



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS

GEOGRAPHY P1

2016

MARKS: 225

TIME: 3 hours

This question paper consists of 14 pages and a 10-page annexure.

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 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. Number the answers in the centre of the line.
8. Do NOT write in the margins of the ANSWER BOOK.
9. Draw fully labelled diagrams when instructed to do so.
10. Answer in FULL SENTENCES, except where you have to state, name, identify or list.
11. Write neatly and legibly.

SECTION A: CLIMATE, WEATHER AND GEOMORPHOLOGY

Answer at least ONE question in this section. If you answer ONE question in SECTION A, you must answer TWO questions in SECTION B.

QUESTION 1

1.1 Refer to FIGURE 1.1, an extract from a synoptic weather map.

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 number (1.1.1–1.1.7) in the ANSWER BOOK, for example 1.1.8 A.

1.1.1 Pressure cell **A** is a ... low.

- A thermal
- B continental
- C coastal
- D cut-off

1.1.2 Area **B** is experiencing ... winds.

- A southerly
- B easterly
- C westerly
- D northerly

1.1.3 Area **C** is generally associated with ... clouds.

- A cumulus
- B cumulonimbus
- C stratus
- D altostratus

1.1.4 Area **D** is the centre of a ...

- A tropical cyclone.
- B mid-latitude cyclone.
- C coastal low pressure.
- D cut-off low pressure.

1.1.5 The air pressure reading of isobar **E** is ... mb/hPa.

- A 1 004
- B 1 012
- C 1 020
- D 1 016

1.1.6 Low-pressure system **F** is part of a family of ...

- A mid-latitude cyclones.
- B tropical cyclones.
- C coastal low pressures.
- D cut-off low pressures.

1.1.7 High-pressure cell **G** is known as the ... High-Pressure Cell.

- A South Indian/Mauritius
- B South Pacific
- C Kalahari/Continental
- D South Atlantic/St Helena

(7 x 1) (7)

1.2 Choose a term from COLUMN B that matches the geomorphological description in COLUMN A. Write only the letter (A–I) next to the question number (1.2.1–1.2.8) in the ANSWER BOOK, for example 1.2.9 J.

COLUMN A		COLUMN B	
1.2.1	Stream pattern that flows into a central pan or a low-lying area	A	rectangular pattern
1.2.2	Forms on igneous rocks that have joints and cracks	B	superimposed drainage
1.2.3	Forms on inclined rock layers that are unequally resistant to erosion	C	trellis pattern
1.2.4	Develops on a dome where streams flow outwards	D	antecedent drainage
1.2.5	A drainage pattern that is maintained even after the land has been uplifted and folded	E	radial/centrifugal pattern
1.2.6	A stream pattern that does not match the geology and topography of the existing landscape	F	centripetal pattern
1.2.7	Forms in mostly glacial regions where no specific pattern can be identified	G	dendritic pattern
1.2.8	Occurs on rocks that have uniform resistance to erosion and where tributaries join the main river at acute angles	H	braided pattern
		I	deranged pattern

(8 x 1) (8)

- 1.3 Refer to FIGURE 1.3 based on the passage of a typhoon.
- 1.3.1 (a) In which area/region of the world does Typhoon Usagi occur? (1 x 1) (1)
- (b) State ONE visible characteristic in the diagram that confirms that Typhoon Usagi is in the mature stage. (1 x 1) (1)
- 1.3.2 (a) Give a reason for the direction of movement of the typhoon. (1 x 1) (1)
- (b) How many typhoons have been experienced before Typhoon Usagi in this region during this season? (1 x 2) (2)
- 1.3.3 State ONE condition that could have led to Typhoon Usagi developing into a super typhoon? (1 x 2) (2)
- 1.3.4 A typhoon is influenced by the availability of energy during its life cycle. Write a paragraph of approximately EIGHT lines in which you explain how energy is made available and taken away from the system during the mature and dissipating stages. (4 x 2) (8)
- 1.4 FIGURE 1.4 shows a temperature inversion in a valley.
- 1.4.1 Identify the cause of air pollution in this valley. (1 x 1) (1)
- 1.4.2 Name ONE example of a type of pollutant that is emitted at point **B**. (1 x 1) (1)
- 1.4.3 Give a suitable term to describe area **A**. (1 x 1) (1)
- 1.4.4 Describe the relationship between altitude and temperature as shown on the graph. (1 x 2) (2)
- 1.4.5 The amount of smoke on the valley floor could increase at night. Suggest TWO possible reasons for this increase. (2 x 2) (4)
- 1.4.6 Analyse the following statement: 'Temperature influences the location of settlements in a valley.' (3 x 2) (6)
- 1.5 Refer to FIGURE 1.5, based on stream piracy/river capture.
- 1.5.1 Identify feature **W** in FIGURE 1.5. (1 x 1) (1)
- 1.5.2 What purpose does feature **W** serve? (1 x 1) (1)
- 1.5.3 Explain the process that had to take place over the past 1 000 years for River **B** to be named 'captor stream'. (2 x 2) (4)
- 1.5.4 Give a reason for the large amount of river gravel that is likely to be found at area **V**. (1 x 2) (2)

