



NATIONAL SENIOR CERTIFICATE EXAMINATION
MAY 2022

GEOGRAPHY: PAPER I

Time: 3 hours

200 marks

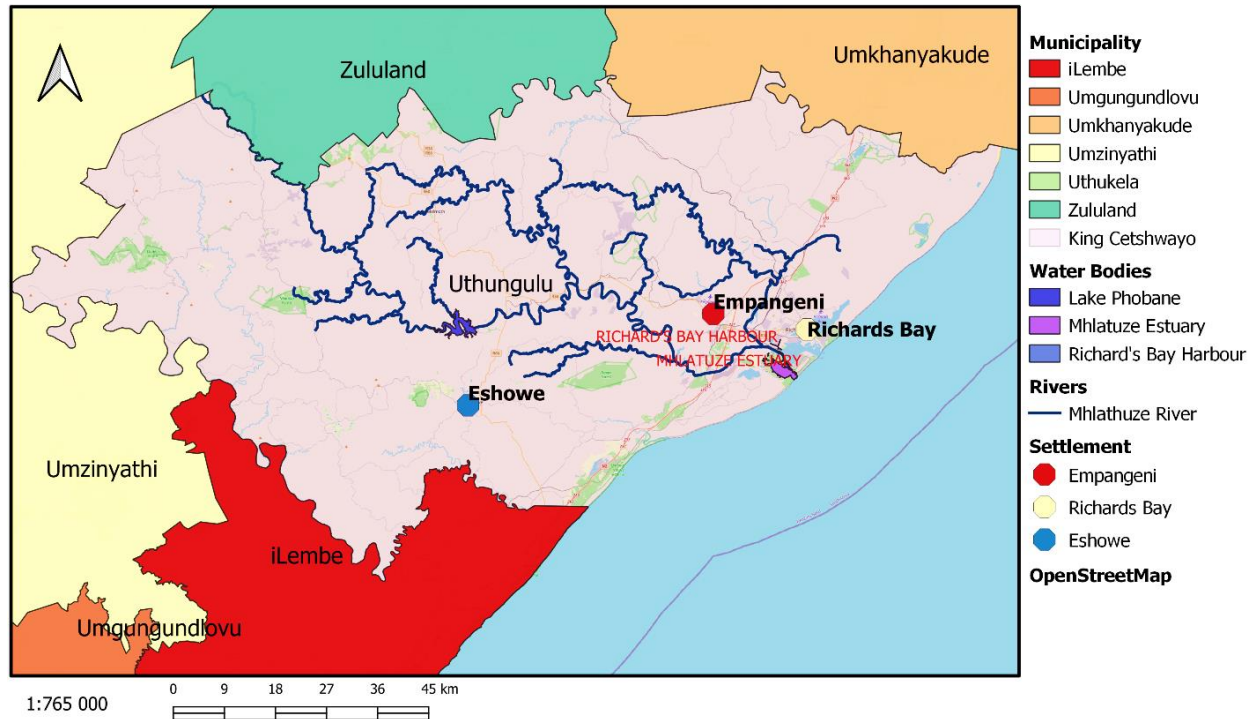
PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

1. This question paper consists of 20 pages. Please check that your question paper is complete.
 2. Read the questions carefully.
 3. **ALL THREE QUESTIONS ARE COMPULSORY.**
 4. Credit will be awarded for the following:
 - interpretation
 - explanation
 - evidence of personal observations where this is appropriate to the question.
 5. You are encouraged to use sketch maps, diagrams and other explanatory drawings to support your answers wherever relevant.
 6. Pay attention to the mark allocation.
 7. Number your answers exactly as the questions are numbered.
 8. It is in your own interest to write legibly and to present your work neatly.
-

QUESTION 1 INTEGRATED QUESTION: THE GEOGRAPHY OF THE KING CETSHWAYO DISTRICT

Use Fact File 1, the King Cetshwayo District, as a reference when answering Question 1 below.

Fact File 1: The King Cetshwayo District



- The King Cetshwayo District is in the province of KZN, 150 kilometres north of eThekweni.
- In 2019, the total population was 982 726, or 8,6% of the province's total population.
- The Richards Bay-Empangeni coastal-urban node falls in the district.
- Richards Bay Harbour is the deepest natural harbour in Africa.

[Source: <www.cogta.gov.za>]

1.1 Climate Concepts

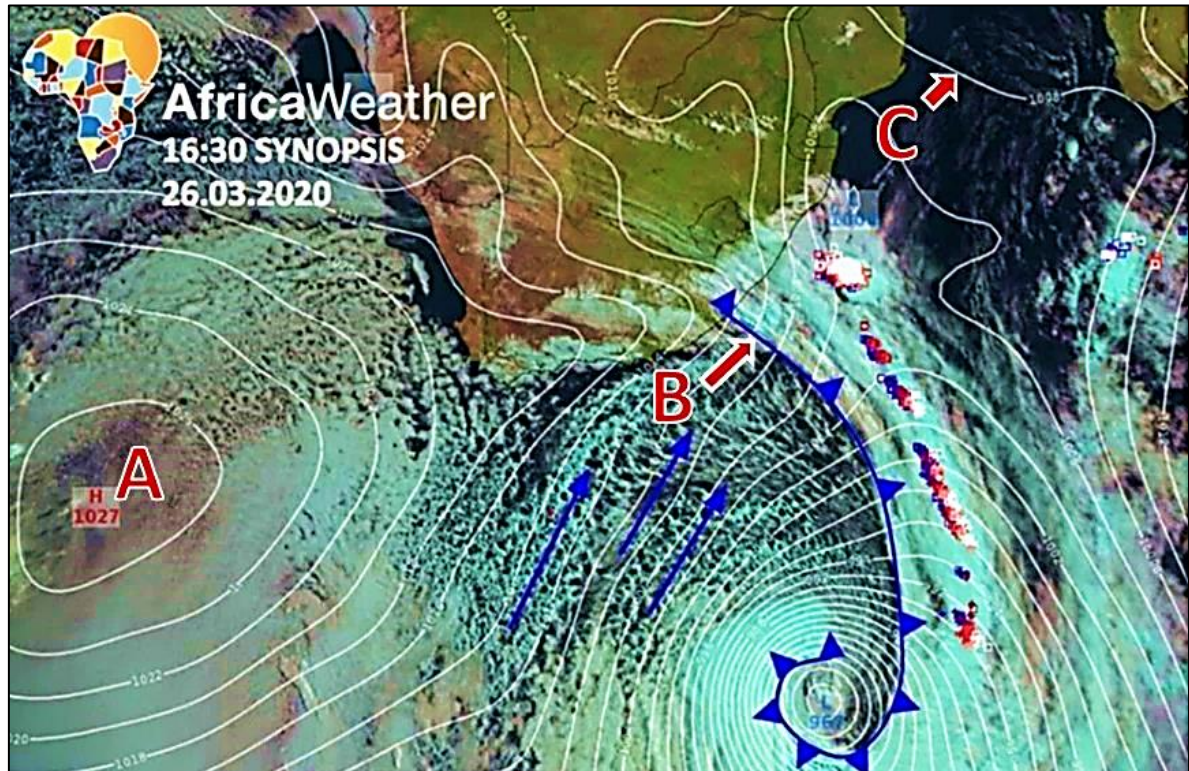
Complete the following questions by selecting the correct answer in each instance. Write the number of the question and the letter corresponding to your answer, e.g., 1.1.0 A.

