



# education

---

Department:  
Education  
**REPUBLIC OF SOUTH AFRICA**

**NATIONAL  
SENIOR CERTIFICATE**

**GRADE 12**

**GEOGRAPHY P1**

**NOVEMBER 2009**

**MARKS: 300**

**TIME: 3 hours**

**This question paper consists of 15 pages and a 14 page annexure.**

**INSTRUCTIONS AND INFORMATION**

1. This question paper consists of FOUR questions.
2. Answer THREE questions of 100 marks each. Choose at least ONE question from SECTION A, at least ONE question from SECTION B and a THIRD question from SECTION A or B.
3. All diagrams are included in the attached annexure.
4. Number the answers correctly according to the numbering system used in this question paper.
5. Number all your answers in the centre of the line.
6. Leave a line open between subsections of questions.
7. Start EACH question AT THE TOP of a NEW page.
8. Do NOT write in the margins of the ANSWER BOOK.
9. Encircle the question numbers that you have answered on the front page of the ANSWER BOOK.
10. Where possible, illustrate your answers with labelled diagrams.
11. Write neatly 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 on the attached ANNEXURE, showing a simplified synoptic weather map of South Africa. 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 (1.1.1 – 1.1.5) in the ANSWER BOOK, for example 1.6 A.

1.1.1 High-pressure cell H1 is the ... high-pressure cell.

- A South Pacific
- B South Atlantic
- C South Indian
- D Kalahari

1.1.2 The following air movements are associated with high-pressure cell H1:

- A Subsidence, convergence, clockwise rotation
- B Uplift, divergence, anticlockwise rotation
- C Uplift, convergence, clockwise rotation
- D Subsidence, divergence, anticlockwise rotation

1.1.3 Low-pressure cell L1 is in the ... stage of development.

- A polar front/initial
- B wave
- C warm sector/mature
- D occlusion

1.1.4 The lines on the synoptic weather map linking places of equal pressure are known as ...

- A isobars.
- B isotherms.
- C isohyets.
- D isotopes.

1.1.5 Low-pressure cell L2 is a/an ... low pressure.

- A coastal
- B tropical
- C extra-tropical
- D equatorial

(5 x 2) (10)

- 1.2 Refer to FIGURE 1.2 on the attached ANNEXURE showing different features of river capture. Give ONE word/term for each of the following descriptions. Write only the word/term next to the question number (1.2.1 – 1.2.5) in the ANSWER BOOK.
- 1.2.1 A stream that intercepts the water of another stream
- 1.2.2 A stream whose headwaters have been intercepted
- 1.2.3 A stream that is smaller than the valley through which it flows
- 1.2.4 The point where an energetic stream intercepts the water of another stream
- 1.2.5 A dry valley where no stream flows (5 x 2) (10)
- 1.3 FIGURE 1.3A on the attached ANNEXURE represents a section of the world map showing the location and movement of tropical cyclones/hurricanes in the South Indian Ocean and the West Indies respectively. Also refer to the article and satellite image of Hurricane Ike in FIGURE 1.3B on the ANNEXURE.
- 1.3.1 Give ONE similarity, visible in FIGURE 1.3A, between tropical cyclones in the South Indian Ocean and hurricanes in the West Indies. (1 x 2) (2)
- 1.3.2 Explain the point of origin of both tropical cyclones and hurricanes. (3 x 2) (6)
- 1.3.3 Very intense hurricanes, such as Ike, occur more often and more regularly. Many meteorologists link the latter with global warming. Why is this so? (3 x 2) (6)
- 1.3.4 With reference to FIGURE 1.3A, give ONE reason why tropical cyclones seldom hit the coast of southern Africa. (1 x 2) (2)
- 1.3.5 Should a tropical cyclone and a hurricane of similar strength hit the coastlines of southern Africa and the United States of America respectively, the United States of America would suffer more damage to infrastructure, while southern Africa would experience more loss of life. Write a short essay (no more than 12 lines) to explain why this is the case. Your answer should refer to the level of development in the two regions respectively. (6 x 2) (12)

