12 Geography

X-kit

Achieve!

EXAM PRACTICE BOOK

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PEARSON

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CONTENTS

HELPFUL HINTS AND TIPS FOR PAPER 1 AND PAPER 2

HOW TO APPROACH THE THEORY EXAM

1. Make sure you bring all the necessary **stationery** and equipment into the exam centre.
2. **Check** that you have received a question paper, annexure and answer booklet.
3. **Ensure** that the question paper and annexure actually have the number of pages indicated on their front covers.
4. Use the reading time (10 minutes) to **read** through the **entire** paper.
5. Go through the annexure and the question paper at the **same time**, i.e. do not read them separately.
6. Use the reading time to **decide** which three questions you will answer.
7. Answer the question that you think you will score the highest marks for **first**.
8. You may answer your three questions in any order. **Ensure** that each question is **numbered** correctly.
9. If you cannot answer a particular part of a question, **leave it out** and return to it later.
10. Use the mark allocation as a guide to the length (and detail) of your answers.
11. Allocate **50** minutes to answer each question. Move on to the next question when that time is up.
12. You will then have **30** minutes at the end to **check** your paper and complete any **unanswered** questions.

GENERAL EXAM HINTS AND TIPS

- **Identify** the key **verb** (question word) in each question (see page v for help).
- **Adhere** to the mark allocation – don't give more information than you are asked for, you only have 50 minutes per question.
- Use coloured pencils or highlighters to **underline** the most important facts in text passages or tables.
- Use **labelled sketches** wherever possible to enhance your explanations.
- **Plan** your longer paragraph-style questions – label it as **rough work**, not to be marked.
- Use **statistics** and **information** from the annexure to support your answers.
- Use **geographical terminology** wherever possible and don't generalise or use discriminatory language.
- Do not panic if the paper contains something you have never heard of or seen before. **Apply** what you do know, and remember that the source material contains plenty of clues.
- Be prepared to answer **map work** questions in the theory exam – for example, you may be expected to determine distance or direction.

HOW TO APPROACH THE MAP WORK EXAM

1. Make sure you bring all the necessary **stationery** and **equipment** into the exam centre.
2. **Check** that your question/answer booklet has the correct number of pages.
3. Ensure that you have been given the **correct** map and photograph.
4. Use the reading time to **orientate** the map and photograph, i.e. identify where the photograph 'fits' on the map.
5. If you cannot identify or find an item immediately, **don't** stress. You will probably come across it when looking for something else.
6. Do all your rough work on the page provided and **double-check** your calculations.
7. **Manage** your time carefully – you must allow for time to check your paper.

GENERAL EXAM HINTS AND TIPS

- Show all **calculations** – you will earn marks for method.
- Many of the answers can be read off directly from the map or photograph, but you will also be expected to **apply** your theoretical knowledge to the mapped area.
- Use (and state) **evidence** from the **map** in order to substantiate your answers.

SOME POINTS TO REMEMBER

- The topographic map will **always** be of an area in South Africa: co-ordinates will therefore always be S and E.
- The scale on South African topographic maps is **1 : 50 000** (1 cm on the map represents 0,5 km): measure the distance in cm and divide by 2 to get an answer in km.
- The scale on an orthophoto is **1 : 10 000** – this scale is **larger** than the topographic map scale.
- Orthophotos cover a **smaller** area than topographic maps, but show **more** detail.

EXAM TERMINOLOGY

Learners can use these explanations of 'question words' as a guideline when answering questions.

Question word	What you need to do
Analyse	Separate, examine and interpret
Calculate	This means a numerical (number) answer is required. You must show your working, especially if two or more steps are involved.
Classify	Group things based on common characteristics
Compare	Point out or show both similarities and differences between things, concepts or phenomena
Define	Give a clear meaning
Describe	State in words (using diagrams where appropriate) the main points of a structure/process/phenomenon/investigation
Determine	To calculate something, or to discover the answer by examining evidence
Differentiate	Use differences to qualify categories
Discuss	Consider all information and reach a conclusion
Explain	Make clear; interpret and spell out
Identify	Name the essential characteristics
Label	Identify on a diagram or drawing
List	Write a list of items, with no additional detail
Mention	Refer to relevant points
Name	Give the name (proper noun) of something
State/Give	Write down information without discussion
Suggest	Offer an explanation or a solution
Tabulate	Draw a table and indicate the answers as direct pairs

FORMAT OF THE FINAL GRADE 12 EXAMINATION PAPERS

NOTE: Both Paper 1 and Paper 2 are written on the same day, as the theory and map work content is integrated and inter-related, rather than separate. Concepts taught in the theory section must be applied in the map work section.

PAPER 1 (THEORY)

This is a three (3) hour paper and will be written *first* on the day of the Geography examination.

1. The paper is divided into two sections:
   - SECTION A: Climate and Weather and Geomorphology.
   - SECTION B: Settlement Geography and Economic Geography of South Africa.
2. Each of the two sections consists of two (2) questions of 75 marks each.
3. Any THREE of the four questions must be answered.
4. Each of the four questions will include the following:
   - short/objective type questions of (15 x 1) = (15).
   - two paragraph questions for eight (8) marks, that is, two questions of (4 x 2) = (8). *These questions may NOT be answered in point form and will require analytical thinking and insight.*
5. A variety of source materials will be used, e.g. satellite images, synoptic weather charts, graphs, tables, sketch maps, cartoons, photographs and newspaper articles.
6. The instructions and information will appear on the second page of the question paper. See page viii for instructions for Paper 1 and page 32 for instructions for Paper 2.

PAPER 2 (MAP WORK)

This is a one and a half (1½) hour paper and will be written *second* on the day of the Geography examination.

This question paper consists of FOUR (4) questions that are *compulsory*:

- QUESTION 1: Multiple-choice questions – 15 (single marks)
  - content cuts across the whole syllabus.
- QUESTION 2: Geographical techniques and calculations – 20 (single marks)
  - content includes cross sections and application.
- QUESTION 3: Application of theory/map and photo interpretation – 25 (single and double marks)
  - single marks for definitions and identification of features such as landforms, slopes, drainage patterns, settlement patterns, street patterns
  - double marks for providing reasons, application, interpretation, analysis and evaluation.
- QUESTION 4: Geographical information systems – 15 (single and double marks)
  - single marks for definitions
  - double marks for providing reasons, application, analysis and evaluation.

INSTRUCTIONS AND INFORMATION: PAPER 1

1. This question paper consists of FOUR questions.
2. Answer ANY THREE questions of 75 marks each.
3. For the paragraph style question you may refer to ONE idea, which you must discuss in depth OR to different ideas, which you must discuss in less depth.
4. ALL diagrams are included in the ANNEXURE.
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. Where possible, illustrate your answers with labelled diagrams.
8. Write clearly and legibly.