- 1.1.1 The force exerted by the atmosphere by virtue of its weight on any surface.
- A Air pressure
 - B Anabatic flow
 - C Cyclone
 - D Ridge
- (1)
- 1.1.2 Bergwinds blow mainly in winter due to ...
- A the position of the ITCZ.
 - B the low-pressure trough.
 - C the anticyclone over the interior.
 - D tropical cyclones over the Indian Ocean.
- (1)
- 1.1.3 A low-pressure system that spins off independently from the main planetary circulation.
- A Cut-off low
 - B Thermal low
 - C Low-pressure trough
 - D Coastal low
- (1)
- 1.1.4 The strong, often persistent and dry south-easterly wind that blows on the South African coast from spring to late summer.
- A Line thunderstorms
 - B Urban heat island
 - C Cape Doctor
 - D Urbanisations
- (1)
- 1.1.5 Line showing the regions either having less than, or more than the average rainfall in South Africa.
- A 500 mm isohyet
 - B 1013 hPa isobar
 - C 120 knot winds isopleth
 - D 25 °C isotherm
- (1)
- 1.1.6 The Western Cape has a ... climate due to its warm summers and wet winters.
- A continental
 - B Mediterranean
 - C maritime
 - D tropical
- (1)

1.2 Mid-latitude cyclones

Study Figure 1, a synoptic image of a front passing by the KZN coast.

Figure 1



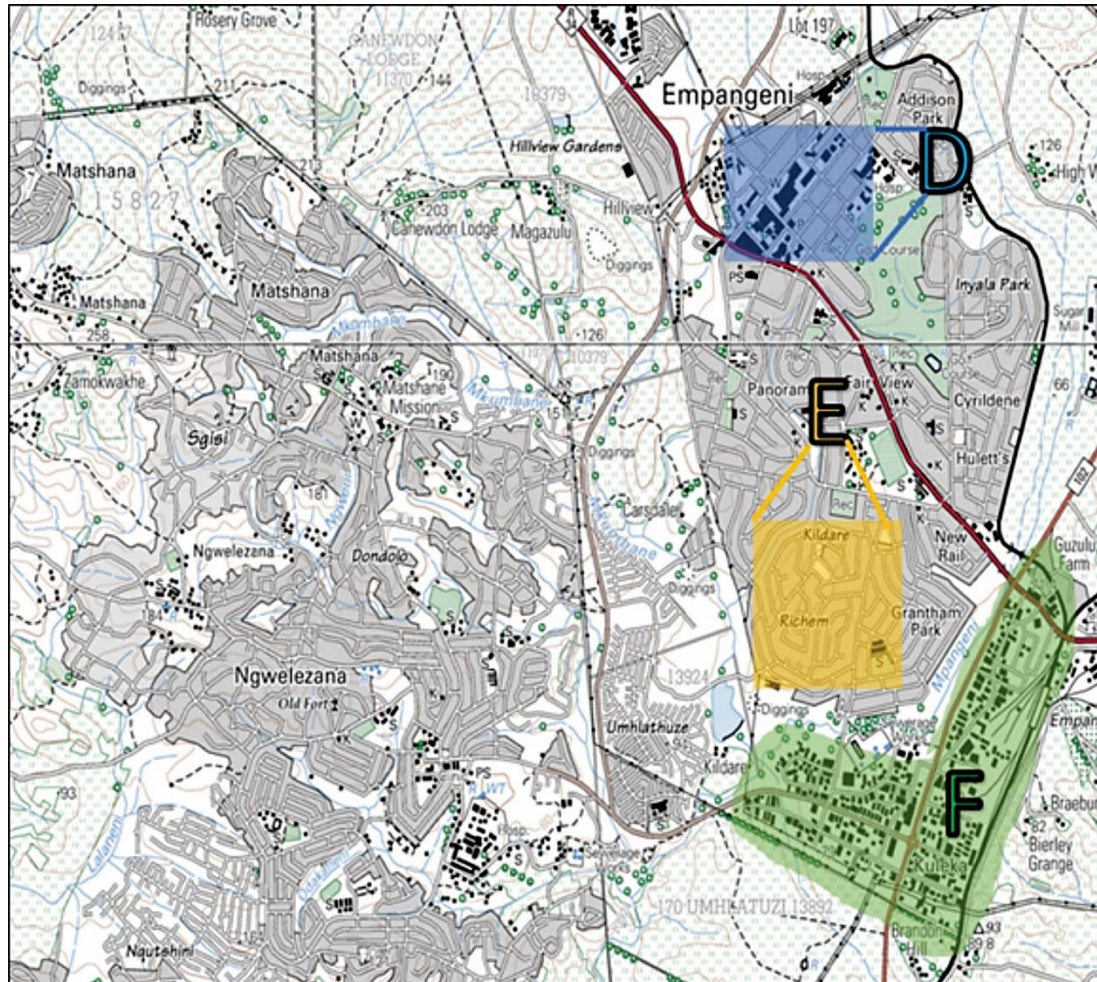
[Source: AfricaWeather]

- 1.2.1 Name anticyclone **A**. (1)
- 1.2.2 Name front **B**. (1)
- 1.2.3 What type of cloud would you find at front **B**? (1)
- 1.2.4 Name the line at **C**. (1)
- 1.2.5 Describe how anticyclone **A** influences seasonal rainfall and mid-latitude cyclones over South Africa. (4)
- 1.2.6 Explain how a mid-latitude cyclone is formed. (4)
- 1.2.7 What is the economic benefit of mid-latitude cyclones for South Africa? (1)
- 1.2.8 Assess the impact that a mid-latitude cyclone could have on shipping. (4)
- 1.2.9 Send a message to a ship captain outlining TWO weather conditions they could expect as the front moves over them. (2)

1.3 Urban studies

Study Figure 2, a topographical map extract of the Empangeni Region.