- 1.4 Climatologists discovered many years ago that a reversal in wind direction occurs along the coastline from daytime to night-time. These reversed wind conditions are referred to as land and sea breezes. Land and sea breezes are localised and have a moderating influence on coastal temperatures. Use your knowledge of land and sea breezes and also refer to FIGURE 1.4 to answer the questions below.
- 1.4.1 Does FIGURE 1.4 illustrate a land breeze or a sea breeze? (1 x 2) (2)
- 1.4.2 What does it mean if one says the breeze is *localised*? (1 x 2) (2)
- 1.4.3 Briefly describe the development of the breeze illustrated in FIGURE 1.4. (3 x 2) (6)
- 1.4.4 The breeze illustrated in FIGURE 1.4 will result in high-income suburbs with high land values along the coastline bordered by warm ocean currents. Give ONE reason why this is so. (1 x 2) (2)
- 1.5 Refer to FIGURE 1.5A showing a landscape typical of inclined sedimentary layers. FIGURE 1.5B illustrates a drainage pattern that will most likely develop in the landscape shown in FIGURE 1.5A. Sketches (i) and (ii) in FIGURE 1.5C illustrate possible mass movements that could occur along slopes **P** and **Q** in the landscape shown in FIGURE 1.5A.
- 1.5.1 Name the landforms labelled **R** in FIGURE 1.5A. (1 x 2) (2)
- 1.5.2 Briefly describe the development of the landscape illustrated in FIGURE 1.5A. (3 x 2) (6)
- 1.5.3 Name the drainage pattern illustrated in FIGURE 1.5B that will develop in the landscape shown in FIGURE 1.5A. (1 x 2) (2)
- 1.5.4 Explain why the drainage pattern mentioned in QUESTION 1.5.3 will develop in this landscape. (3 x 2) (6)
- 1.5.5 Read the article on *Causes and Management of Mass Movement* in FIGURE 1.5C before answering the questions that follow.
- (a) Define the term *mass movement*. (1 x 2) (2)
- (b) Match the types of mass movement illustrated in sketches (i) and (ii) with the slopes **P** and **Q** in FIGURE 1.5A respectively. In each case give ONE reason for your choice. (4 x 2) (8)
- (c) State the main difference between the two types of mass movement illustrated in sketches (i) and (ii) in FIGURE 1.5C. (1 x 2) (2)

- (d) Poor management of slopes, such as deforestation and poor farming methods, has a detrimental effect on economic activities along these slopes. With reference to the article and sketch (ii) in FIGURE 1.5C, write a short essay (no more than 12 lines), highlighting man's contribution to increasing mass movements along slopes, the economic consequences thereof and what could be done to rectify the situation.

(6 x 2) (12)  
[100]

## QUESTION 2

- 2.1 Refer to FIGURE 2.1 on the attached ANNEXURE, illustrating a very specific climatic condition that will develop in a valley in the southern hemisphere lying outside the Tropic of Capricorn. Indicate whether the following statements are TRUE or FALSE. Choose the answer and write only 'true' or 'false' next to the question number (2.1.1 – 2.1.5) in the ANSWER BOOK.

2.1.1 FIGURE 2.1 illustrates the development of an anabatic wind.

2.1.2 The climatic condition illustrated in FIGURE 2.1 develops at night.

2.1.3 The zone marked **B** is the warm thermal belt.

2.1.4 Place **C** will record the highest temperatures in this valley.

2.1.5 At night warm air sinking down the slope, will collect at **D**.

(5 x 2) (10)

- 2.2 Refer to FIGURE 2.2 illustrating the four slope elements/forms. Choose the correct term from those given in brackets to make all the statements below TRUE. Write only the term next to the question number (2.2.1 – 2.2.5) in the ANSWER BOOK.