GEOGRAPHY	GRADE 12
PAPER 1B	TIME: 3 HOURS
MARKS: 225	ANSWERS ON PAGE 96

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SECTION A: CLIMATE AND WEATHER AND GEOMORPHOLOGY

Answer at least ONE question from this section.

QUESTION 1

1.1 Complete the following statements by choosing the correct option. Write only the letter A, B, C or D next to the corresponding question number (1.1.1–1.1.7).

1.1.1 In summer, onshore flow from the South Indian anticyclone …
- **A** is dry and hot.
- **B** is able to reach the plateau.
- **C** is from the NW.
- **D** picks up moisture as it moves over the Benguela current.

1.1.2 In the southern hemisphere, anticyclones are characterised by air that is …
- **A** descending in a clockwise direction.
- **B** ascending in a clockwise direction.
- **C** descending in an anticlockwise direction.
- **D** ascending in an anticlockwise direction.

1.1.3 Tropical cyclones are intense low pressure systems that …
- **A** develop at the equator.
- **B** rotate clockwise in the northern hemisphere.
- **C** have a warm sector and a cold sector.
- **D** dissipate over land.

1.1.4 Urban areas experience … than rural areas.
- **A** higher humidity
- **B** more rainfall
- **C** weaker convection currents
- **D** less pollution

1.1.5 The warm sector of a mid-latitude cyclone …

A is found behind the cold front.
B is found behind the warm front.
C displaces the cold air to form an occluded front.
D experiences no precipitation.

1.1.6 The Kalahari anticyclone …

A is responsible for dry conditions on the plateau during winter.
B is responsible for dry conditions on the plateau during summer.
C is situated below the level of the plateau in summer.
D is situated above the level of the plateau in winter.

1.1.7 The following are all classified as travelling disturbances associated with anticyclonic circulation except a …

A coastal low.
B moisture front.
C berg wind.
D tropical cyclone. (7 × 1) (7)

1.2 Refer to FIGURE B1.2 (page 60) when answering this question.

1.2.1 Define the term water table.

1.2.2 What do we call the water below the water table?

1.2.3 Is the water below the water table more likely a result of infiltration or evaporation?

1.2.4 Suggest an alternative term for overland flow.

1.2.5 With which season's water table does the stream in FIGURE B1.2 intersect?

1.2.6 Classify the stream in FIGURE B1.2 as either: permanent, periodic or episodic.

1.2.7 Provide a description of an exotic river.

1.2.8 Give ONE example of a South African exotic river. (8 × 1) (8)

1.3 Study the synoptic chart seen in FIGURE B1.3 (page 60), and then answer the following questions:

1.3.1 Identify the feature marked C. (1 × 1) (1)

1.3.2 Estimate the atmospheric pressure at the centre of the low pressure system marked B. (1 × 2) (2)

1.3.3 As feature C passes over an area, the wind changes direction from NW to SW. What is the term used to describe this change in wind direction? (1 × 1) (1)

1.3.4 Describe the changes in the following as feature C moves over an area:

(a) temperature

(b) atmospheric pressure

(c) precipitation (3 × 2) (6)

1.3.5 Which low pressure system (A or B) is older? Explain your answer. (1 + 2) (3)

1.4 Refer to the sketch map in FIGURE B1.4 (page 61), which shows a rural settlement in the southern hemisphere.

1.4.1 How has the positioning of the huts in this settlement taken advantage of slope aspect? (1 × 2) (2)

1.4.2 In which direction will a valley wind blow in this area? Motivate your answer. (2 + 2) (4)

1.4.3 People in this valley rely on wood as their source of fuel. Explain why on clear, windless nights the smoke from their fires appears to be trapped in the valley. (You may use a diagram to support your explanation). (4 × 2) (8)

1.4.4 Determine the altitude at which the huts are situated. (1 × 1) (1)

1.4.5 List ONE climatological advantage of the situation of the huts. (1 × 2) (2)

1.5 Refer to FIGURE B1.5 (page 61), which shows part of the Crocodile River drainage basin.

1.5.1 Calculate the stream order of the Crocodile River as it emerges through the Magaliesberg Ridge. (2 × 1) (2)

1.5.2 Name ONE other ridge seen in FIGURE B1.5. (1 × 1) (1)

1.5.3 The ridges in FIGURE B1.5 lie parallel to each other. What drainage pattern would we expect to find in a series of parallel ridges? (1 × 1) (1)

1.5.4 Explain why the Crocodile River drainage pattern does not seem to match the geology of the area. (4 × 2) (8)

1.6 Use FIGURE B1.6 (page 62) when answering the following questions:

1.6.1 Describe how the volume of a river changes from its source to its mouth. (1 × 2) (2)

1.6.2 The velocity (speed) of a river decreases between the source and the mouth. Explain why this occurs. (2 × 2) (4)

1.6.3 Name ONE fluvial landform found in each stage (A, B and C) seen in FIGURE B1.6. (3 × 1) (3)

1.6.4 Does FIGURE B1.6 show a longitudinal or transverse profile of a river? (1 × 2) (2)

1.6.5 Is the profile seen in FIGURE B1.6 graded or ungraded? Give a reason for your answer. (1 + 2) (3)

1.6.6 Identify the permanent base level and ONE temporary base level seen in FIGURE B1.6. (2 + 2) (4)

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QUESTION 2

2.1 Choose a description in COLUMN B that matches a term in COLUMN A. Write only the letter (A–H) next to the question number (2.1.1–2.1.8).

COLUMN A		COLUMN B
2.1.1	Inversion	**A** A change in temperature due to a change in height and pressure
2.1.2	Occlusion	**B** Small-scale localised climate
2.1.3	Aspect	**C** A swell of sea water onto the coastline as a tropical cyclone passes
2.1.4	Adiabatic heating	**D** When the cold air in a mid-latitude cyclone lifts the warm air completely off the ground
2.1.5	Trough	**E** Low pressure system
2.1.6	Cyclone	**F** An extended low pressure system seen on synoptic charts
2.1.7	Storm surge	**G** The direction in which a slope faces
2.1.8	Microclimate	**H** An increase in temperature with an increase in height

(8 × 1) (8)

2.2 Study the photograph in FIGURE B2.2 (page 62), showing a section of the Limpopo River, and then determine whether each of the statements below is either TRUE or FALSE. Write only T or F next to the corresponding question number (2.2.1–2.2.7).

