basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

GEOGRAPHY P1

NOVEMBER 2011

MARKS: 300

TIME: 3 hours

This question paper consists of 12 pages and a 12-page annexure.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of FOUR questions.
2. Answer ANY THREE questions of 100 marks each.
3. ALL diagrams are included in the ANNEXURE.
4. Number ALL your answers in the CENTRE of the line.
5. Leave a line open between subsections of questions answered.
6. Start each question at the top of a NEW page.
7. Number the answers correctly according to the numbering system used in this question paper.
8. Do NOT write in the margins of your ANSWER BOOK.
9. ENCIRCLE the numbers of the questions that you have answered on the front page of your ANSWER BOOK.
10. Where possible, illustrate your answers with labelled diagrams.
11. Write clearly and legibly.

SECTION A: CLIMATE AND WEATHER, FLUVIAL PROCESSES AND STRUCTURAL LANDFORMS

Answer at least ONE question from this section.

QUESTION 1

1.1 Refer to FIGURE 1.1 which shows the tri-cellular model. Select a label from the sketch that best suits the statements below.

1.1.1 The zone of convergence for the meeting of a warm and cold air mass (2)

1.1.2 This cell is the weakest of the three cells (2)

1.1.3 The formation of this cell is due to high surface temperatures (2)

1.1.4 The name of the global pressure belt that results from descending cold air at the 30° latitude (2)

1.1.5 This pressure belt is associated with thunderstorms due to the convergence of warm winds (2)

1.2 Refer to FIGURE 1.2 showing the different profiles and views of a river and answer the questions that follow.

1.2.1 SKETCH 1 shows a (longitudinal profile/plan view) of a river.(1 x 2) (2)

1.2.2 SKETCH 2 shows a (longitudinal profile/cross profile) of a river. (1 x 2) (2)

1.2.3 Match the demarcations in SKETCH 1 with the profiles (**X**, **Y**, **Z**) in SKETCH 2:

(a) **A–B** (1 x 2) (2)

(b) **C–D** (1 x 2) (2)

(c) **E–F** (1 x 2) (2)

1.3 Refer to FIGURE 1.3 which captures the path and effect of tropical cyclone Yasi.

1.3.1 On what date did cyclone Yasi strike the coast of Australia? (1 x 2) (2)

1.3.2 Name TWO conditions that would have favoured the development of Yasi. (2 x 2) (4)

1.3.3 What evidence from FIGURE 1.3 suggests that cyclones are common in Australia? (1 x 2) (2)

1.3.4 Explain what you understand by a *category-five cyclone*. (2 x 2) (4)

1.3.5 Refer to the statement 'local residents reported an unusual half-hour in the eye of the storm'.

(a) Why do they describe the weather conditions in the eye as unusual? (2 x 2) (4)

(b) Explain what causes the unusual conditions in the eye. (1 x 2) (2)

1.3.6 What is the local name for tropical cyclones in Australia? (1 x 2) (2)

1.3.7 Why do you think Australia would have an efficient emergency programme ready to handle natural hazards? (1 x 2) (2)

1.4 FIGURE 1.4 is a cartoon that highlights issues of climate change and its effects.

1.4.1 What do you understand by the term *climate change*? (1 x 2) (2)

1.4.2 Explain how it is possible for flooding to be linked to petrol use. (2 x 2) (4)

1.4.3 Sustainable measures need to be taken to address the challenges associated with flooding. Write a single paragraph (approximately 12 lines) discussing possible solutions that local municipalities can employ to reduce the effects of flooding. (6 x 2) (12)

1.5 The impact of urbanisation on a flow hydrograph is illustrated in FIGURE 1.5.

1.5.1 Explain the concept *flood peak/peak flow*. (1 x 2) (2)

1.5.2 How much was the peak flow before urbanisation? (1 x 2) (2)

1.5.3 Describe TWO changes in the peak flow evident in the flow hydrograph after urbanisation. (2 x 2) (4)

1.5.4 What role do trees play in controlling the water in river channels? (1 x 2) (2)

1.5.5 Name TWO negative effects that the removal of trees has on the environment. (2 x 2) (4)

1.5.6 The increase in urbanisation in South Africa requires effective river management. Write a single paragraph (approximately 12 lines) suggesting possible measures to reduce the negative effect of urbanisation on rivers. (6 x 2) (12)

1.6 Refer to FIGURE 1.6 based on structural landforms. Landform **B** is a cuesta.

1.6.1 Identify slope **C**. (1 x 2) (2)

1.6.2 Provide evidence from the diagram for your answer to QUESTION 1.6.1. (1 x 2) (2)

1.6.3 Suggest TWO ways in which ridges, such as cuestas, are significant to humans. (2 x 2) (4)

1.6.4 With reference to slope elements, answer the following questions:

(a) Identify slope element **A**. (1 x 2) (2)

(b) Name TWO characteristics of slope element **A**. (2 x 2) (4)

[100]

QUESTION 2

2.1 Refer to FIGURE 2.1 which shows air movement in a valley. Choose the correct word(s) from those given in brackets. Write only the word(s) next to the question number (2.1.1–2.1.5) in the ANSWER BOOK.