2.2.1 The landform illustrated in FIGURE 2.2 is associated with (tilted/horizontal) sedimentary rock layers.

2.2.2 Slope element **W** is called the (crest/cliff).

2.2.3 Slope element **W** consists of (soft/resistant) rock.

2.2.4 The angle at which slope element **X** develops (remains constant/changes constantly).

2.2.5 Slope element **Y** gets (wider/narrower) as slope element **X** retreats.

(5 x 2) (10)

- 2.3 Refer to FIGURE 2.3, showing the position of an approaching low-pressure system west of South Africa. Read the accompanying weather forecast before answering the questions that follow.
- 2.3.1 (a) Identify the low pressure system labelled **K** on the satellite image in FIGURE 2.3. (1 x 2) (2)
- (b) During which season does the above-mentioned low-pressure system usually affect the weather of South Africa? (1 x 2) (2)
- (c) Give the general direction of movement of the low-pressure system mentioned in QUESTION 2.3.1(a). (1 x 2) (2)
- (d) Give ONE reason for the direction of movement of the low-pressure system as mentioned in QUESTION 2.3.1(c). (1 x 2) (2)
- (e) Draw a sketch map of the satellite image in FIGURE 2.3, indicating the position of the low-pressure system in relation to South Africa. Clearly label the cold front, the warm front and the warm sector on the drawing. (3 x 2) (6)
- 2.3.2 Why is it important for the South African Weather Service to issue weather warnings? Use the source in FIGURE 2.3 and write a short essay (no longer than 12 lines), clearly indicating the value of weather forecasts and warnings. In your answer also indicate how reports forwarded by the public can improve weather forecasts. (6 x 2) (12)
- 2.4 The Kalahari high-pressure cell causes a subsidence inversion over the South African interior. The base height of this subsidence inversion varies from summer to winter. FIGURE 2.4 is a cross-section that shows how the base height of the subsidence inversion varies from summer to winter.
- 2.4.1 Define the term *temperature inversion*. (1 x 2) (2)
- 2.4.2 Which of the diagrams, FIGURE 2.4A or 2.4B, represents summer months? (1 x 2) (2)
- 2.4.3 Give ONE reason for your answer to QUESTION 2.4.2. (1 x 2) (2)
- 2.4.4 Describe the effect that the base height of the subsidence inversion will have on the climate of the South African interior during summer and winter months respectively. (4 x 2) (8)

- 2.5 FIGURE 2.5 illustrates a drainage basin. Read the accompanying article before answering the questions that follow.
- 2.5.1 Define the term *drainage basin*. (1 x 2) (2)
- 2.5.2 Identify the drainage pattern assumed by the river system in this drainage basin. (1 x 2) (2)
- 2.5.3 Give ONE reason, visible in FIGURE 2.5, for your answer to QUESTION 2.5.2. (1 x 2) (2)
- 2.5.4 The drainage density of the river system seems to be denser (finer) at **A** than at **B**. Explain why this is the case. (3 x 2) (6)
- 2.5.5 Determine the stream order of the river system where it flows out of the drainage basin at **Y**. (1 x 2) (2)
- 2.5.6 (a) At which point, **X** or **Y**, would there be a greater risk of flooding? (1 x 2) (2)
- (b) Explain your answer to QUESTION 2.5.6(a). (3 x 2) (6)
- (c) Outline THREE flood prevention methods that can be implemented to reduce the risk of flooding in this drainage basin. (3 x 2) (6)
- 2.5.7 In order to manage a drainage basin, the whole area that is drained by a river, including the tributaries, needs to be taken into consideration. What happens upstream in the tributaries will affect the main river downstream. Conservation of the whole drainage basin must be sustainable, so that future generations can benefit from the water system and its related ecosystems. With reference to FIGURE 2.5, write a short essay (no more than 12 lines) outlining measures that could be implemented to restore the drainage basin illustrated in FIGURE 2.5 to become a sustainable unit once again. (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 An urban area has different land-use zones and functions. The land value differs in each of these land-use zones. Complete the following sentences by using the words provided in the list below. Write only the word(s) next to the question number (3.1.1 – 3.1.5) in the ANSWER BOOK. Refer to FIGURE 3.1 to assist you.