2.2.1 A confluence is the point where one river joins another.

2.2.2 The river in FIGURE B2.2 is carrying a small load.

2.2.3 The dominant process in this part of the river seen in FIGURE B2.2 is erosion.

2.2.4 The river in FIGURE B2.2 is in the youthful stage.

2.2.5 The type of flow seen in the photograph is laminar flow.

2.2.6 The Limpopo River is an episodic river.

2.2.7 Well-developed meanders are likely to be found downstream of where this photograph was taken. (7 × 1) (7)

2.3 Refer to FIGURE B2.3 (page 62), which shows the path of tropical cyclone Irina.

2.3.1 Name TWO countries that were affected by tropical cyclone Irina. (2 × 1) (2)

2.3.2 Match each stage of a tropical cyclone given below to one of the letters A, C or D in FIGURE B2.3:

(a) mature stage

(b) degenerating stage

(c) formative stage (3 × 1) (3)

2.3.3 Suggest TWO reasons for the tropical cyclone losing strength as it passed over area B. (2 × 2) (4)

2.3.4 Discuss TWO environmental and TWO economic consequences of a tropical cyclone passing over a country. (4 × 2) (8)

2.4 The graph in FIGURE B2.4 (page 63) shows variations in pollution concentration within a city over a 24-hour period.

2.4.1 There are two peaks on the graph – state the time at which each of these occured. (2 × 1) (2)

2.4.2 Suggest TWO factors that contributed to the highest peak on the graph. (2 × 2) (4)

2.4.3 Explain how higher concentrations of pollution lead to higher temperatures and more precipitation in a city than in the surrounding rural area. (2 × 2) (4)

2.4.4 What is the name given to the feature that traps pollution over a city? (1 × 2) (2)

2.4.5 During which season are the features named in question 2.4.4 more pronounced (stronger)? (1 × 1) (1)

2.5 Refer to the article in FIGURE B2.5 (page 63) in order to answer the following questions:

2.5.1 Name the drainage pattern formed by the Olifants (Lepelle) River. (1 × 1) (1)

2.5.2 In which general direction does the Olifants (Lepelle) River flow? (1 × 1) (1)

2.5.3 Name the tributaries of the Olifants (Lepelle) River that flow past:

(a) Bronkhorstspruit

(b) Marble Hall (2 × 1) (2)

2.5.4 According to the article, who or what is responsible for the contamination of the river? (4 × 1) (4)

2.5.5 Explain how these contaminants could affect food production. (2 × 2) (4)

2.5.6 Suggest possible reasons why human health would be more severely affected by the contaminated water in rural as opposed to urban areas. (2 × 2) (4)

2.5.7 Outline the possible economic effects if the quality of the water in this river system continues to decline. (4 × 2) (8)

2.5.8 *'The quality of the water in Delmas is better than that found in Marulaneng (Hoedspruit).'* Justify this statement. (2 × 2) (4)

2.5.9 Why can the condition of the Olifants (Lepelle) River be regarded as an international issue? (1 × 2) (2)

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SECTION B: RURAL AND URBAN SETTLEMENTS AND ECONOMIC GEOGRAPHY OF SOUTH AFRICA

Answer at least ONE question from this section.

QUESTION 3

3.1 Study the sketch in FIGURE B3.1 (page 64) and then determine whether each of the statements below is either TRUE or FALSE. Write only T or F next to the corresponding question number (3.1.1–3.1.7).

3.1.1 B is a crossroads settlement.

3.1.2 A is a central place.

3.1.3 D is a hamlet.

3.1.4 G has the largest sphere of influence.

3.1.5 H is a trade and transport town.

3.1.6 F is an urban settlement.

3.1.7 C is a dry point settlement. (7 × 1) (7)

3.2 Study FIGURE B3.2 (page 64), which is a table showing the contribution of various economic sectors to South Africa's GDP (R million) between 1952 and 2012.

3.2.1 What is the overall trend seen in the table?

3.2.2 State which sector contributed the least to GDP in 1952.

3.2.3 Name the sector that contributed the least to GDP in 2012.

3.2.4 Which sector contributed the most to GDP in 1972?

3.2.5 How much more did the construction sector contribute to GDP in 1992 than in 1952?

3.2.6 In which year did the primary sector contribute more to GDP than the secondary sector?

3.2.7 Calculate the total contribution to GDP of the tertiary sector in 2012.

3.2.8 Provide ONE example of a quaternary activity. (8 × 1) (8)

3.3 Read the newspaper extract in FIGURE B3.3 (page 65) and then answer the following questions:

3.3.1 Who used to live in the 'apartheid-era' hostels? (1 × 2) (2)

3.3.2 Describe TWO of the social benefits and ONE environmental benefit of this hostel transformation project. (3 × 2) (6)

3.3.3 Explain how this programme supports the City's densification policy. (1 × 2) (2)

3.3.4 Why is it necessary for the city to have a densification policy? (1 × 2) (2)

3.3.5 This hostel transformation programme addresses the lack of housing in urban areas. List TWO other issues that the city experiences due to rapid urbanisation. (2 × 1) (2)

3.4 Refer to the photograph in FIGURE B3.4 (page 65) and then answer the following questions:

3.4.1 Abandoned buildings such as the one seen in the photograph in FIGURE B3.4 are an indication that rural depopulation is occurring in an area. Define the term rural depopulation. (1 × 2) (2)

3.4.2 Write a paragraph in which you outline TWO causes of rural depopulation and TWO consequences of rural depopulation. (4 × 2) (8)

3.4.3 Suggest THREE strategies that could be employed to prevent or reverse rural depopulation. (3 × 2) (6)

3.5 Read the article in FIGURE B3.5 (page 66) and then answer the following questions:

3.5.1 Describe TWO characteristics of small-scale farming in South Africa. (2 × 2) (4)

3.5.2 Explain the statement *'agriculture is a job driver'.* (2 × 2) (4)

3.5.3 Discuss how Fetsa Tlala will *'unlock the economies of rural areas'.* (4 × 2) (8)

3.5.4 Suggest how Fetsa Tlala can address food insecurity in South Africa. (2 × 2) (4)

3.6 The following questions refer to the Durban-Pinetown industrial complex.

3.6.1 Suggest how relief and climate have influenced industrial development on the east coast of KwaZulu-Natal. (2 × 2) (4)

3.6.2 Name ONE bridge industry in this industrial area. (1 × 2) (2)

3.6.3 Name ONE raw-material-orientated industry in this area. (1 × 2) (2)

3.6.4 Provide the name of TWO SDIs planned in KZN to stimulate industrial development outside of this core industrial complex. (2 × 1) (2)

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QUESTION 4

4.1 Choose a description in COLUMN B that matches a term in COLUMN A. Write only the letter (A–H) next to the question number (4.1.1–4.1.8).

COLUMN A		COLUMN B
4.1.1	Homelands	A The modernisation and improvement of old houses close to the city centre
4.1.2	Situation	B Land that is not individually owned
4.1.3	Threshold population	C A sprawling urban area consisting of conurbations that have joined together
4.1.4	Megalopolis	D A town that develops at the intersection of transport routes
4.1.5	Gentrification	E A way of travelling that preserves the natural environment and supports local communities
4.1.6	Communal land ownership	F The relationship between a settlement and its surrounding environment
4.1.7	Ecotourism	G Demarcated areas set aside for black people during the apartheid era
4.1.8	Junction	H The minimum number of customers required for a business to make a profit

(8 × 1) (8)

4.2 Match each of the following minerals or agricultural products to ONE of the letters (A–G) on the map seen in FIGURE B4.2 (page 67). Write only the question number and the corresponding letter.