2.1.1 The valley wind labelled **A** is a/an (katabatic/anabatic) wind. (2)

2.1.2 This wind occurs during the (day/night) in valleys. (2)

2.1.3 It is also referred to as a/an (upslope/downslope) wind. (2)

2.1.4 The zone labelled **B** is the (thermal belt/frost pocket). (2)

2.1.5 The form of precipitation experienced at **C** is (frost/snow). (2)

2.2 Complete the following statements on fluvial landforms and processes below by referring to FIGURE 2.2. Use the words provided in the list below. Write only the word(s) next to the question number (2.2.1–2.2.5) in the ANSWER BOOK.

perennial; levee; oxbow lake; delta; meander; flood plain

2.2.1 **A** is a feature that forms when a loop is cut off from the bend of a river. (2)

2.2.2 **B** develops when gravel and silt accumulate on the banks of a river resulting in the bank being raised. (2)

2.2.3 Flat land that is subjected to flooding and located next to the river is called a **C**. (2)

2.2.4 **D** is a term used to describe a river that flows all year round. (2)

2.2.5 Section **E** of the river is called a ... (2)

2.3 Study the synoptic weather map in FIGURE 2.3 and answer the questions below.

2.3.1 Name the anticyclone labelled **B**. (1 x 2) (2)

2.3.2 Give a reason why pressure systems **B** and **C** are known as anticyclones. (1 x 2) (2)

2.3.3 A group of students must go on a field trip to Durban on the day presented by this synoptic weather map. What temperature will they experience on the day of their field trip? (1 x 2) (2)

2.3.4 Briefly describe how the front labelled **D** is formed. (2 x 2) (4)

2.3.5 Name the weather system labelled **A**. (1 x 2) (2)

2.3.6 In which general direction does the weather system **A** move? (1 x 2) (2)

2.3.7 Is weather system **A** likely to influence the weather conditions of Cape Town within the next 24 hours? Explain your answer. (2 x 2) (4)

2.3.8 Of what importance are weather systems such as **A** to farming in the Western Cape area in winter? (1 x 2) (2)

2.4 FIGURE 2.4 is a cartoon based on 'weird weather' in Durban.

2.4.1 Identify and describe the weather phenomenon labelled **A**. (2 x 2) (4)

2.4.2 Describe a storm surge represented by the letter **B**. (1 x 2) (2)

2.4.3 Suggest a possible reason for the weird weather mentioned in the cartoon. (1 x 2) (2)

2.4.4 Rising temperatures in cities, as evident in FIGURE 2.4, has given rise to changing weather patterns. Write a single paragraph (approximately 12 lines) discussing the consequences of changing weather patterns for coastal cities such as Durban. (6 x 2) (12)

2.5 Refer to FIGURE 2.5 illustrating a drainage basin.

2.5.1 Define the term *drainage basin*. (1 x 2) (2)

2.5.2 Identify the drainage pattern labelled **A**. (1 x 2) (2)

2.5.3 Describe the resistance of the underlying rock structure that is likely to be found on this landscape. (1 x 2) (2)

2.5.4 Describe the route that the water (precipitation) must follow to be classified as throughflow. (1 x 2) (2)

2.5.5 State, with a reason, which of the following water movements, surface run-off or groundwater flow, will take the shortest time to reach the river. (2 x 2) (4)

2.5.6 Assess the impact that the removal of vegetation at the source of the river will have on the following:

(a) Infiltration rate (1 x 2) (2)

(b) Stream discharge (Output) (1 x 2) (2)

2.6 FIGURE 2.6 is a photograph of a tor.

2.6.1 From what type of rock do tors originate? (1 x 2) (2)

2.6.2 Briefly describe what a tor looks like. (1 x 2) (2)

2.6.3 Describe the development of a tor. (3 x 2) (6)

2.7 Study FIGURE 2.7 based on mass movement.

2.7.1 Compare FIGURES 2.7A and 2.7B and state how the building of the hotel could have caused the slope to slide. (1 x 2) (2)

2.7.2 Human activity is one of the main causes of mass movement. Write a single paragraph (approximately 12 lines) suggesting possible solutions to prevent mass movement. (6 x 2) (12)

[100]

SECTION B: PEOPLE AND PLACES: RURAL AND URBAN SETTLEMENTS, PEOPLE AND THEIR NEEDS

Answer at least ONE question from this section.