central business district (CBD); transitional zone (zone of decay); rural-urban fringe; high-income residential; industrial park; green belt; outlying business district

3.1.1 ...	has a mixture of functions such as commercial, residential, hotels, entertainment.
3.1.2 ...	zone on the outskirts of settlements set aside for development of secondary activities.
3.1.3 ...	suburban zone for the wealthy/affluent community.
3.1.4 ...	land-use zone with the highest land value.
3.1.5 ...	area maintained for recreational activities in the city .

(5 x 2) (10)

3.2 Refer to FIGURE 3.2, illustrating a variety of economic activities found in South African cities. Choose the correct term from those given in brackets to make all the statements below TRUE. Write only the term next to the question number (3.2.1 – 3.2.5) in the ANSWER BOOK.

- 3.2.1 (Transport/Industry) is a secondary activity.
- 3.2.2 (Shops/Informal businesses) provide people with a more stable income.
- 3.2.3 A good (industrial/transport) system will encourage more tourists to visit South Africa.
- 3.2.4 (Hospitals/Entertainment) will benefit the most from the 2010 Soccer World Cup hosted by South Africa.
- 3.2.5 In preparation for the 2010 Soccer World Cup, capital expenditure on (industries/transport) has increased drastically.

(5 x 2) (10)

- 3.3 Refer to FIGURE 3.3, showing the site of a settlement in the remote parts of South Africa, before answering the questions that follow.
- 3.3.1 Would you classify the settlement as rural or as urban? (1 x 2) (2)
- 3.3.2 Classify this settlement according to the following:
- (a) Size and complexity (1 x 2) (2)
- (b) Function (1 x 2) (2)
- 3.3.3 Define the term *site*. (1 x 2) (2)
- 3.3.4 Give ONE possible reason why this site was selected for the settlement. (1 x 2) (2)
- 3.3.5 Local Agenda 21 is an approach aimed at sustainable development at the local level. Sustainable development implies a broader approach to development that integrates social, economic and environmental factors. With reference to FIGURE 3.3, write a short Local Agenda 21 proposal (no more than 12 lines) outlining measures that may be adopted to improve the quality of life of people living in this settlement. (6 x 2) (12)
- 3.4 Refer back to FIGURE 3.1, showing the site of an urban settlement and the land-use zones associated with it. Find the industrial zone.
- 3.4.1 Would you classify the industrial zone illustrated in FIGURE 3.1 as a light or a heavy industrial zone? (1 x 2) (2)
- 3.4.2 Give ONE reason for your answer to QUESTION 3.4.1. (1 x 2) (2)
- 3.4.3 Give possible reasons why this industrial zone developed on the outskirts of cities. (3 x 2) (6)
- 3.4.4 Pollution is a major problem associated with industrial development. Which land-use zone, visible in the diagram, can play a role in reducing pollution created by the industries? (1 x 2) (2)
- 3.4.5 Give ONE reason for your answer to QUESTION 3.4.4. (1 x 2) (2)
- 3.4.6 The land-use zone mentioned in QUESTION 3.4.4 also plays a role in making urban areas more sustainable units. Discuss this statement. (2 x 2) (4)

- 3.5 Read the following extract, which is a combination of articles from the *Sunday Times* dated 7 September 2008 and 29 July 2007. Also refer to FIGURE 3.4, showing the location of the Coega Industrial Development Zone.

Nelson Mandela Bay is booming with major investments, including the Alcan Aluminium smelter at the Coega IDZ, the 2010 soccer stadium, new shopping malls, golf estates, the building of an international convention centre and the extension of the runway at the airport. The multibillion rand Coega project, just 20 km up the east coast from Port Elizabeth, comprises an industrial development zone and a modern deep-water port on the Coega River.

The Coega IDZ is South Africa's first duty-free development zone. The IDZ focuses specifically on automotive, textile, metal, logistics and electronic development. It will attract direct foreign investment and job creation in the region.