- 1.5.5 State ONE change that River **B** underwent from 1 000 years ago to the present day. (1 x 2) (2)
- 1.5.6 What implication does stream piracy/river capture have for communities that depend on River **A** for economic activities? (2 x 2) (4)
- 1.6 Refer to FIGURE 1.6, a photograph showing the impact of people on rivers.
- 1.6.1 What does the term *river management* mean? (1 x 1) (1)
- 1.6.2 Which government department is responsible for the health and sustainable use of rivers? (1 x 1) (1)
- 1.6.3 What evidence in the photograph indicates poor river management? (2 x 1) (2)
- 1.6.4 Recommend TWO ways in which the municipality can reduce the impact of informal settlements on rivers. (2 x 2) (4)
- 1.6.5 Write a paragraph of approximately EIGHT lines in which you give reasons why it is crucial (very important) to maintain the health (or quality) of rivers in South Africa. (4 x 2) (8)
- [75]**

QUESTION 2

- 2.1 Study FIGURE 2.1, based on stages in the development of a mid-latitude cyclone.
- 2.1.1 Which line of latitude, 20°S, 60°S or 80°S, is represented by line **A**?
- 2.1.2 Is a mid-latitude cyclone a high-pressure system or a low-pressure system?
- 2.1.3 Describe the circulation of the air, as shown in stage **2**.
- 2.1.4 Name the zone of separation between the westerly and easterly winds.
- 2.1.5 Name the stage of development during which fronts form.
- 2.1.6 Define the term *cold front*, seen in stage **3**.
- 2.1.7 Which stage (**1**, **2**, **3** or **4**) shows the mid-latitude cyclone in the occlusion stage?
- 2.1.8 Give ONE point of evidence in the diagram that indicates that this cyclone occurs in the Southern Hemisphere. (8 x 1) (8)

- 2.2 Choose the correct word(s) from those given in brackets. Write only the word(s) next to the question number (2.2.1–2.2.7) in the ANSWER BOOK.
- 2.2.1 (Ground water/The water table) is the upper limit of the saturated zone in the rocks below the surface of the Earth.
- 2.2.2 The river (mouth/source) is the area where the river flows into an ocean, sea or lake.
- 2.2.3 The (drainage basin/river system) consists of all the tributaries and the main river/stream.
- 2.2.4 Water that flows over the surface of the Earth before entering a river is known as (channel/sheet) flow.
- 2.2.5 A smaller river that flows into the main river/stream is known as the main river's (confluence/tributary).
- 2.2.6 A high-lying area between two rivers in the same drainage basin is a/an (interfluve/watershed).
- 2.2.7 A (permanent/temporary) base level of erosion is found where a river flows into the ocean. (7 x 1) (7)
- 2.3 Study FIGURE 2.3 showing slope winds.
- 2.3.1 Name wind **A** and wind **B**. (2 x 1) (2)
- 2.3.2 State ONE factor that is responsible for the reversal of wind direction, as shown by winds **A** and **B**. (1 x 1) (1)
- 2.3.3 Apart from air movement, state TWO other differences between winds **A** and **B**. (2 x 2) (4)
- 2.3.4 Give a reason why temperature increases with height in valley **D**. (1 x 2) (2)
- 2.3.5 Evaluate how the slope winds (**A** and **B**) can have both a positive and negative influence on humans and human activities. (3 x 2) (6)
- 2.4 FIGURE 2.4 is a schematic representation of the dimensions of an urban heat island.
- 2.4.1 Give a possible reason for the asymmetrical (unbalanced) shape of the thermal plume of the urban heat island. (1 x 1) (1)
- 2.4.2 Give TWO points of evidence that suggest that FIGURE 2.4 represents daytime conditions. (2 x 1) (2)
- 2.4.3 Draw a labelled diagram to show changes to the shape of the urban heat island during the night. (2 x 1) (2)