Figure 2



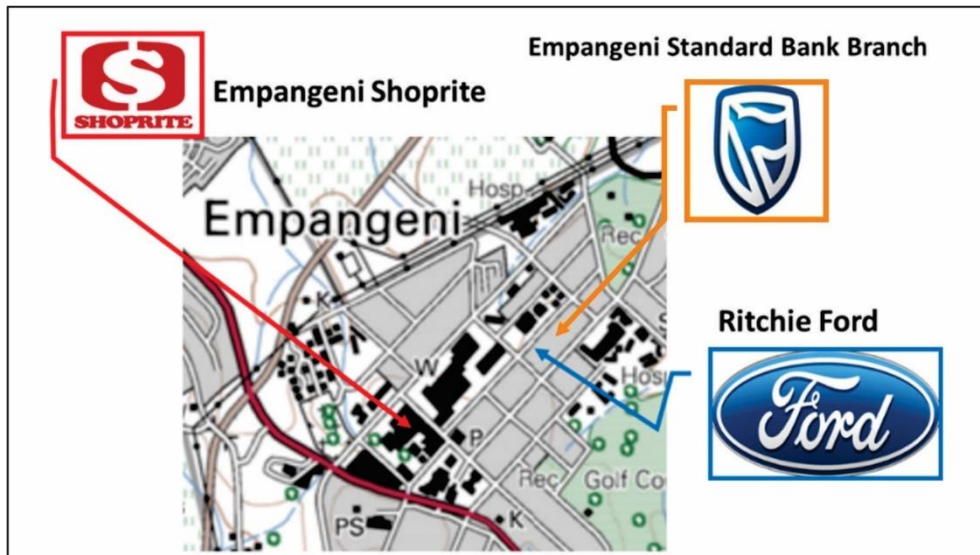
[Source: NGI and adapted by Examiner]

- 1.3.1 Name the street patterns at **D** and **E**. (2)
- 1.3.2 Identify the land-use zone labelled **F**. (1)
- 1.3.3 Provide a reason for your answer to Question 1.3.2. (2)
- 1.3.4 The settlement of Ngwelezana is rapidly expanding, and most of the new developments are informal housing.
 - (a) Explain what an *informal settlement* is. (1)
 - (b) Describe TWO daily socioeconomic issues faced by people in informal settlements. (4)
 - (c) Using TWO pieces of evidence, explain why Empangeni is an example of an apartheid-planned settlement. (4)

1.4 Urban hierarchies

Refer to Figure 3, an enlarged image of the area labelled **D** (highlighted in blue) on Figure 2, showing some of the businesses found in Empangeni.

Figure 3



[Source: adapted by Examiner]

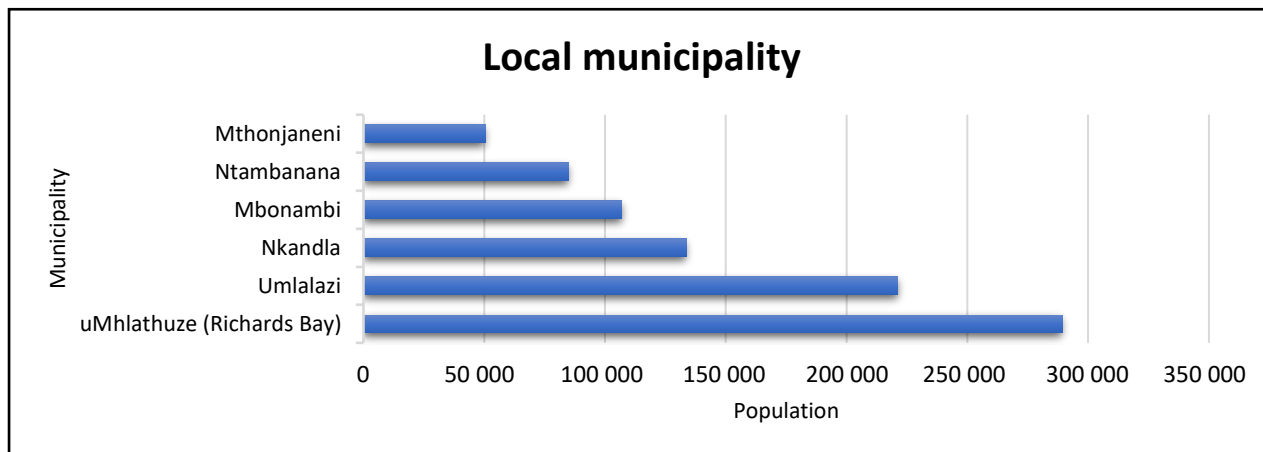
State whether the following statements are True or False. Write only the number of the question and whether it is True or False, e.g., 1.4.0 False.

- | | | |
|-------|--|-----|
| 1.4.1 | Standard Bank has the largest range. | (1) |
| 1.4.2 | Shoprite provides higher-order goods. | (1) |
| 1.4.3 | Ritchie Ford needs a small threshold population. | (1) |
| 1.4.4 | Shoprite has the smallest sphere of influence. | (1) |
| 1.4.5 | Market area is the type of customer that would shop at Shoprite. | (1) |

1.5 Urban settlements

Study Figure 4, a graph indicating the population in the local municipalities of the King Cetshwayo District Municipality.

