternatives.
R-horizon; A-horizon; B-horizon; O-horizon; C-horizon (5 x 1) (5)
- 3.6.2 Soil erosion is the loss of soil from the ground by water and wind. Deduce how deforestation contributed to soil erosion. (1 x 2) (2)
- 3.6.3 Analyse how rainfall contributes to the process of leaching. (3 x 2) (6)
- 3.6.4 Justify how 'fallowing' can be used as an effective management strategy to prevent and control soil erosion. (2 x 2) (4)
- [75]**

QUESTION 4

- 4.1 Indicate whether each of the following statements are related to Renewable or Non-renewable energy sources:
- 4.1.1 Wind turbines that generate energy with wind
- 4.1.2 Special equipment, such as photovoltaic panels are used to capture energy
- 4.1.3 Coal seams are often removed by open-pit or strip mining
- 4.1.4 Gas is a fossil fuel formed from plant matter
- 4.1.5 Eskom operates a number of hydro-electric power stations
- 4.1.6 Paper mills use millions of tons of sawdust and scrap wood to generate electricity
- 4.1.7 Ethanol as a biofuel is made from food crops
- 4.1.8 Geothermal energy is energy gathered from the hot rocks below the earth's surface (8 x 1) (8)
- 4.2 Select from the list below a suitable term that matches the definition provided in QUESTION 4.1.1–4.1.7. Write only the number and correct answer.

Protectionism; Trade bloc; Terms of trade; Liberalisation of trade; Capitalism; Balance of trade; Balance of payments; Tariff; Economic development

- 4.2.1 The relationship between the prices a country sells its exports for and the prices it pays for its imports
- 4.2.2 The relationship between the value of a country's exports and its imports

- 4.2.3 A financial summary of all the payments made by a country to the rest of the world
- 4.2.4 A group of countries that have agreed to trade with one another
- 4.2.5 Tax collected by government on goods coming into a country
- 4.2.6 A control that restricts, restrains or supports trade to look after the interests of a country
- 4.2.7 Allowing more freedom of trade (7 x 1) (7)
- 4.3 FIGURE 4.3 is a cartoon depicting development and challenges in Africa.
- 4.3.1 List any TWO challenges depicted in the cartoon affecting Africa. (2 x 1) (2)
- 4.3.2 Interpret how the cartoonist illustrates these challenges affecting Africa. (1 x 2) (2)
- 4.3.3 Development aid has been seen as a possible solution to the challenges faced in Africa. Explain what you understand by this concept. (1 x 2) (2)
- 4.3.4 Explain why Africa continues to have these challenges despite being a recipient of development aid. (3 x 2) (6)
- 4.3.5 The Ebola outbreak in West Africa claimed the lives of more than 5 000 people in 2014. Write a paragraph (approximately 8 lines) in which you analyse how humanitarian aid could prevent the spread of the disease. (4 x 2) (8)
- 4.4 Refer to FIGURE 4.4 showing the levels of development of the BRICS countries.
- 4.4.1 Why are the BRICS countries classified as less economically developed countries? (1 x 1) (1)
- 4.4.2 Explain what you understand by GDP (Gross Domestic Product) per capita. (1 x 1) (1)
- 4.4.3 Interpret why GDP growth rate rankings for India and China are so high. (1 x 2) (2)
- 4.4.4 Suggest possible reasons why Russia would have the highest level of education among the BRICS countries. (1 x 2) (2)
- 4.4.5 Name the development model shared by the BRICS countries. (1 x 1) (1)
- 4.4.6 Explain how the BRICS countries relate to this development model (your answer in QUESTION 4.4.5) on a global and national scale. (2 x 2) (4)

- 4.5 Refer to the newspaper extract in FIGURE 4.5 on nuclear power.
- 4.5.1 State what you understand by *nuclear energy*. (1 x 1) (1)
- 4.5.2 State why nuclear energy is a non-renewable source of energy. (1 x 1) (1)
- 4.5.3 Explain why South Africa's national grid needs extra power. (2 x 2) (4)
- 4.5.4 In a paragraph of approximately 8 lines explain why you think David Hallows thinks that the R1tn nuclear deal is a disaster. (4 x 2) (8)
- 4.6 FIGURE 4.6 shows resources needed by Africa's people.
- 4.6.1 What are *resources*? (1 x 1) (1)
- 4.6.2 Identify any THREE natural resources in FIGURE 4.6. (3 x 1) (3)
- 4.6.3 Suggest TWO possible causes of resource exploitation evident in the diagram. (2 x 2) (4)
- 4.6.4 Explain how resources can be conserved for future generations. (3 x 2) (6)
- [75]**

TOTAL: 225

