



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS/ NATIONAL SENIOR CERTIFICATE EXAMINATIONS

GEOGRAPHY P1

2021

MARKS: 225

TIME: 3 hours

This question paper consists of 15 pages and an annexure of 11 pages.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of FOUR questions.
2. Answer ANY THREE questions of 75 marks each.
3. All diagrams are included in the ANNEXURE.
4. Leave a line between the subsections of questions answered.
5. Start EACH question at the top of 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. Draw fully labelled diagrams when instructed to do so.
9. Answer in FULL SENTENCES, except when you have to state, name, identify or list.
10. The unit of measurement and direction must be included in the final answer, where applicable, e.g. 12 km, 10 metres, 14 °C.
11. Write neatly and legibly.

SECTION A: CLIMATE, WEATHER AND GEOMORPHOLOGY

QUESTION 1

1.1 Refer to FIGURE 1.1 that shows an urban heat island effect during the day and night. Match the descriptions below with the diagrams showing DAY and NIGHT. Write only 'day' or 'night' next to the question numbers (1.1.1 to 1.1.7) in the ANSWER BOOK, e.g. 1.1.8 day.

- 1.1.1 Reflects the highest temperatures in an urban heat island
- 1.1.2 Pollution is dispersed over a greater area
- 1.1.3 Artificial heat generation is at its lowest
- 1.1.4 Increased human discomfort due to higher temperature
- 1.1.5 Greater difference between air and surface temperatures
- 1.1.6 Limited multiple reflection of heat
- 1.1.7 Fewer human activities generating heat (7 x 1) (7)

1.2 Choose a term in COLUMN B that matches the description in COLUMN A. Write only the letter (A–I) next to the question numbers (1.2.1 to 1.2.8) in the ANSWER BOOK, e.g. 1.2.9 J.

COLUMN A		COLUMN B	
1.2.1	Equilibrium between the rate of erosion and rate of deposition	A	ungraded profile
1.2.2	Shows a view of a river from bank to bank	B	temporary base level
1.2.3	Shows a side view of the river from the source to the mouth	C	base level of erosion
1.2.4	Point where a river enters the sea	D	permanent base level
1.2.5	A river that has obstructions along its course	E	graded river
1.2.6	A dam is an example of this base level of erosion	F	source
1.2.7	The lowest level to which a river can erode	G	longitudinal profile
1.2.8	The point where a river originates	H	cross profile
		I	mouth

(8 x 1) (8)

- 1.3 Refer to FIGURE 1.3, an extract on mid-latitude cyclones.
- 1.3.1 Name the type of climate that is found at the south-western tip of the country. (1 x 1) (1)
- 1.3.2 Describe the climate experienced at the south-western tip of the country during winter as indicated in the extract. (1 x 1) (1)
- 1.3.3 Why do mid-latitude cyclones migrate (move) further north in winter? (1 x 2) (2)
- 1.3.4 Describe the changes in the weather associated with the passing of a cold front over Cape Town. (2 x 2) (4)
- 1.3.5 In a paragraph of approximately EIGHT lines, explain the negative impact of cold fronts on tourism in Cape Town. (4 x 2) (8)
- 1.4 Refer to FIGURE 1.4 showing slope aspect.
- 1.4.1 Define the concept *slope aspect*. (1 x 1) (1)
- 1.4.2 Does **A** or **B** represent the Southern Hemisphere? (1 x 1) (1)
- 1.4.3 Give a reason evident from the sketch for your answer to QUESTION 1.4.2. (1 x 2) (2)
- 1.4.4 How does slope aspect influence the microclimate of valley slopes with regard to:
- (a) Temperature (1 x 2) (2)
- (b) Evaporation (1 x 2) (2)
- 1.4.5 Explain the influence of slope aspect in the Southern Hemisphere on the following:
- (a) Farming (1 x 2) (2)
- (b) Human settlements (2 x 2) (4)