Figure 4



[Source: <www.cogta.gov.za>]

1.5.1 What is Mbonambi's population? (1)

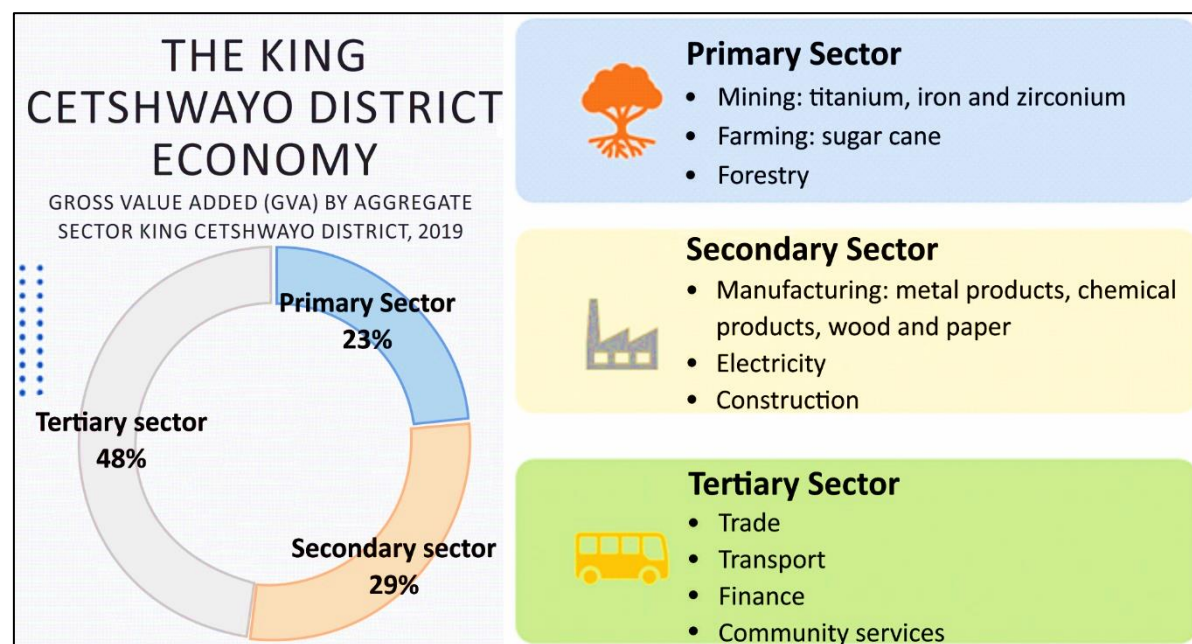
1.5.2 Which municipality is most affected by urban sprawl? (1)

1.5.3 Discuss TWO issues that cities experience as they grow. (4)

1.6 Secondary and tertiary sectors

Figure 5 is an infographic of the King Cetshwayo District's economy.

Figure 5



[Source: <https://www.cogta.gov.za>]

- 1.6.1 How is a *balance of trade* calculated? (1)
- 1.6.2 Why is the tertiary sector the largest in terms of GVA? (2)
- 1.6.3 Explain why Richards Bay focuses on the export market. (2)
- 1.6.4 Give TWO ways in which the development of the secondary sector will help to improve the *employment levels* and the *trade balance* of a region. (4)

1.7 Strategies for industrial development

Read Fact File 2 about the development of the IDZ near Richards Bay.

Fact File 2: Industrial parks are planned for every district in Kwazulu-Natal



- New industry-focused hubs will attract investments.
- These hubs will assist existing businesses by improving access to markets and supply chains.
- The harbours attract good investor interest.
- Richards Bay is also home to an Industrial Development Zone.
- The design of the industrial parks and the provision of infrastructure are currently underway.

The Richards Bay Industrial Development Zone (RBIDZ):

- has a huge coal export terminal, deep-sea port, and aluminium smelters;
- key sectors include:
 - agri-processing
 - ICT
 - telecommunications
 - manufacturing
 - logistics
 - renewable energy;
- has mining as an important sector in this region; and
- includes another major urban centre, Empangeni, which has several educational institutions, including the University of Zululand.

[Source: Adapted from <www.globalafricanetwork.com>]

- 1.7.1 Match the descriptions in Column B to the terms in Column A. Write only the lower-case letter of the question and the upper-case letter corresponding to your answer in your Answer Book, e.g., (f) H.

Column A			Column B
(a)	Supply chains	A	Facilities and systems that support the sustainable functionality of households and firms.
(b)	Industrial Development Zone	B	Energy derived from replenishable sources.
(c)	Infrastructure	C	The often-uncharted areas beyond a coastal district or a river's banks.
(d)	Telecommunications	D	A purpose-built industrial estate geared for export-orientated manufacturing industries.
(e)	Renewable energy	E	Communication over a distance by cable, telegraph, telephone or broadcasting.
		F	A natural resource that cannot be readily replaced by natural means.
		G	A system of producing a product or service from the beginning stage to the final delivery to end-users.

(5)

- 1.7.2 Discuss TWO ways in which the RBIDZ influences economic development in the King Cetshwayo District. (4)
- 1.7.3 Discuss TWO challenges that could hinder the economic development in the King Cetshwayo District. (4)
- 1.7.4 Name THREE factors that favour industrial development in the KZN region. (3)