The development of the deep-water port of Ngqura, which consists of a container, general cargo and bulk terminals, is set to boost South Africa's trade and export industry. This port will serve as a gateway for exports produced in the neighbouring Coega IDZ. The construction of the Ngqura port is not to take business away from the Port Elizabeth harbour, but rather to complement it.

Over the last decade, the Coega IDZ has brought in scheduled investments totalling nearly R30 billion. Many more companies are set to be operational in the IDZ in the next five years, with investors creating about 20 000 jobs each year. This is an extremely significant number considering the rate of unemployment in the Nelson Mandela Bay and the Eastern Cape as a whole.

- 3.5.1 What does the abbreviation *IDZ* stand for? (1 x 2) (2)
- 3.5.2 In which province is the Coega IDZ located? (1 x 2) (2)
- 3.5.3 Name TWO advantages of the development of the Coega IDZ for this region. (2 x 2) (4)
- 3.5.4 Explain why the development of a deep-water port at Ngqura will strengthen South Africa's position in the world trade market. (3 x 2) (6)
- 3.5.5 By strengthening South Africa's position in the world trade market, South Africa's balance of trade will also improve.
- (a) Define the term *balance of trade*. (1 x 2) (2)
- (b) Explain how South Africa's balance of trade will improve by strengthening our position in the world trade market. (3 x 2) (6)

- 3.5.6 Name TWO projects that have been included in the Coega IDZ to attract more foreign tourists/business people to this region. (2 x 2) (4)
- 3.5.7 Give ONE reason why it is important to attract more foreign tourists to this region. (1 x 2) (2)
- 3.5.8 One danger associated with the development of the Coega IDZ is that a variety of social and environmental injustices can result from its development. Write a short essay (no more than 12 lines) outlining some of the social and environmental injustices that can result from the development of the Coega IDZ. Also provide measures that can be put in place by the local authorities to minimise social and environmental injustices. (6 x 2) (12)  
**[100]**

**QUESTION 4**

- 4.1 FIGURE 4.1 on the attached ANNEXURE illustrates a number of settlements. These settlements have assumed different shapes. These settlements also developed for different reasons. You are provided with five descriptions. Identify the settlement that is best described by each of the descriptions. Write down the question number (4.1.1 – 4.1.5) and next to each the letter of the settlement that you have selected, for example 4.1.6A.
- 4.1.1 Large settlement that developed as a trade and transport settlement
- 4.1.2 Settlement that assumed a linear shape
- 4.1.3 Settlement that assumed a circular shape
- 4.1.4 Settlement that developed as a route/junction centre
- 4.1.5 Settlement that developed to exchange goods (5 x 2) (10)
- 4.2 Refer to FIGURE 4.2, showing a cross-section sketch of one of South Africa's major water transfer schemes. 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 (4.2.1 – 4.2.5) in the ANSWER BOOK, for example 4.2.6A.
- 4.2.1 The diagram shows a cross-section through the ... water transfer scheme.
- A Orange-Fish  
B Tugela-Vaal  
C Lesotho Highlands  
D Boland project/Berg River

- 4.2.2 Water is stored in the ... Dam and only released into the Vaal Dam when a need for water arises in Gauteng.
- A Driekloof
  - B Sterkfontein
  - C Kilburn
  - D Woodstock
- 4.2.3 The main reason for the development of the illustrated water transfer scheme is the provision of water for ... purposes in Gauteng.
- A domestic, agricultural and industrial
  - B domestic, agricultural and recreational
  - C domestic, industrial and recreational
  - D agricultural, industrial and recreational
- 4.2.4 ... electricity is generated at the pump turbine station.
- A Geothermal
  - B Nuclear
  - C Thermal
  - D Hydro
- 4.2.5 The provision of electricity is a ... activity.
- A primary
  - B secondary
  - C tertiary
  - D quaternary
- (5 x 2) (10)
- 4.3 Refer to FIGURE 4.3, which is an advertisement used by Nokia to advertise the Nokia 6210 Navigator cellphone. The urban settlement shown creates the impression of chaos and unsustainable development.
- 4.3.1 Identify the land-use zone labelled **X** in FIGURE 4.3. (1 x 2) (2)
- 4.3.2 Accessibility played a major role in land-use zone **X** developing characteristics such as high building density and the development of tall skyscrapers.
- (a) Define the term *accessibility*. (1 x 2) (2)
  - (b) Explain why accessibility resulted in land-use zone **X** developing the characteristics mentioned in the opening statement above. (3 x 2) (6)
  - (c) Would you agree with the statement that land-use zone **X** is no longer the most accessible land-use zone in an urban settlement? Explain your answer. (2 x 2) (4)