- 2.4.4 State why the area in the city centre (CBD) is associated with stronger updraughts. (1 x 2) (2)
- 2.4.5 In a paragraph of approximately EIGHT lines, explain how the building density of the CBD and building materials used in the CBD cause the formation of the intense (strong) urban heat island. (4 x 2) (8)
- 2.5 Refer to FIGURE 2.5 which shows a drainage basin from source to mouth and its corresponding longitudinal profile.
- 2.5.1 Define the term *drainage basin*. (1 x 1) (1)
- 2.5.2 The following questions refer to drainage density.
- (a) What is *drainage density*? (1 x 1) (1)
- (b) State ONE factor that influences drainage density. (1 x 2) (2)
- (c) Give evidence from the diagram to indicate that the upper course has the highest drainage density. (1 x 2) (2)
- 2.5.3 The following questions refer to the longitudinal profile.
- (a) What evidence indicates that it is a graded profile? (1 x 1) (1)
- (b) Use FIGURE 2.5 and in a paragraph of approximately EIGHT lines, explain how a river maintains its graded longitudinal profile (the concept of dynamic equilibrium). (4 x 2) (8)
- 2.6 Along the course of a river, various features such as levees and deltas are found.
- 2.6.1 Refer to the formation of a levee in FIGURE 2.6.
- (a) What is a *levee*? (1 x 1) (1)
- (b) Give reasons for the difference in size between the sediment deposited at **C** and the sediment deposited at **D** in FIGURE 2.6. (2 x 2) (4)
- (c) Explain why levees can be both advantageous and disadvantageous to farming on the adjacent flood plain. (2 x 2) (4)
- 2.6.2 The following questions refer to deltas.
- (a) Where are deltas found in a river? (1 x 2) (2)
- (b) Give a reason for the large quantities of deposited material found where a delta is formed. (1 x 2) (2)
- (c) Why are deltas rare in South African rivers? (1 x 2) (2)

[75]

SECTION B: RURAL AND URBAN SETTLEMENTS AND SOUTH AFRICAN ECONOMIC GEOGRAPHY

Answer at least ONE question in this section. If you answer ONE question in SECTION B, you must answer TWO questions in SECTION A.

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 number (3.1.1–3.1.7) in the ANSWER BOOK, for example 3.1.8 A.

- 3.1.1 The smallest type of rural settlement is a/an ...
- A hamlet.
 - B isolated farmstead.
 - C low-order service centre.
 - D village.
- 3.1.2 A settlement is classified as rural as a result of the ...
- A number of people living in the settlement.
 - B size of the settlement.
 - C function of the settlement.
 - D number of low-order activities.
- 3.1.3 The site of a settlement is influenced by the following natural factors:
- A Water, market, climate
 - B Water, soil fertility, relief
 - C Water, topography, harbour
 - D Historical circumstances, water, trade
- 3.1.4 Dry-point settlements occur near ...
- A deserts.
 - B oases.
 - C marshes.
 - D high ground.
- 3.1.5 Tourism is an example of a ... economic activity.
- A quaternary
 - B tertiary
 - C secondary
 - D primary
- 3.1.6 The influence of aspect on the situation of settlements refers to the following principle:
- A Valley floors could experience frost.
 - B Upper slopes experience low average temperatures.
 - C In the Southern Hemisphere, north-facing slopes are warmer.
 - D Level plains attract more people than rugged terrains.