4.2.1 Deciduous fruit

4.2.2 Coal

4.2.3 Sheep

4.2.4 Maize

4.2.5 Gold

4.2.6 Platinum

4.2.7 Sugar cane (7 × 1) (7)

4.3 Refer to FIGURE B4.3 (page 67) when answering these questions:

4.3.1 Which ONE feature seen in FIGURE B4.3 would not appear on the modern American-Western land use model? (2 × 1) (2)

4.3.2 How would the location of the high-income residential area differ on a Third World city land use model? (1 × 2) (2)

4.3.3 Provide a suitable name for the zone shaded in grey surrounding the CBD in FIGURE B4.3. (1 × 1) (1)

4.3.4 Discuss TWO reasons why functions may relocate from the CBD to the OBD seen in FIGURE B4.3. (2 × 2) (4)

4.3.5 Explain the location of the informal settlements in FIGURE B4.3. (2 × 2) (4)

4.3.6 List TWO functions, besides the golf course, that may be found in the rural-urban fringe. (2 × 1) (2)

4.4 Study FIGURE B4.4 (page 68), which is a topographic map extract of the Tulbagh area in the Western Cape. Before you answer the questions, identify the farm Olyfboom (block C2) and the built-up area of Tulbagh (block B6).

4.4.1 Classify both Olyfboom and Tulbagh according to their size. (2 × 1) (2)

4.4.2 Name THREE factors the owner of Olyfboom would have considered before settling on this site. (3 × 1) (3)

4.4.3 Tulbagh provides the people at Olyfboom and the surrounding farms with urban services. List TWO of these. (2 × 1) (2)

4.4.4 Write a paragraph in which you evaluate how Tulbagh could use tourism to stimulate the local economy. (4 × 2) (8)

4.5 Refer to FIGURE B4.5 (page 68) to help you answer the questions below about SDIs. SDIs are development strategies aimed at initiating and supporting economic development in the undeveloped areas of South Africa that have demonstrated potential for growth.

4.5.1 Provide TWO reasons for large parts of South Africa being economically undeveloped. (2 × 2) (4)

4.5.2 A major part of SDI programmes is the improvement of transport infrastructure. List THREE other areas or sectors in which economic development can be initiated and supported. (Hint: your answer must include one primary, one secondary and one tertiary activity.) (3 × 1) (3)

4.5.3 Name the SDI seen in FIGURE B4.5. (1 × 1) (1)

4.5.4 Name the improved transport infrastructure that is visible in FIGURE B4.5. (1 × 1) (1)

4.5.5 Why can it be said that this SDI generates international benefits? (1 × 2) (2)

4.5.6 Name the SDI that will involve co-operation between Namibia, Botswana, South Africa and Mozambique. (1 × 1) (1)

4.6 Study the graphs in FIGURE B4.6 (page 69) in order to answer these questions:

4.6.1 Which category employs the most people in the formal and informal sector of the economy? (2 × 1) (2)

4.6.2 'Mining and quarrying' and 'Electricity, gas and water supply' are not reflected in the graph for the informal sector. Suggest a possible reason for this. (1 × 2) (2)

4.6.3 According to FIGURE B4.6, how many South Africans worked in the informal sector during 2013? (1 × 1) (1)

4.6.4 Suggest an occupation in each of the following categories within the informal sector:

(a) manufacturing

(b) transport, storage and communication

(c) personal services (3 × 1) (3)

4.6.5 Tabulate FOUR differences between the formal and informal sectors in South Africa. (4 × 2) (8)

4.6.6 Suggest ONE barrier to entry into the formal economic sector. (1 × 2) (2)

[75]