QUESTION 3

3.1 Study FIGURE 3.1 illustrating a number of settlements. Match the letters (A–E) on the FIGURE to the type of settlement listed below. Write only the letter (A–E) next to the question number (3.1.1–3.1.5) in the ANSWER BOOK.

3.1.1 Linear (2)

3.1.2 Dry-point site (2)

3.1.3 Break-off-bulk point (2)

3.1.4 Specialised town (2)

3.1.5 Defensive site (2)

3.2 Choose a term from COLUMN B that matches a statement in COLUMN A. Write only the letter (A–F) next to the question number (3.2.1–3.2.5) in the ANSWER BOOK.

COLUMN A		COLUMN B
3.2.1	Extraction of raw materials from nature	A bridge industries
3.2.2	Industries that require close contact with their consumers	B gross national product
3.2.3	Industries that are located between the source of raw materials and the customer	C raw material orientated
3.2.4	Industries in which the raw material loses much of its weight during processing	D primary activities
3.2.5	Total value of goods and services produced by the permanent inhabitants of a country	E gross domestic product
		F market-orientated industries

(5 x 2) (10)

3.3 FIGURE 3.3 is a sketch map showing the land use of a city.

3.3.1 Account for the location of the CBD labelled **A**. (1 x 2) (2)

3.3.2 State TWO characteristics of the CBD. (2 x 2) (4)

3.3.3 Which land-use zone occupies the largest part of the city? (1 x 2) (2)

3.3.4 Land-use zone **B** is the transition zone. Describe TWO factors that give rise to urban decay in this zone. (2 x 2) (4)

3.3.5 'Greening' of cities is becoming increasingly important because of global warming.

(a) What evidence is there that this policy is being implemented? (1 x 2) (2)

(b) Discuss TWO advantages of 'greening' cities. (2 x 2) (4)

3.4 Study FIGURE 3.4 which shows a model of an unsustainable city.

3.4.1 Explain what you understand by the term *sustainable city.* (1 x 2) (2)

3.4.2 Name TWO factors that make a city unsustainable. (2 x 2) (4)

3.4.3 Suggest TWO measures that a city can employ to become sustainable. (2 x 2) (4)

3.4.4 Write a single paragraph (approximately 12 lines) outlining the effects of pollution on the health, environment and economy of a city. (6 x 2) (12)

3.5 Read the adapted newspaper article titled 'Exodus of commercial growers a threat to South Africa's food security'.

EXODUS OF COMMERCIAL FARMERS A THREAT TO SOUTH AFRICA'S FOOD SECURITY

Agricultural experts are warning that the farming sector in South Africa is in trouble and have appealed to the government to act to prevent commercial farmers from leaving. Currently one dairy farmer is leaving the industry every week because they are not making money. They have become high-cost producers.

South Africa as a country is beginning to import more and more. The long-term effect is that food will be more expensive. The poor will suffer as they spend 40–50% of their income on food. At a time when food security is a big issue in the world it is certainly a problem that South Africa's farmers are leaving the country.

[Adapted from *Sunday Times* (Sipho Masondo)]

3.5.1 Explain the concept *commercial farming.* (1 x 2) (2)

3.5.2 Give ONE reason for South Africa becoming a high-cost producer. (1 x 2) (2)

3.5.3 State ONE outcome of importing more food into South Africa. (1 x 2) (2)

3.5.4 All the role players need to take urgent measures to improve food security in South Africa. Write a paragraph (approximately 12 lines) explaining some measures that can be introduced to improve food security. (6 x 2) (12)

3.6 Refer to the cartoon labelled 'Tied Aid' in FIGURE 3.6.

3.6.1 Would you describe the relationship between the developing and developed countries in the cartoon as free trade? Explain your answer. (2 x 2) (4)

3.6.2 Name TWO measures that South Africa has in place to restrict imports into our country. (2 x 2) (4)

3.6.3 Developing countries seek help when they have an unfavourable balance of trade. What is an *unfavourable balance of trade*? (1 x 2) (2)

3.6.4 Name TWO disadvantages of an unfavourable balance of trade. (2 x 2) (4)

3.6.5 A strong economic sector is key to improving an unfavourable balance of trade. Discuss the importance of the secondary sector to South Africa's economy. (4 x 2) (8)

[100]

QUESTION 4

4.1 Indicate whether the following statements are TRUE or FALSE. Choose the answer and write only 'true' or 'false' next to the question number (4.1.1–4.1.5) in the ANSWER BOOK.