3.1.7 A settlement that is located at a river crossing is known as a ... settlement.

- A gateway/gap
- B bridge
- C wet-point
- D break-of-bulk point

(7 x 1) (7)

3.2 Choose a term from COLUMN B that matches the statement in COLUMN A. Write only the letter (A–I) next to the question number (3.2.1–3.2.8) in the ANSWER BOOK, for example 3.2.9 J.

COLUMN A		COLUMN B	
3.2.1	Another name for a domestic market	A	imports
3.2.2	Raw materials that are processed	B	infrastructure
3.2.3	Goods that are purchased from other countries	C	home market
3.2.4	Refers to roads, railways and communication networks	D	tariffs
3.2.5	Replacement of imported goods with locally produced goods	E	value-added products
3.2.6	Taxes levied on imported goods	F	spatial development initiatives
3.2.7	Promotes industrialisation along major routes to link IDZs	G	free trade
3.2.8	No barrier to the import and export of goods and services	H	exports
		I	import substitution

(8 x 1) (8)

3.3 Refer to FIGURE 3.3, a cartoon on urban expansion.

3.3.1 Define the term *urban expansion*. (1 x 1) (1)

3.3.2 State how urban expansion will change the settlement pattern from 1980 to 2020. (1 x 1) (1)

3.3.3 Give ONE reason for urban expansion. (1 x 2) (2)

3.3.4 Discuss TWO problems that arise from urban expansion. (2 x 2) (4)

3.3.5 Suggest TWO possible solutions for the problems associated with urban expansion. (2 x 2) (4)

3.3.6 The estate agent advertises the land by saying, 'It has great views.' Why has the expression on the prospective buyers' faces changed from 1980 to 2020? (1 x 2) (2)

- 3.4 Refer to FIGURE 3.4 showing the general shape and layout of Bangkok, Thailand.
- 3.4.1 Name the general shape of Bangkok. (1 x 1) (1)
- 3.4.2 Refer to FIGURE 3.4 and state which factor is responsible for the shape of Bangkok in your answer to QUESTION 3.4.1. (1 x 1) (1)
- 3.4.3 Describe the location of the CBD in relation to Bangkok's city boundaries. (1 x 2) (2)
- 3.4.4 State TWO advantages of the location of the CBD as described in QUESTION 3.4.3. (2 x 2) (4)
- 3.4.5 The CBD of Bangkok is surrounded by shanty towns (informal settlements). This might result in commercial decentralisation. In a paragraph of approximately EIGHT lines, explain why this might be the case. (4 x 2) (8)
- 3.5 Refer to FIGURE 3.5, a case study on sugar cane farming.
- 3.5.1 In which province is sugar cane mainly grown? (1 x 1) (1)
- 3.5.2 State TWO climatic conditions that make this area suitable for the cultivation of sugar cane. (2 x 2) (4)
- 3.5.3 State ONE socio-economic factor that negatively influences sugar cane farming. (1 x 2) (2)
- 3.5.4 Explain how sugar cane farming has stimulated the economic development of the province in QUESTION 3.5.1. (2 x 2) (4)
- 3.5.5 Discuss why the sugar mills are ideally located. (2 x 2) (4)
- 3.6 Study the map in FIGURE 3.6 showing the core industrial regions of South Africa.
- 3.6.1 State ONE difference between a *heavy industry* and a *light industry*. (2 x 1) (2)
- 3.6.2 (a) Which ONE of the four industrial regions could be considered to be dominated by light industries when compared to the other three industrial regions? (1 x 1) (1)
- (b) Give a reason for your answer to QUESTION 3.6.2(a). (1 x 2) (2)
- 3.6.3 State ONE post-apartheid industrial development strategy that was introduced to alleviate (reduce) over-concentration in the core industrial regions. (1 x 2) (2)
- 3.6.4 Despite being landlocked/inland, the PWV/Gauteng industrial region contributes the most to the GDP of South Africa. In a paragraph of approximately EIGHT lines, discuss why this is the case. (4 x 2) (8)

[75]

QUESTION 4

4.1 Choose a term from COLUMN B that matches the description in COLUMN A. Write only the letter (A–H) next to the question number (4.1.1–4.1.7) in the ANSWER BOOK, for example 4.1.8 J.