1.8 Catchment and river management

Fact File 3: Mhlathuze River

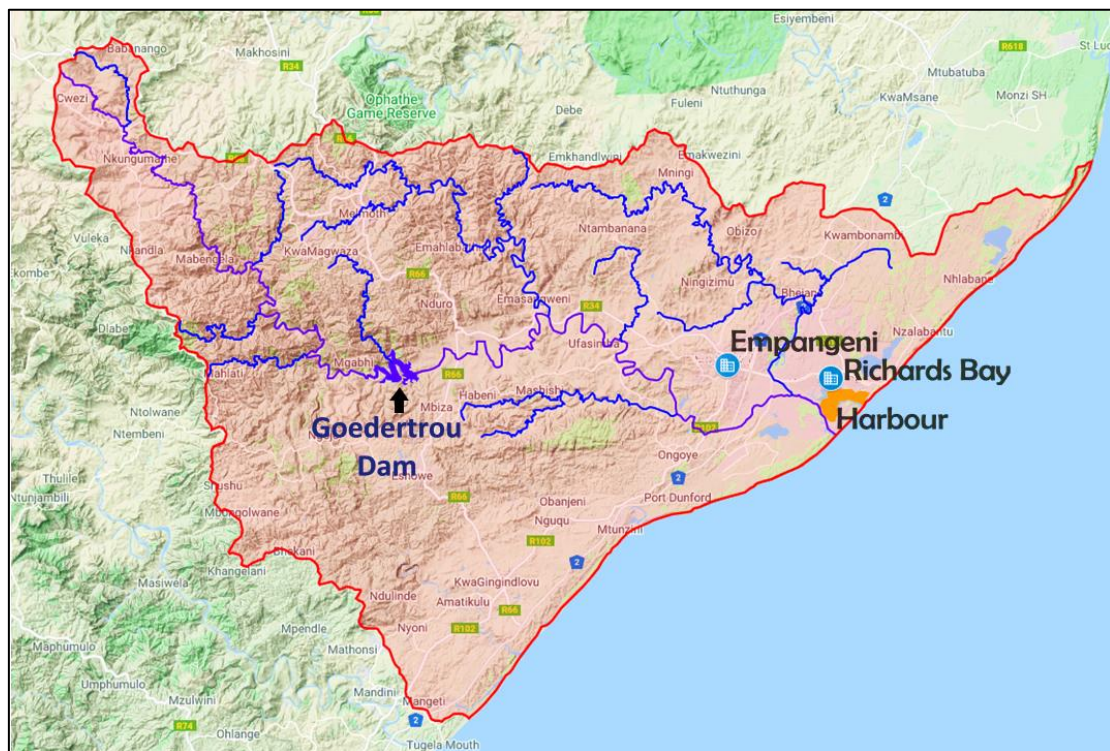
The Mhlathuze River is a river in South Africa. Located in KwaZulu-Natal, its catchment area has a surface area of 4 209 km².

The source is to the west in the Babanango Hills at an altitude of 1 519 m and the river flows over 100 km eastwards to the sea, forming an estuary. The Goedertrou Dam forms a temporary base level of erosion along the course of the river.

The deep-sea port of Richards Bay is situated at the mouth of the Mhlathuze River, and all industrial development is focused within the Empangeni-Richards Bay complex.

[Source: <en.wikipedia.org>]

Figure 6 – Mhlathuze River drainage basin



[Source: Adapted by Examiner]

1.8.1 Match the underlined terms in Fact File 3 to the definitions below. Write only the letter of the question and the correct term, e.g., (f) surface area.

- (a) Bodies of water usually found where rivers meet the sea. (1)
- (b) The area from which rainfall flows into a river system. (1)
- (c) The area where a river rises. (1)
- (d) The point where the river enters the ocean. (1)
- (e) The lower limit for an erosion process along a river course. (1)

1.8.2 Using relevant source material, write a report for the King Cetshwayo District, to outline the importance of the Mhlathuze River to the region.

- Describe the major characteristics of the Mhlathuze River, including stream order, drainage density and stream pattern.
- Discuss the importance of the river system to the people living in the area.
- Explore why managing a river system is important for socio-economic development.
- Discuss the impact, both positive and negative, that a dam has on a river system.

Note: You may draw on any examples you have studied to support your discussion. Use the rubric below to guide the planning and structure of your report.

CRITERIA	MARKS
Writing skills <ul style="list-style-type: none"> • Take into consideration structure and presentation. • Use of brief introduction and conclusion. • Logical discussion and use of sub-headings. 	4
Content knowledge <ul style="list-style-type: none"> • Correct use of geographical terminology and concepts. • Adherence to topic and sub-headings. 	12
Supporting evidence – analysis and understanding <ul style="list-style-type: none"> • The ability to analyse and evaluate the topic is assessed in this category. • Reference made to case study material/ fact file/ source material provided. • If appropriate, reference must be made to familiar/ local or other examples. 	4

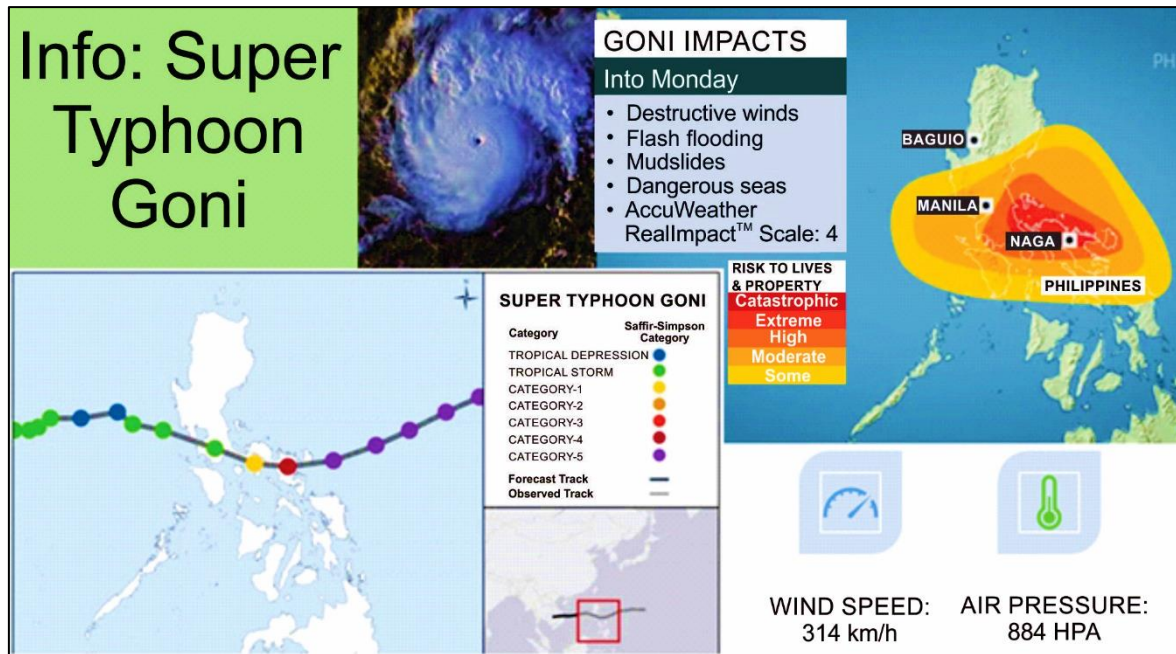
[100]

QUESTION 2 CLIMATE, WEATHER AND GEOMORPHOLOGY

2.1 Tropical cyclones

Figure 7 is an infographic providing data about super typhoon Goni.