- 1.5 Refer to FIGURE 1.5 showing drainage density.
- 1.5.1 Define the concept *drainage density*. (1 x 1) (1)
- 1.5.2 State the difference in drainage density of drainage basins **A** and **B**. (2 x 1) (2)
- 1.5.3 How did rock permeability influence the drainage density of drainage basin **A**? (1 x 2) (2)
- 1.5.4 Determine the stream order of the river system in drainage basin **A** at point **X**. (1 x 2) (2)
- 1.5.5 Describe the relationship between drainage density and stream order of a river by referring to drainage basins **A** and **B**. (2 x 2) (4)
- 1.5.6 Explain how the following influences the drainage density in drainage basin **B**:
- (a) Steep gradient (1 x 2) (2)
- (b) Increase in precipitation (1 x 2) (2)
- 1.6 Refer to FIGURE 1.6 showing river capture (stream piracy).
- 1.6.1 Is river **X** or **Y** the captured river? (1 x 1) (1)
- 1.6.2 Give TWO pieces of evidence in diagram **B** that shows that river capture has taken place. (2 x 1) (2)
- 1.6.3 What influence does the underlying rock have on river capture? (1 x 2) (2)
- 1.6.4 How does river capture rejuvenate the captor stream? (1 x 2) (2)
- 1.6.5 In a paragraph of approximately EIGHT lines, discuss how river capture will have a positive impact on farming at **W**. (4 x 2) (8)
- [75]**

QUESTION 2

2.1 With reference to tropical cyclones, match the term in COLUMN B with the description in COLUMN A. Write only the letter (A–I) next to the question numbers (2.1.1 to 2.1.8) in the ANSWER BOOK, e.g. 2.1.9 J.

COLUMN A		COLUMN B	
2.1.1	Provides energy that contributes to the formation of the tropical cyclone	A	dissipating
2.1.2	Local name given to a tropical cyclone in South-east Asia	B	eye wall
2.1.3	Cooler air sinks and there is no rain in this section of the tropical cyclone	C	immature
2.1.4	The stage where cooler air flows into the tropical cyclone, increasing the pressure	D	formative
2.1.5	Pressure drops to below 1 000 hPa and wind speeds increase to approximately 120 km/h in this stage	E	latent heat
2.1.6	The stage characterised by a well-developed forward left-hand quadrant	F	typhoon
2.1.7	The stage where the pressure is above 1 000 hPa and the tropical cyclone starts to develop	G	eye
2.1.8	Created by the upward spiralling movement of air around the centre	H	hurricane
		I	mature

(8 x 1) (8)

2.2 Refer to FIGURE 2.2 showing laminar and turbulent flow of water in a river. Match the descriptions below with either **A** or **B**. Write only the letter A or B next to the question numbers (2.2.1 to 2.2.7) in the ANSWER BOOK, e.g. 2.2.8 B.

- 2.2.1 Rapids are characteristic of this type of flow
- 2.2.2 Is associated with an increased volume of water in the lower course
- 2.2.3 Associated with a higher rate of erosion
- 2.2.4 Occurs mostly in the upper course of the river
- 2.2.5 Promotes the formation of flood plains and levees
- 2.2.6 A level river bed causes water to move in layers
- 2.2.7 Surface friction causes water to form eddies (swirls)

(7 x 1) (7)

- 2.3 Refer to FIGURE 2.3 showing a synoptic weather map of Southern Africa.
- 2.3.1 Give evidence that the synoptic weather map represents a summer condition. (1 x 1) (1)
- 2.3.2 Determine the isobaric interval on the synoptic weather map. (1 x 1) (1)
- 2.3.3 Name the high-pressure cell **A**. (1 x 1) (1)
- 2.3.4 State the wind direction and wind speed of the weather station at Durban. (2 x 1) (2)
- 2.3.5 Comment on the relationship between wind speed and the arrangement of the isobars in the eastern half of the country. (1 x 2) (2)
- 2.3.6 In a paragraph of approximately EIGHT lines, explain how high-pressure cell **A** and the low-pressure cell in the interior of the country could contribute to increased rainfall in the eastern half of the country during summer. (4 x 2) (8)
- 2.4 Read the blog (journal entry) in FIGURE 2.4 based on South African berg winds.
- 2.4.1 According to the blog, on which side of the mountain do berg winds descend? (1 x 1) (1)
- 2.4.2 Name the high-pressure system referred to in the blog. (1 x 1) (1)
- 2.4.3 Berg winds are associated with the presence of a coastal low pressure.
- (a) What is a *coastal low pressure*? (1 x 1) (1)
- (b) What role does a coastal low pressure play in the formation of berg winds? (1 x 2) (2)
- (c) Why are berg winds associated with high temperatures? (1 x 2) (2)
- 2.4.4 Explain the negative economic impact of the fires mentioned in the blog, on farming in the area. (2 x 2) (4)
- 2.4.5 Suggest strategies that farmers could implement to reduce the effects of fires associated with berg winds. (2 x 2) (4)