ANNEXURE: PAPER 1B

FIGURE B1.2: THE WATER TABLE

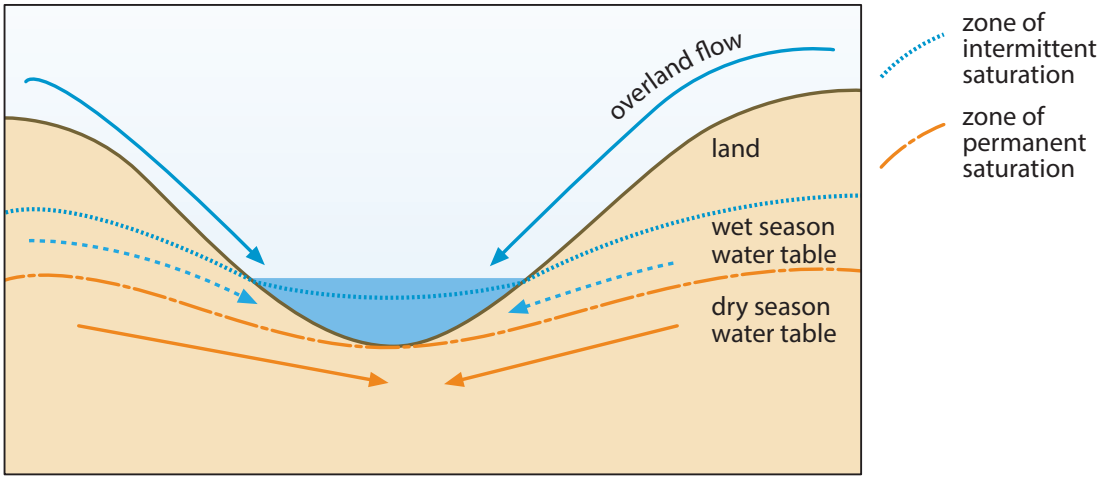
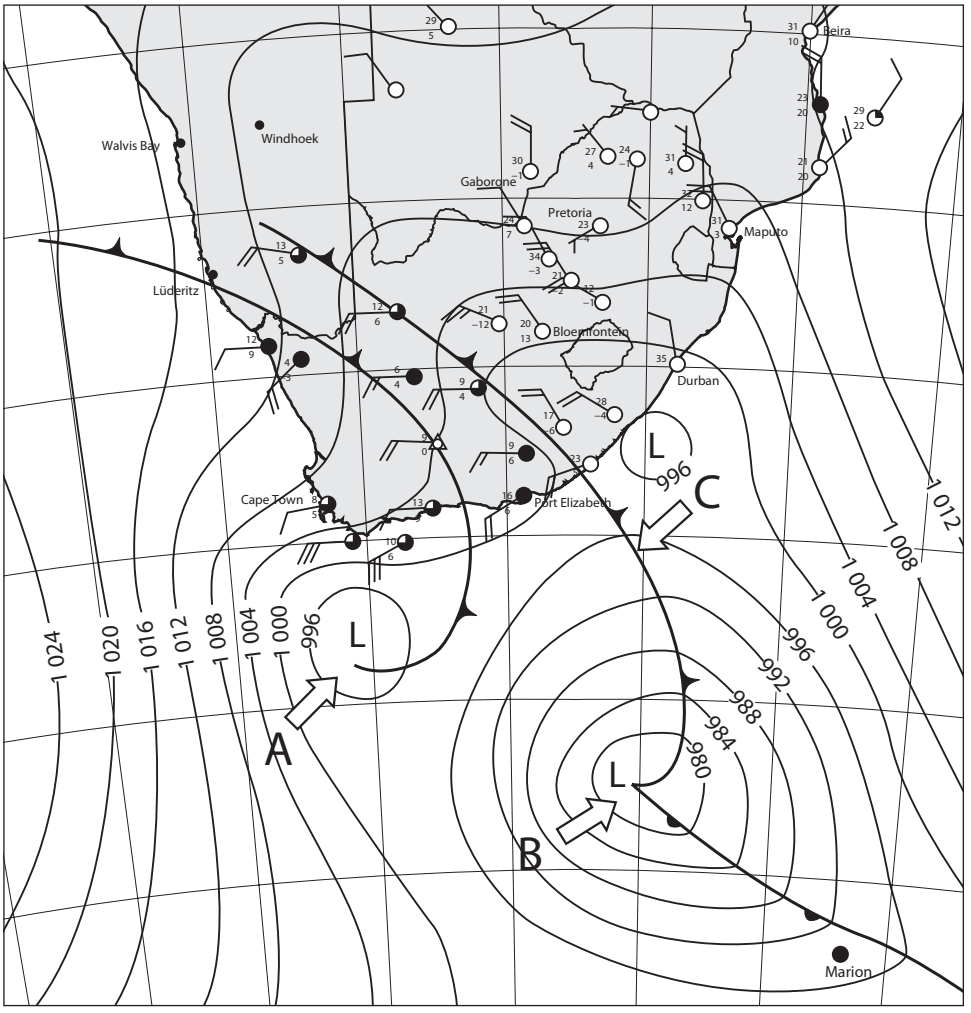
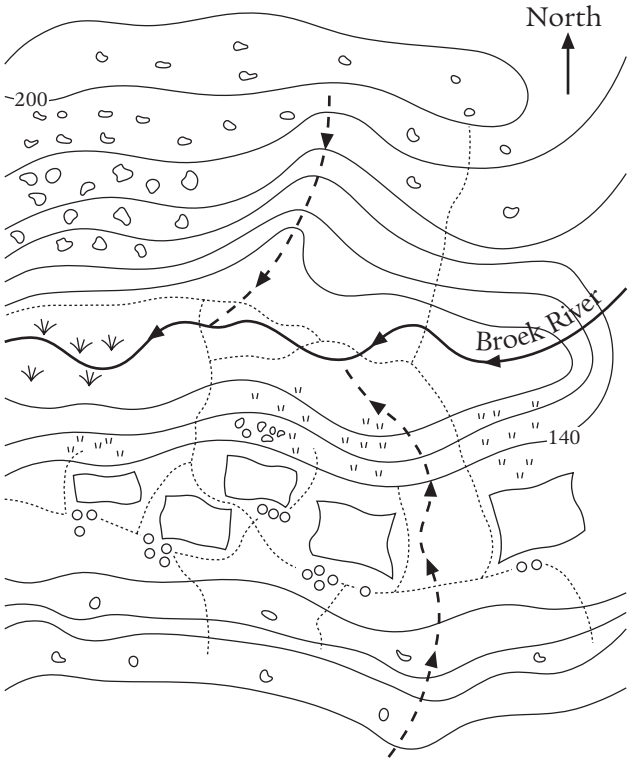