4.1.1 The central place theory explains the relative size and spacing of settlements. (2)

4.1.2 An example of high-order goods is bread. (2)

4.1.3 The minimum distance that people are willing to travel to purchase goods and services is called range. (2)

4.1.4 Threshold population refers to the minimum number of customers needed to make a business profitable. (2)

4.1.5 The area from where a settlement draws its customers is called an urban field. (2)

4.2 Choose a description from COLUMN B that matches a term in COLUMN A. Write only the letter (A–F) next to the question number (4.2.1–4.2.5) in the ANSWER BOOK.

COLUMN A		COLUMN B
4.2.1	Trade	A countries that have common markets or trade agreements
4.2.2	Import	B industrial estates aimed at economic and new investment
4.2.3	Decentralisation	C buying and selling of goods and services
4.2.4	Trading blocks	D movement of activities away from overcentralised areas
4.2.5	Industrial development zones	E commodity brought into a country
		F movement of industries into core areas.

(5 x 2) (10)

4.3 Many people are abandoning (leaving) their farms to live in big cities.

4.3.1 What is the movement of people from farms to live in big cities called? (1 x 2) (2)

4.3.2 Suggest TWO push factors resulting in people abandoning (leaving) their farms. (2 x 2) (4)

4.3.3 State TWO negative effects that this movement is likely to have on cities. (2 x 2) (4)

4.3.4 Sustainable measures are necessary to encourage people to remain in rural areas. Write a single paragraph (approximately 12 lines) outlining some ideas for the government to reduce rural depopulation. (6 x 2) (12)

4.4 FIGURE 4.4 shows the position of informal settlements in the city of Nairobi in Kenya.

4.4.1 Describe the location of the informal settlements. (1 x 2) (2)

4.4.2 Name TWO social problems associated with these settlements. (2 x 2) (4)

4.4.3 Suggest TWO measures that can be put in place to improve the lives of people living in informal settlements. (2 x 2) (4)

4.4.4 Explain why both the Mathare River and Ngong River are likely to be polluted. (2 x 2) (4)

4.4.5 In post apartheid South Africa a number of land reform policies have been put in place to solve the problems associated with the shortage of land. Name TWO of these policies. (2 x 2) (4)

4.5 Study the table (FIGURE 4.5) on the percentage contribution of selected activities to the GDP of South Africa.

4.5.1 What does the abbreviation *GDP* stand for? (1 x 2) (2)

4.5.2 According to the table, which economic sector makes the greatest contribution to the GDP? (1 x 2) (2)

4.5.3 State why the informal sector is not represented in the table. (1 x 2) (2)

4.5.4 Give TWO reasons for the development of a strong informal sector in South Africa. (2 x 2) (4)

4.5.5 There is a need to regulate the informal sector in the near future although there are many challenges in this regard. Write a single paragraph (approximately 12 lines) to explain some of the challenges experienced by informal traders. (6 x 2) (12)

4.6 Read the adapted newspaper article, titled 'Water crisis by 2020', below.

WATER CRISIS BY 2020

South Africa faces a water crisis and could start having shortages as early as 2020, experts told the South African Water and Energy Forum. Mike Muller told delegates that 'a crisis is looming … if we don't panic now and take action we will be in a crisis by 2020'. The shortages will largely be due to water demand outstripping supply and to a lesser extent by poor water quality due to infrastructure deteriorating. Other factors that will contribute include leaking pipes and the theft of water by farmers along the Vaal River.

Governments and municipalities are urged to build water infrastructure immediately. It is also important that companies understand their water footprint. Companies in Europe are thinking of detailing the water footprint of every item they sell.

[Adapted from *Times*, 15 February 2011]

4.6.1 Identify TWO reasons given in the article, as to why a water crisis is expected by the year 2020. (2 x 2) (4)

4.6.2 Name TWO water-transfer schemes that have been developed to supplement the water in Gauteng. (2 x 2) (4)

4.6.3 Discuss TWO disadvantages associated with the construction of dams in South Africa. (2 x 2) (4)

4.6.4 Suggest THREE measures that can be employed by the government to conserve and better manage our water supply. (3 x 2) (6)

[100]

GRAND TOTAL: 300