Figure 7



[Source: <www.gccapitalideas.com> and <www.accuweather.com>]

2.1.1 Provide the correct term(s) to complete the following sentences. Write only the letter and the correct term, e.g., (d) tornado.

- (a) The centre of the typhoon is known as the ... (1)
- (b) At this point the conditions are ... (1)
- (c) The area of most destruction is known as the ... (1)

2.1.2 Explain why the city of Naga will be most severely affected. (2)

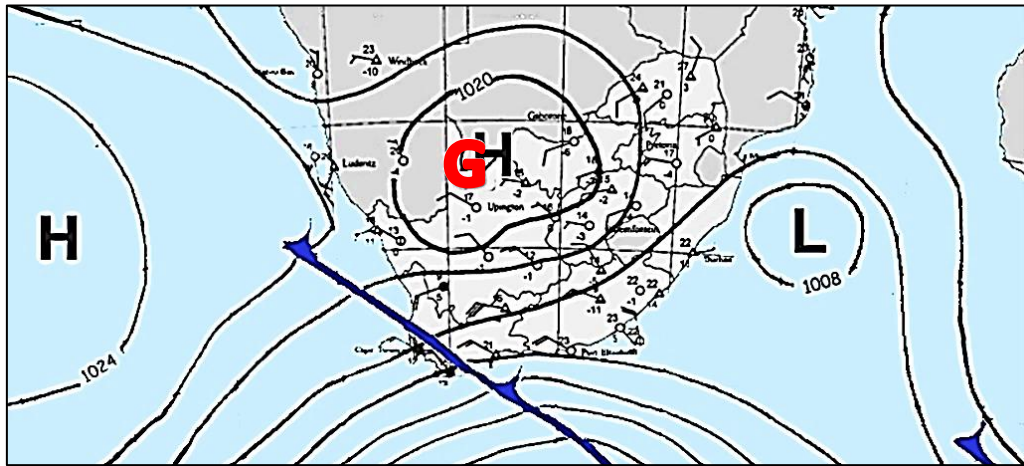
2.1.3 List THREE requirements for a typhoon to form. (3)

2.1.4 Describe TWO hazards experienced when the typhoon makes landfall. (4)

2.2 Subtropical anticyclones and associated weather conditions

Study Figure 8, a synoptic chart for a typical South African winter.

Figure 8



[Source: SAWS and adapted by Examiner]

- 2.2.1 Name anticyclone **G**. (1)
- 2.2.2 Explain why anticyclone **G** causes clear winter conditions over the interior. (2)
- 2.2.3 Draw a diagram to explain why pollution in South Africa becomes more concentrated during winter. (4)

2.3 Subtropical anticyclones and associated weather conditions

Select the bold term(s) that will make the statements TRUE. Write only the letter and the corresponding term, e.g., (g) lightning.

Line thunderstorms occur over the interior in **(a) summer / winter / autumn**. They form at a **(b) moisture / cold / warm** front that forms due to the **(c) low-pressure trough / coastal low / tropical low**. These storms are known as **(d) tropical cyclones / monsoons / line thunderstorms**. They are formed due to the meeting of warm moist air from the **(e) south-west / north-east / north** and the cool, dry air pushed inland by the **(f) South Atlantic / South Indian / Kalahari** high pressure.

(6)

2.4 Fluvial terminology

Choose a description from Column B that matches the term in Column A. Write only the letter next to the corresponding number, e.g., 2.4.0 H.

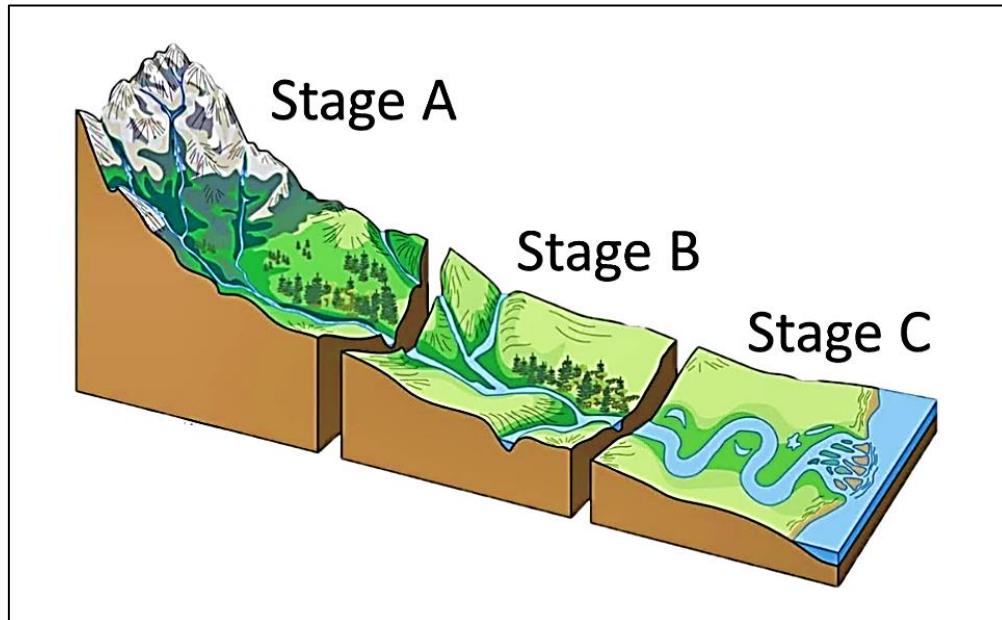
Column A		Column B	
2.4.1	Interfluve	A	A combination of direct channel precipitation and surface run-off.
2.4.2	Exotic streams	B	How fast the water is moving through a cross-section.
2.4.3	Traction	C	Develops in regions of underlying uniform layers and looks like the branching pattern of tree roots.
2.4.4	Aggradation	D	A river that originates in a humid region but flows through an arid region.
2.4.5	Overland flow	E	Groundwater seepage into the channel.
		F	The scooting and rolling of particles along a riverbed.
		G	High-lying area between tributaries.
		H	When a riverbed is raised due to the accumulation of sediment in the channel.