- 4.3.3 The Nokia 6210 Navigator advertisement and its slogan suggest that traffic congestion is a major problem in large urban settlements, especially land-use zone **X**. Give TWO reasons for the traffic congestion in this land-use zone. (2 x 2) (4)
- 4.3.4 Suggest TWO measures that can be introduced to minimise traffic congestion in land-use zone **X**. (2 x 2) (4)
- 4.3.5 Despite all the urban problems experienced in land-use zone **X**, many people and their activities are still attracted here. Discuss the role of centripetal forces in attracting enterprises and people to land-use zone **X**. (3 x 2) (6)
- 4.3.6 The following are extracts from a newspaper article that appeared in the *Sunday Times* dated 28 October 2007. Carefully read through the article before answering the following question.

**Inner city rot and grime systematically eradicated**

Johannesburg is in the middle of an urban revival, with proactive plans now being rolled out to reverse the serious decline of the 90s, which reached a climax during the closing years of the last decade. In the region of R4 billion to R5 billion has been injected into inner city rejuvenation during the past five years, with developers committed to spending another R12 billion over the next five years.

An urban-management strategy has been put in place. This strategy will entail an integrated inner city team working on a block-by-block basis to tackle issues, among others, service delivery failure, rehabilitating buildings, waste management and bylaw enforcement. There is also provision for inner city 'green lungs' such as parks and public spaces.

Write a short essay (no more than 12 lines) outlining the reasons for urban renewal to ensure that urban settlements will once again become sustainable units. Explain why emphasis is placed on any TWO of the issues mentioned in the newspaper article.

(6 x 2) (12)

- 4.4 Refer to FIGURE 4.4, showing a river catchment area. Agriculture, shown in this diagram, is dependent on the river catchment area. This river catchment area and South Africa's scarce water supply, however, are under constant threat. This could have detrimental effects for the people and other living organisms dependent on this river catchment area. To ensure the preservation of South Africa's scarce water supply, a catchment management strategy must be introduced.

- 4.4.1 Refer to the section of land that is farmed.
- (a) Does commercial farming occur at **A** or **B**? (1 x 2) (2)
  - (b) Give ONE reason for your answer to QUESTION 4.4.1(a). (1 x 2) (2)
  - (c) Name TWO factors that favour agricultural development in South Africa. (2 x 2) (4)
  - (d) Name TWO factors that restrict agricultural development in South Africa. (2 x 2) (4)
  - (e) Of what importance is agricultural development to the South African economy? (3 x 2) (6)
  - (f) Continuous mismanagement of this drainage basin could threaten food security in South Africa. Explain this statement. (3 x 2) (6)
- 4.4.2 The lower reaches of the illustrated catchment area shows a large degree of mismanagement, which places South Africa's scarce water supply under constant threat. Name TWO ways in which South Africa's scarce water supply is threatened. (2 x 2) (4)
- 4.4.3 The boy in the bottom right corner makes the following statement, 'We need to develop a catchment management strategy.' Write a short essay (no more than 12 lines) outlining why it is necessary to implement a catchment management strategy to preserve South Africa's scarce water supply. (6 x 2) (12)  
**[100]**

**GRAND TOTAL: 300**