FIGURE B1.3: SYNOPTIC CHART



Source: South African Weather Service

FIGURE B1.4: VALLEY CLIMATES



References

River

Contours 140

Bush/Trees

Cultivated lands

Huts

Cattle pens

Paths

0 100 m

Scale

FIGURE B1.5: CROCODILE RIVER

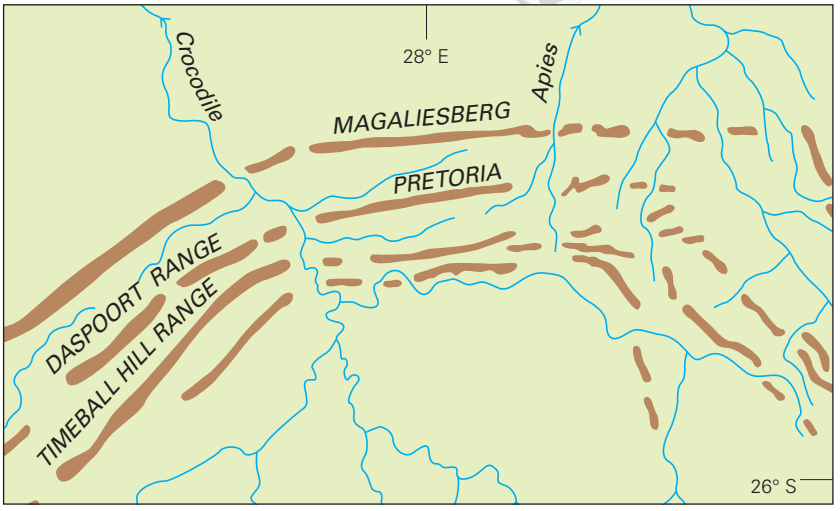


FIGURE B1.6: RIVER PROFILE

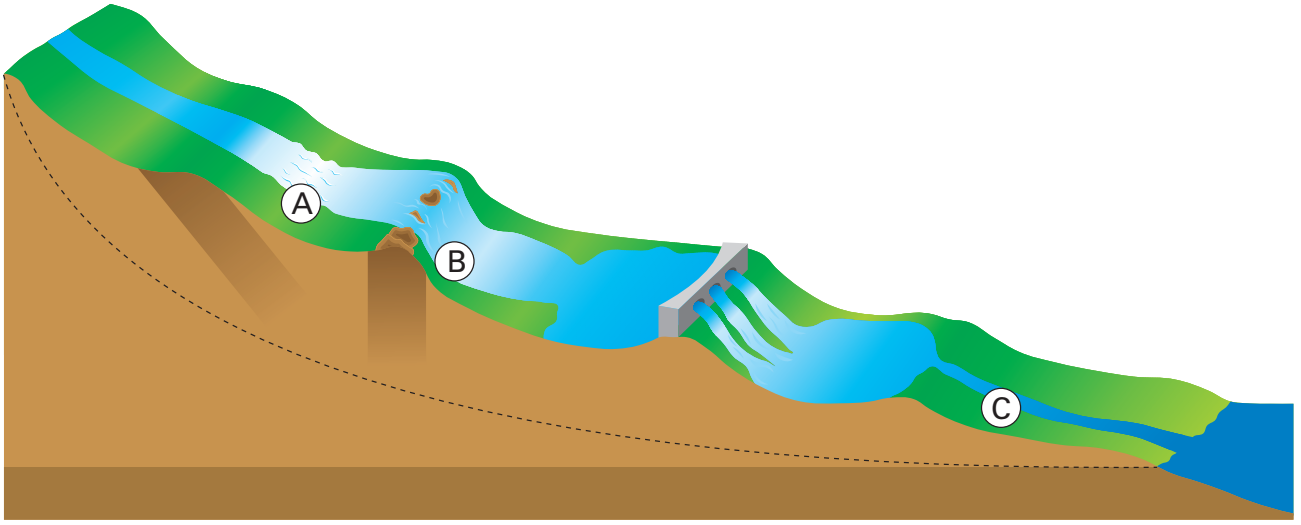


FIGURE B2.2: THE LIMPOPO RIVER AND ONE OF ITS TRIBUTARIES

FIGURE B2.3: PATH OF TROPICAL CYCLONE IRINA

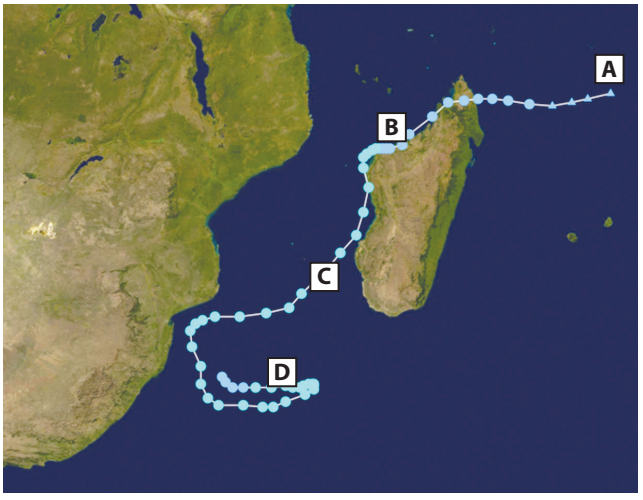


FIGURE B2.4: URBAN POLLUTION CONCENTRATION LEVELS

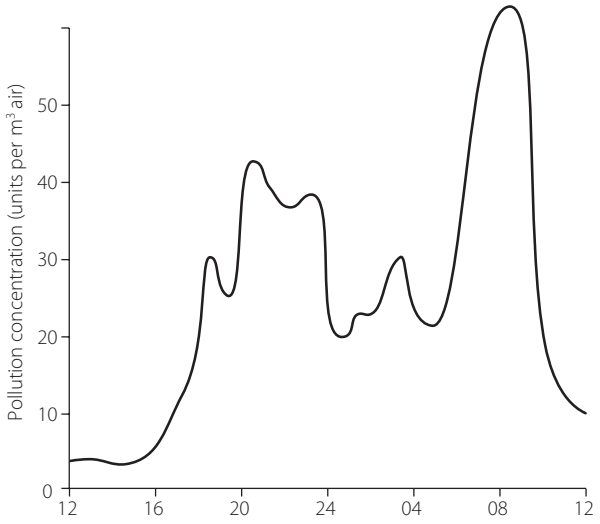


FIGURE B2.5: OLIFANTS RIVER POLLUTED

OLIFANTS RIVER POLLUTED

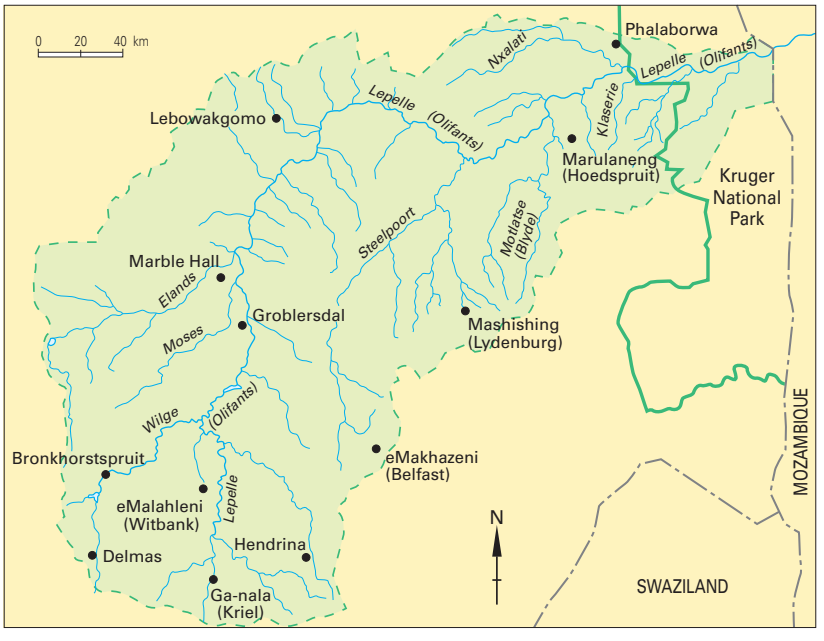
2013-05-28

Johannesburg – Contaminants in the catchment area of the Olifants River pose a serious risk to South Africa's food production, agricultural exports, and human health, *Beeld* reported on Tuesday.

Around 30 scientists from the Council for Scientific and Industrial Research (CSIR), the Universities of Pretoria and Stellenbosch, the Water Affairs department, and the Mpumalanga Parks and Tourism Agency co-operated to produce the Upper Olifants River Study, the most comprehensive report to date on the catchment area and the Loskop Dam.

Project leader and CSIR aquatic scientist Dr Paul Oberholster found that the water in the Olifants River catchment area was so polluted that it held serious health risks for consumers.

The river had been polluted by, among others, sewage, acid mine water, industrial refuse, weed killer and insecticides.



Adapted from: www.news24.com

FIGURE B3.1: TYPES OF SETTLEMENTS

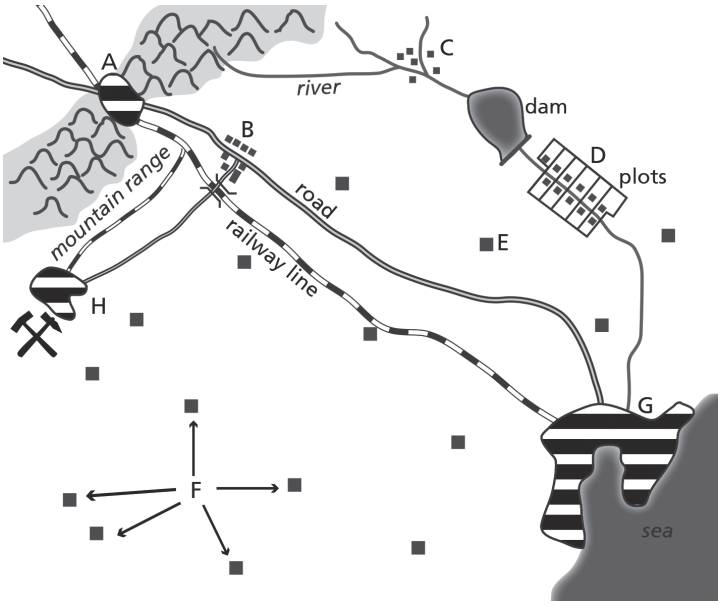


FIGURE B3.2: ECONOMIC SECTORS

Economic sector	1952	1972	1992	2012
Agriculture, forestry and fishing	429	1 147	13 056	72 731
Mining and quarrying	339	1 321	26 575	262 678
Manufacturing	562	3 207	75 102	351 087
Electricity, gas, water supply	50	394	12 479	79 103
Construction	112	744	10 979	112 631
Wholesale and retail trade, hotels and restaurants	401	2 051	49 279	452 717
Transport, storage, communication	273	1 375	31 634	257 687
Finance and real-estate and business services	291	2 199	53 256	608 533
General government services	237	1 617	54 516	469 785
Community, social and personal services	242	984	16 671	168 135