- 2.5 FIGURE 2.5 illustrates drainage patterns.
- 2.5.1 Define the concept *drainage pattern*. (1 x 1) (1)
- 2.5.2 Identify drainage patterns **A** and **B**. (2 x 1) (2)
- 2.5.3 Give TWO characteristics of drainage pattern **A** evident in FIGURE 2.5. (2 x 1) (2)
- 2.5.4 How does the volcanic landscape in FIGURE 2.5 result in drainage pattern **B**? (1 x 2) (2)
- 2.5.5 Why is drainage pattern **A** more suitable for settlements? (2 x 2) (4)
- 2.5.6 Explain how the characteristics of the underlying rock structure result in the formation of drainage patterns **A** and **B**. (2 x 2) (4)
- 2.6 FIGURE 2.6 illustrates fluvial landforms.
- 2.6.1 Which stage (course) of the river is illustrated in FIGURE 2.6? (1 x 1) (1)
- 2.6.2 What role did the gradual gradient play in the formation of the meander evident in the sketch? (1 x 2) (2)
- 2.6.3 Explain the formation of the undercut (outer bank) and slip-off slope (inner bank). (2 x 2) (4)
- 2.6.4 In a paragraph of approximately EIGHT lines, explain how a meander develops into an oxbow lake. (4 x 2) (8)
- [75]**

SECTION B: RURAL AND URBAN SETTLEMENTS AND SOUTH AFRICAN ECONOMIC GEOGRAPHY**QUESTION 3**

3.1 Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A–D) next to the question numbers (3.1.1 to 3.1.7) in the ANSWER BOOK, e.g. 3.1.8. D.

3.1.1 ... is the maximum distance a customer is willing to travel to buy goods or to use a service.

- A Central place
- B Sphere of influence
- C Range
- D Threshold

3.1.2 ... goods are used almost daily and are found in most types of settlements.

- A High-order
- B Threshold
- C Low-order
- D Comparative

3.1.3 ... describes the ranking of urban areas according to their size and degree of specialisation of the functions.

- A Central place
- B Urban morphology
- C Sphere of influence
- D Urban hierarchy

3.1.4 An urban service centre supplying goods and services to the surrounding rural area is known as a ...

- A central place.
- B low-order centre.
- C rural hamlet.
- D high order centre.

3.1.5 ... are fewer, draw people from further and offer more specialised services.

- A Towns
- B Villages
- C Farmsteads
- D Cities

3.1.6 ... refers to the number of customers a business needs to be profitable.

- A Sphere of influence
- B Threshold population
- C Urban population
- D Range of population

3.1.7 The area from which a business draws its customers is a/an ...

- A range of goods.
- B local service centre.
- C sphere of influence.
- D urban hierarchy.

(7 x 1) (7)

3.2 Choose the correct word(s) from those given in brackets. Write only the word(s) next to the question numbers (3.2.1 to 3.2.8) in the ANSWER BOOK.

3.2.1 (Light/Heavy) industries cover large areas and tend to cause more air pollution.

3.2.2 A power station is an example of a (market-/raw material) oriented industry.

3.2.3 The location of (footloose/ubiquitous) industries is not determined by locational factors such as raw materials, transport and market.

3.2.4 (Light/Heavy) industries can be located around the CBD.