(5)

2.5 Fluvial processes

Figure 9 is a typical longitudinal profile of a river showing the three stages.

Figure 9



[Source: Adapted by Examiner]

Complete the table below. Write only the number and the missing term, e.g., 2.5.0 lower.

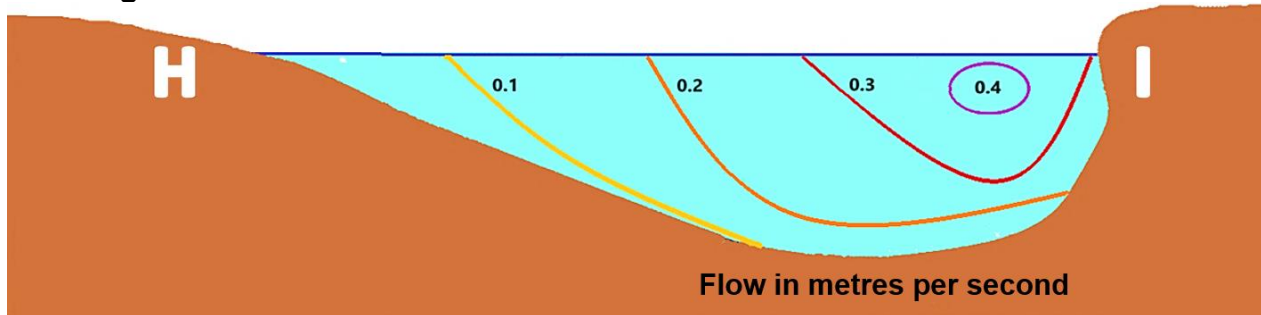
	Stage A	Stage B	Stage C
Name	Upper	2.5.1	Lower
ONE feature	2.5.2	Meander	2.5.3
Main actions (deposition, erosion or transportation)	Erosion	Erosion & deposition	2.5.4
Volume of water	Lowest	Medium	2.5.5
Number of tributaries	Most	Fewer	Fewest

(5)

2.6 Fluvial processes (continued)

Study Figure 10, the cross-section of a meander showing the different velocities across the channel.

Figure 10



[Source: Adapted by Examiner]

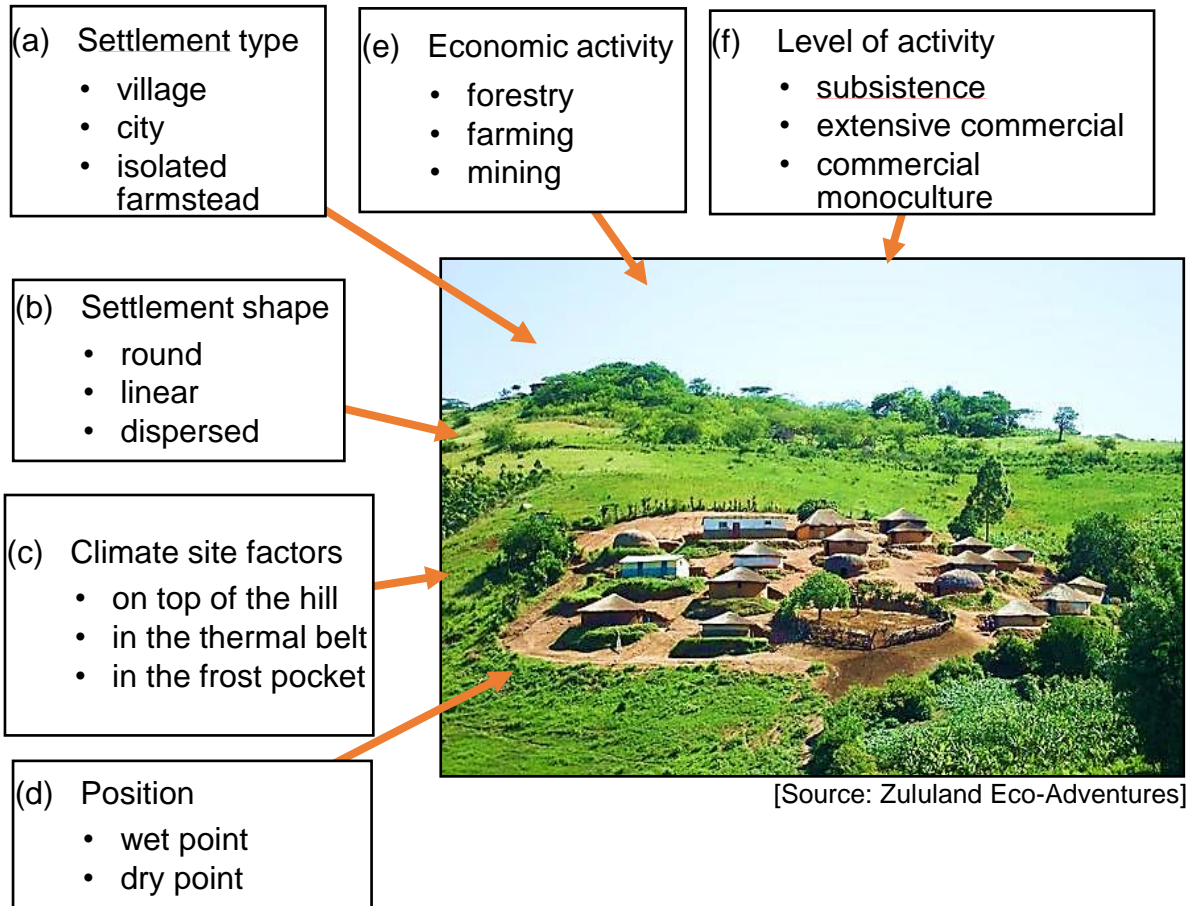
- 2.6.1 Explain the term *laminar flow*. (1)
- 2.6.2 Provide the correct unit for the *flow rate of a river*. (1)
- 2.6.3 Name the banks labelled **H** and **I**. (2)
- 2.6.4 Why does deposition occur at **H**? (2)
- 2.6.5 Name one stage in which this feature could occur. (1)
- 2.6.6 How does a river channel affect stream velocity? (2)
- 2.6.7 Why do humans modify natural river channels? (2)
- 2.6.8 Examine TWO ways in which urban development changes how rainwater moves through a drainage basin. (4)

[50]