Source: Stats SA

FIGURE B3.3: URBAN DEVELOPMENT

NEW APARTMENTS FOR LANGA TENANTS

Construction of 463 rental apartments in Langa, part of the first phase of the City's hostel transformation programme, has begun.

The first 463 apartments will be built over the next two years, with the remaining 837 units planned for completion within five years.

Approximately 1 300 families – 5 200 people – will move from apartheid-era hostels into secure two-bedroomed apartments with kitchenettes, toilets, showers and solar-heated water systems, wash lines and play areas for the children.

Identifying beneficiaries

The first beneficiaries will be hostel tenants in New Flats and Special Quarters, and residents of Siyahlala informal settlement. A project steering committee will assist in identifying beneficiaries.

The City's overall hostel transformation programme consists of an estimated 15 000 units that will eventually be built in Langa, Gugulethu and Nyanga.

In keeping with the City's densification policy – designed to maximise the efficiency of services with existing infrastructure – the apartments will be developed in three-storey and four-storey blocks.

R170 million has been allocated for the construction of the first units in Langa. The entire programme will cost approximately R5,6 billion, excluding the cost of the land.

Source: CITYNEWS, October 2013

FIGURE B3.4: RURAL DEPOPULATION

FIGURE B3.5

SA SMALL-SCALE FARMERS TAKE ON HUNGER

Nthambeleni Gabara

25 October 2013

The government has set aside R2 billion to support the Fetsa Tlala (End Hunger) programme. Fetsa Tlala seeks to promote self-sufficiency by helping communities to produce food – including maize, beans, wheat, sunflowers, ground nuts and potatoes – on communal and under-used land.

The initiative aims to help small-scale and smallholder farmers put one million hectares of land that has been lying fallow under production over the next five years, as well as to help small businesses process the crops once they have been harvested.

At the launch of the programme, President Zuma said that Fetsa Tlala also aimed to shift perceptions about the importance of agriculture and farming in general, noting that agriculture was one of six job drivers – along with mining, tourism, the green economy, manufacturing and infrastructure development – identified in the government's New Growth Path.

Encouraging people to go back to farming

'We are encouraging people to go back to farming. We are encouraging every household to develop a food garden. We want to see women's co-operatives and community groupings focusing on vegetable production, livestock or chickens to earn a living and fight hunger and poverty.'

Zuma said that, while South Africa's overall food insecurity figure was declining, there were still families that lived in poverty.

Support, markets for small-scale farmers

Agriculture, Forestry and Fisheries Minister Tina Joemat-Pettersson is positive about the programme. 'This is no dream; it is already happening on the ground, where thousands of hectares have been successfully placed under production – some for consumption, and some for sale, stimulating local economies.

'Government runs hospitals ... we have the South African National Defense Force, school feeding schemes, and prisons. Smallholder farmers and producers should have a market in these organisations,' she said.

'Government should be buying food straight from our smallholders and creating viable markets for them. This is what Fetsa Tlala is about. It is about unlocking the economies of rural areas.'