3.2.5 (Market-/Raw material) oriented industries generally produce low-order and perishable goods.

3.2.6 (Bridge/Raw material oriented) industries are located near harbours where raw materials are imported.

3.2.7 (Ubiquitous/Market-oriented) industries, like telecommunications, are not determined by any specific locational requirements.

3.2.8 (Market-oriented/Heavy) industries are located close to bulk transport facilities.

(8 x 1) (8)

- 3.3 Read the extract in FIGURE 3.3 on land reform in South Africa.
- 3.3.1 What is the aim of land reform? (1 x 1) (1)
- 3.3.2 Quote TWO ways from the extract in which land reform can 'breathe new life' into the rural economy. (2 x 1) (2)
- 3.3.3 Why was the target set for land reform not reached? (2 x 2) (4)
- 3.3.4 In a paragraph of approximately EIGHT lines, explain the positive impact that land reform will have on rural communities. (4 x 2) (8)
- 3.4 FIGURE 3.4 is a table showing South African urbanisation data.
- 3.4.1 Define the term *urbanisation*. (1 x 1) (1)
- 3.4.2 Determine the rate of urbanisation between 1950 and 2050. (1 x 1) (1)
- 3.4.3 State ONE social pull factor that would influence the rate of urbanisation. (1 x 1) (1)
- 3.4.4 How will the rate of urbanisation negatively impact on the social pull factor stated in QUESTION 3.4.3? (2 x 2) (4)
- 3.4.5 Explain how the rate of urbanisation would contribute to traffic congestion in an urban area. (2 x 2) (4)
- 3.4.6 As an urban and regional planner, give TWO strategies that can be implemented to limit traffic congestion. (2 x 2) (4)
- 3.5 Refer to FIGURE 3.5 showing statistics on gold mining in South Africa.
- 3.5.1 According to FIGURE 3.5, where are the world's largest gold resources found? (1 x 1) (1)
- 3.5.2 Calculate the difference in monetary value (rands) in gold profit between 2018 and 2019. (1 x 2) (2)
- 3.5.3 Give ONE reason why gold profits increased whilst gold production decreased in 2019. (1 x 2) (2)
- 3.5.4 Explain the factors responsible for the decline of employment opportunities in the gold mining sector over the last few years. (2 x 2) (4)
- 3.5.5 Explain how gold mining contributed to industrial development. (3 x 2) (6)

- 3.6 Refer to FIGURE 3.6 showing the Platinum Spatial Development Initiative (SDI).
- 3.6.1 Name a South African province in which the Platinum SDI is located. (1 x 1) (1)
- 3.6.2 Give evidence from the map that shows the Platinum SDI is an international initiative. (1 x 1) (1)
- 3.6.3 Quote from the extract to indicate how Rustenburg will benefit from the Platinum SDI. (1 x 1) (1)
- 3.6.4 Give TWO positive impacts that the Platinum SDI will have on Rustenburg. (2 x 2) (4)
- 3.6.5 In a paragraph of approximately EIGHT lines, suggest challenges that the Platinum SDI could experience as it aims to stimulate economic development. (4 x 2) (8)
- [75]**

QUESTION 4

4.1 Choose the correct word(s) from those given in brackets. Write only the word(s) next to the question numbers (4.1.1 to 4.1.8) in the ANSWER BOOK.

- 4.1.1 Farmsteads are scattered in (nucleated/dispersed) settlements.
- 4.1.2 (Round/Linear) settlements are generally located along roads, rivers or canals.
- 4.1.3 The (dispersed/nucleated) settlement is generally associated with fragmented plots of farmland.
- 4.1.4 (Nucleated/Dispersed) settlements are generally easy targets for criminals because of remoteness.
- 4.1.5 (Linear/Round) settlements tend to be elongated for accessibility.
- 4.1.6 The advantage of (nucleated/dispersed) settlements is the sharing of equipment and ideas.
- 4.1.7 The (nucleated/dispersed) settlements are associated with making the largest profits.
- 4.1.8 Lack of privacy is a problem in (dispersed/nucleated) settlements.