QUESTION 3 RURAL AND URBAN SETTLEMENT AND ECONOMIC GEOGRAPHY OF SOUTH AFRICA

3.1 Rural settlement

Figure 11 – A rural settlement in KwaZulu-Natal

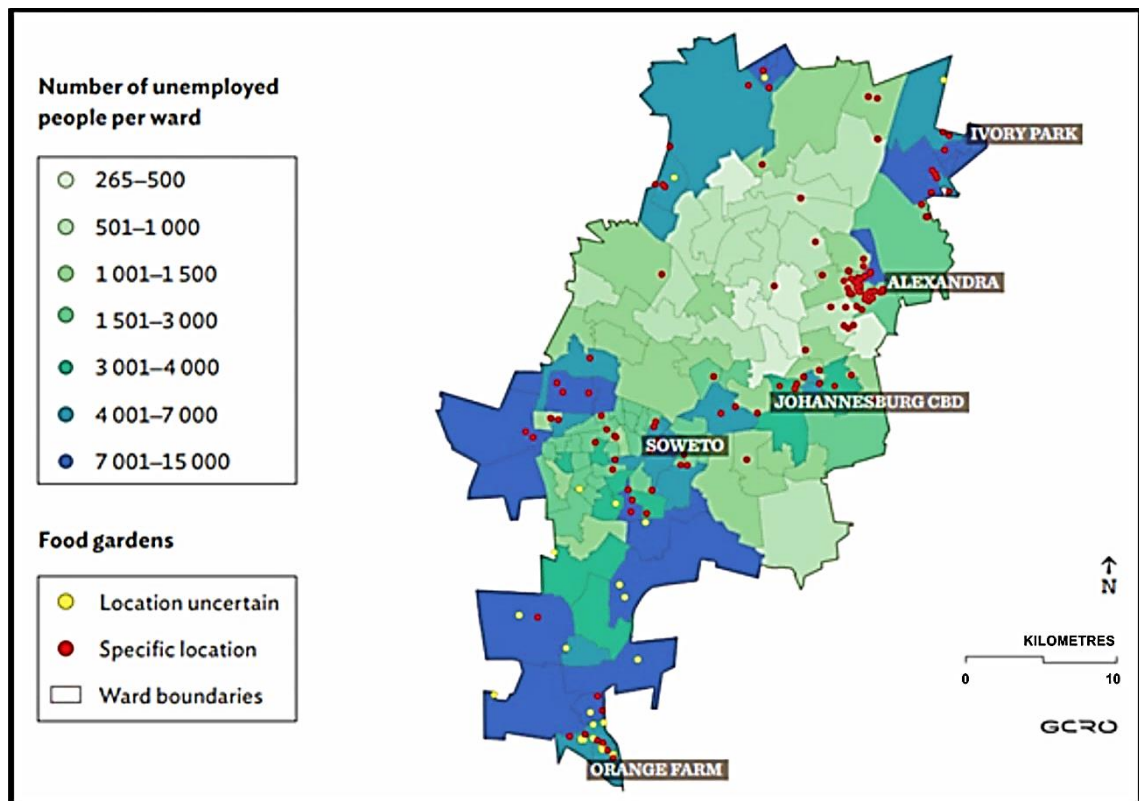


- 3.1.1 Choose **ONE** bold word from each mind map box that best describes the settlement in the photograph. Write only the letter of the question and the term, e.g., (g) megalopolis. (6)
- 3.1.2 Discuss **TWO** push factors that cause rural depopulation in this type of settlement. (4)
- 3.1.3 Discuss **TWO** ways in which rural depopulation will impact a settlement like this one. (4)

3.2 Urban settlement issues

Figure 12 shows the locations of food gardens, compared to the unemployment rate per ward, within the City of Johannesburg.

Figure 12



[Source: Gauteng City Region Observatory]

- 3.2.1 What is the link between unemployment and food gardens? (2)
- 3.2.2 Discuss TWO benefits food gardens provide in an urban area. (4)
- 3.2.3 How can urban farming improve the food security of a country? (2)
- 3.2.4 Gauteng has some of the highest levels of urbanisation.
 - (a) Explain *levels of urbanisation*. (1)
 - (b) What impact will high levels of urbanisation have on a region? (2)

3.3 Agriculture sector

Read the following fact file and answer the questions that follow.

Fact File 4: A sugar industry losing billions due to dumping

By Lloyd Phillips



Photo: Denene Erasmus

Competition from sugar that has been 'dumped' on the South African market resulted in the local primary sugar cane value chain reportedly losing just over R2,2 billion in potential revenue last year.

The recently launched Home Sweet Home campaign forms part of the goals set out in the Sugarcane Value Chain Master Plan to 2030, that was signed into being in November 2020.

[Source: <www.farmersweekly.co.za>]

- 3.3.1 Name ONE country that exports sugar to South Africa. (1)
- 3.3.2 Name TWO sugar-producing provinces in South Africa. (2)
- 3.3.3 Analyse TWO reasons to support local sugar producers. (4)
- 3.3.4 Explain TWO ways in which the government could aid the agricultural sector. (4)

3.4 Informal Sector

Read Fact File 5 about the informal sector and food security.

Fact File 5: How important is the informal sector in urban food security?

- The informal sector is crucial in giving people access to food.
- 28% of households are at risk of becoming food insecure.
- Food security is also about access to food.
- The informal sector has about 16,4% of South Africa's total employment.
- Street traders are in areas of high foot traffic.
- Spaza shops are often evenly distributed in rural areas and informal settlements.
- Supermarkets claim that due to economies of scale they will benefit the urban poor, but the evidence to support this is quite mixed.
- The National Development Plan (NDP) gives the highest priority to small businesses, projecting that the informal sector will create 1,2 to 2 million jobs by 2030.



[Source: <www.farmersweekly.co.za>, adapted by Examiner]

3.4.1 Explain the following terms:

- (a) *Economies of scale* (1)
- (b) *Food-insecure* (1)

3.4.2 Why are there many informal traders in informal settlements? (2)

3.4.3 Outline TWO differences between a *spaza shop* and a *street trader*. (4)

3.4.4 Name TWO daily struggles faced by a street trader. (2)

3.4.5 Analyse TWO ways in which the government could aid the informal sector through the NDP. (4)

[50]

Total: 200 marks