COLUMN A		COLUMN B	
4.1.1	An urban settlement that provides goods and services to the surrounding rural population	A	low-order service
		B	sphere of influence
4.1.2	A small settlement with few functions, for example a country town	C	high-order centre
		D	range of goods
4.1.3	The minimum number of people required to support a business	E	threshold population
4.1.4	The area from which a business draws its customers (also known as a market area)	F	low-order centre
		G	central place
4.1.5	The maximum distance a consumer is willing to travel to purchase goods	H	high-order service
4.1.6	Services that are required every day and used by people on a regular basis		
4.1.7	A large settlement with many functions, for example a city		

(7 x 1)

(7)

4.2 Choose the correct word from those given in brackets. Write only the word next to the question number (4.2.1–4.2.8) in the ANSWER BOOK.

- 4.2.1 Mining is an example of a (primary/tertiary) activity.
- 4.2.2 The mining sector of South Africa contributes (more/less) to the GDP than the tertiary sector.
- 4.2.3 South Africa has a (large/small) variety of minerals compared to most countries.
- 4.2.4 Most of South Africa's water sources (which impacts on mining activities) are found in the (eastern/western) half of the country.
- 4.2.5 The mining sector provides raw materials to the (quaternary/secondary) sector of the economy.
- 4.2.6 Industries located close to a mine are known as (market/resource)-orientated industries.

- 4.2.7 Platinum mines are most prominent in (North West/Mpumalanga).
- 4.2.8 (Coal/Platinum) is used as a raw material in the generation of electricity in South Africa. (8 x 1) (8)
- 4.3 Study FIGURE 4.3, a cartoon about a country village.
- 4.3.1 Define the term *rural-urban migration*. (1 x 1) (1)
- 4.3.2 Give the population size of this country village on weekends and during the week respectively. (2 x 1) (2)
- 4.3.3 State and explain ONE pull factor that could explain the size of the population during the week. (2 x 2) (4)
- 4.3.4 In a paragraph of approximately EIGHT lines, outline the consequences of rural depopulation on people and the local economy of the country village. (4 x 2) (8)
- 4.4 Study FIGURE 4.4 showing an informal settlement.
- 4.4.1 Define the term *informal settlement*. (1 x 1) (1)
- 4.4.2 (a) Name TWO factors that could have influenced the location of this informal settlement. (2 x 1) (2)
- (b) Why is location an important factor to the residents of informal settlements? (1 x 2) (2)
- 4.4.3 Explain TWO negative environmental impacts of informal settlements. (2 x 2) (4)
- 4.4.4 With reference to FIGURE 4.4, give ONE reason why fire could spread through this settlement easily. (1 x 2) (2)
- 4.4.5 Give TWO possible reasons why local governments want to restrict the growth of informal settlements. (2 x 2) (4)
- 4.5 Study FIGURE 4.5, a photograph that shows lunchtime trading in a typical South African city.
- 4.5.1 Would you classify the trading as formal or informal? (1 x 1) (1)
- 4.5.2 Give evidence in the photograph to support your answer to QUESTION 4.5.1. (1 x 2) (2)
- 4.5.3 Why is the product that is sold likely to contravene (not meet with) municipal by-laws? (1 x 2) (2)
- 4.5.4 Why does this type of trading not contribute directly to the GDP? (1 x 2) (2)

4.5.5	Give TWO reasons for the rapid growth of the informal sector in South Africa.	(2 x 2)	(4)
4.5.6	Explain why the informal sector has an important role to play in the South African economy.	(2 x 2)	(4)
4.6	The current drought in South Africa impacts negatively on the country's food security.		
4.6.1	Define the term <i>food security</i> .	(1 x 1)	(1)
4.6.2	Why is it important to improve food security in a country?	(2 x 2)	(4)
4.6.3	Why are people living in urban settlements more likely to have higher levels of food security than those living in rural areas?	(1 x 2)	(2)
4.6.4	Write a paragraph of approximately EIGHT lines to analyse the impact of the current drought crisis on South Africa's food security.	(4 x 2)	(8)
			[75]
		TOTAL:	225