(8 x 1) (8)

4.2 Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A–D) next to the question numbers (4.2.1 to 4.2.7) in the ANSWER BOOK, e.g. 4.2.8 D.

4.2.1 ... is an example of a primary economic activity.

- A Research
- B Construction
- C Forestry
- D Nursing

4.2.2 The economic sector associated with the provision of services is ...

- A quaternary.
- B primary.
- C tertiary.
- D secondary.

- 4.2.3 This sector is associated with value-added goods:
- A Primary
 - B Secondary
 - C Tertiary
 - D Quaternary
- 4.2.4 Developing a Covid vaccine will be an example of a ... economic activity.
- A primary
 - B secondary
 - C tertiary
 - D quaternary
- 4.2.5 The economic sector concerned with the extraction of raw materials from the environment:
- A Primary
 - B Secondary
 - C Tertiary
 - D Quaternary
- 4.2.6 ... refer(s) to goods that are purchased by other countries.
- A Imports
 - B Exports
 - C Local trade
 - D Foreign investment
- 4.2.7 ... refers to the exchange of goods and services between countries.
- A Informal trade
 - B International trade
 - C Domestic trade
 - D Trade balance (7 x 1) (7)
- 4.3 Refer to FIGURE 4.3 based on urban land-use zones.
- 4.3.1 Give evidence from FIGURE 4.3 that the central business district (CBD) is accessible. (1 x 1) (1)
- 4.3.2 Why does the transition zone have an irregular shape in FIGURE 4.3? (1 x 2) (2)
- 4.3.3 Explain TWO factors that have attracted heavy industries to X. (2 x 2) (4)
- 4.3.4 In a paragraph of approximately EIGHT lines explain why the CBD is no longer attractive as a location for many businesses. (4 x 2) (8)

- 4.4 Refer to the photograph in FIGURE 4.4 on urban settlement issues: informal settlements.
- 4.4.1 What evidence on the photograph indicates that this is an informal settlement? (1 x 1) (1)
- 4.4.2 Give TWO economic reasons for the development of informal settlements. (2 x 1) (2)
- 4.4.3 How will the steep slope impact the informal houses in the vicinity of X when there is heavy rainfall? (2 x 2) (4)
- 4.4.4 Why are residents in informal settlements, like in FIGURE 4.4, more vulnerable to fires than those living in formal settlements? (2 x 2) (4)
- 4.4.5 Explain TWO measures that local municipalities could implement to assist residents to reduce the risk of fires in informal settlements. (2 x 2) (4)
- 4.5 Refer to FIGURE 4.5, an extract on food security in South Africa.
- 4.5.1 Quote TWO reasons from the extract for food insecurity at a household level. (2 x 1) (2)
- 4.5.2 State the importance of ensuring a country is food secure. (1 x 2) (2)
- 4.5.3 Why are poverty-stricken households more vulnerable (at risk) to negative economic shocks? (1 x 2) (2)
- 4.5.4 Explain why households in rural areas are less vulnerable (less at risk) to hunger compared to urban households. (1 x 2) (2)
- 4.5.5 In a paragraph of approximately EIGHT lines, suggest strategies to improve food security for households in South Africa. (4 x 2) (8)
- 4.6 Refer to FIGURE 4.6 based on the Port Elizabeth-Uitenhage (Nelson Mandela Metropole) core industrial region.
- 4.6.1 Along which ocean is the Port Elizabeth-Uitenhage (Nelson Mandela Metropole) core industrial region located? (1 x 1) (1)
- 4.6.2 Name the main industry located in this core industrial region. (1 x 1) (1)
- 4.6.3 Explain TWO natural factors that influence the location of this industrial region. (2 x 2) (4)
- 4.6.4 Why is this industrial region important to the economy of the province? (2 x 2) (4)
- 4.6.5 How has advancement in technology made industries more competitive in the Port Elizabeth-Uitenhage (Nelson Mandela Metropole) core industrial region? (2 x 2) (4)
- [75]**
- TOTAL: 225**