Source: http://www.southafrica.info

FIGURE B4.2: PRIMARY ACTIVITIES IN SOUTH AFRICA

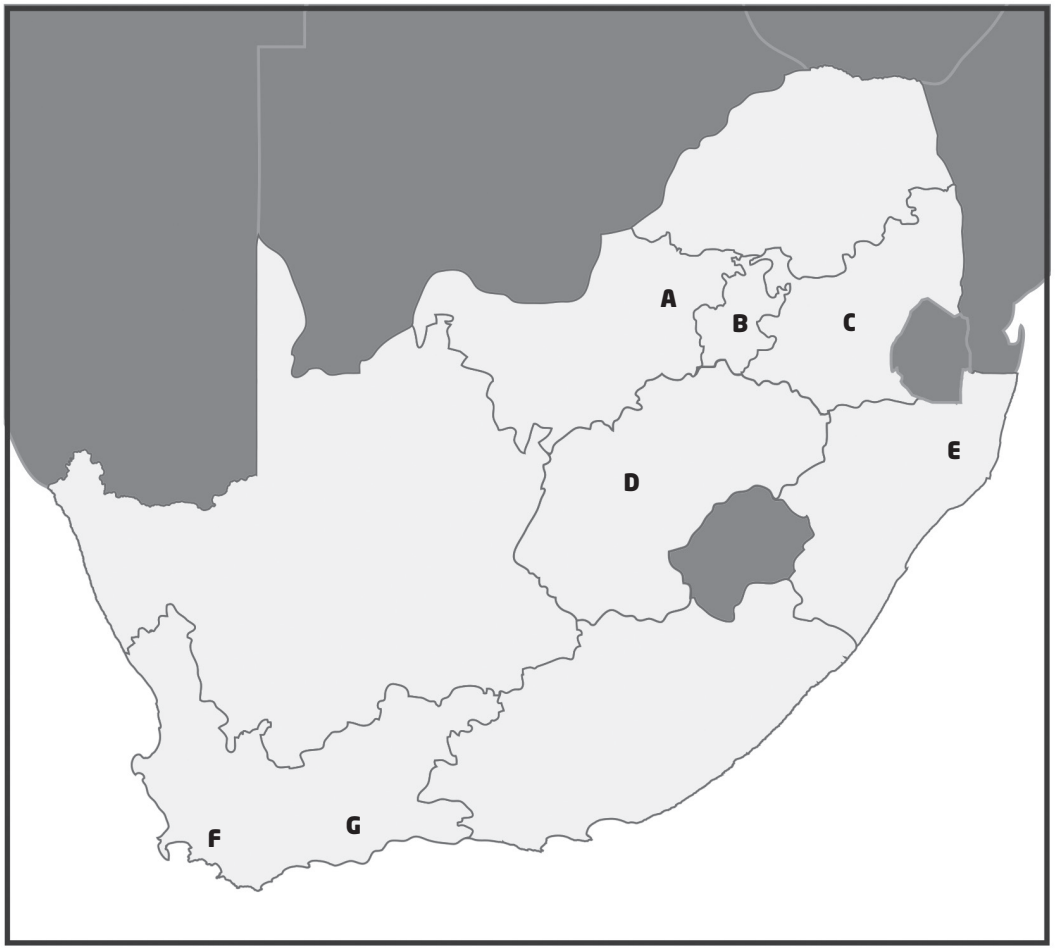


FIGURE B4.3: SOUTH AFRICAN URBAN LAND USE MODEL

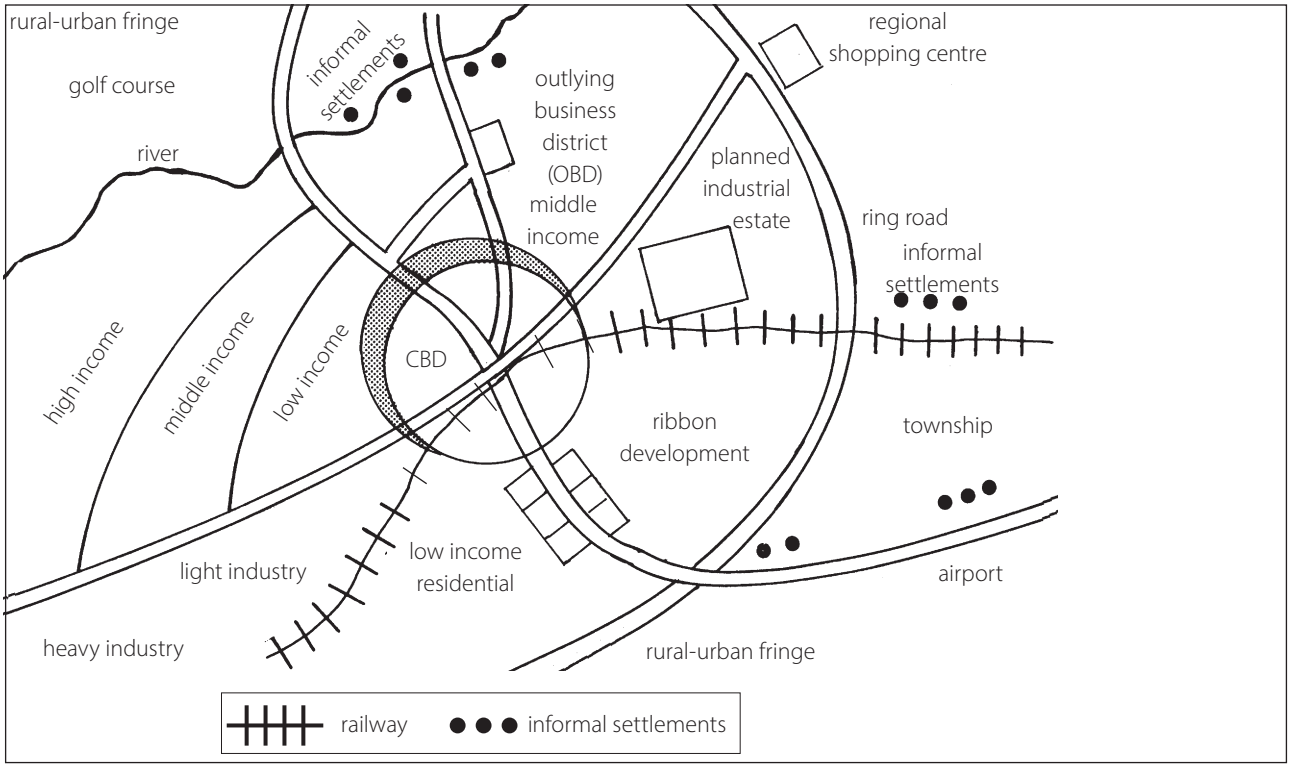
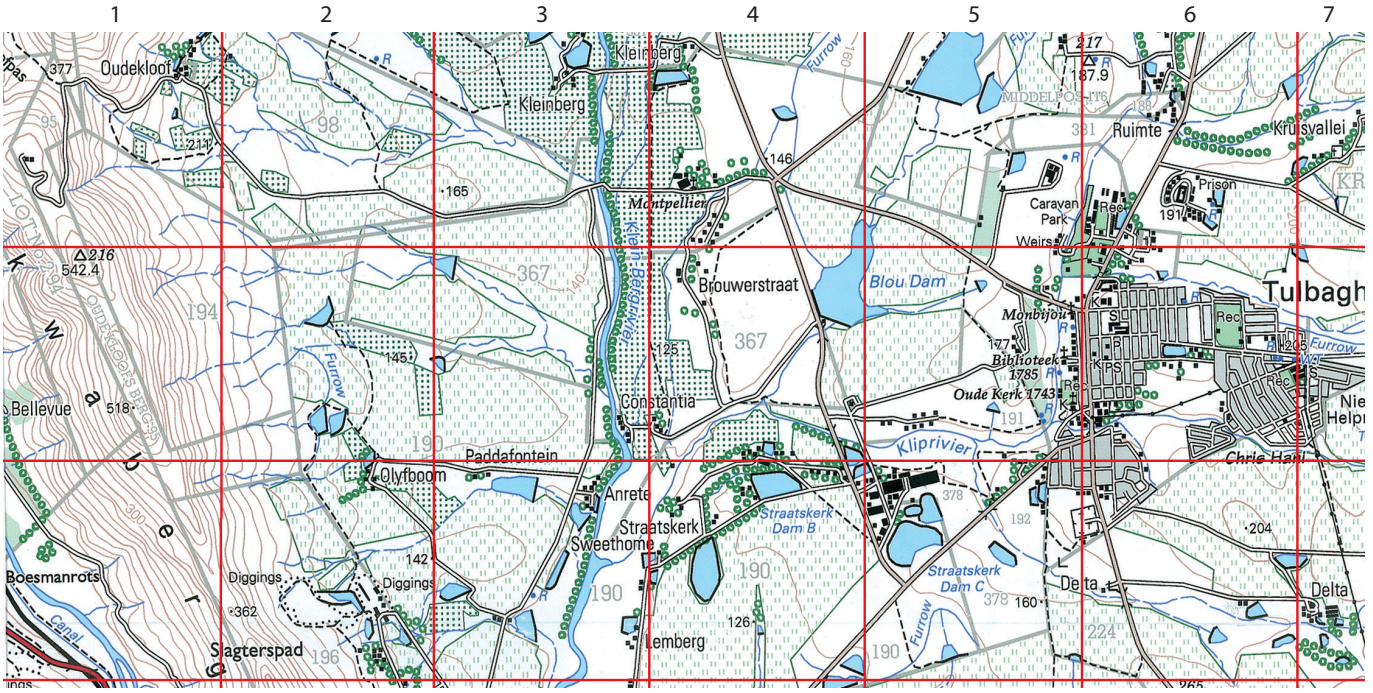


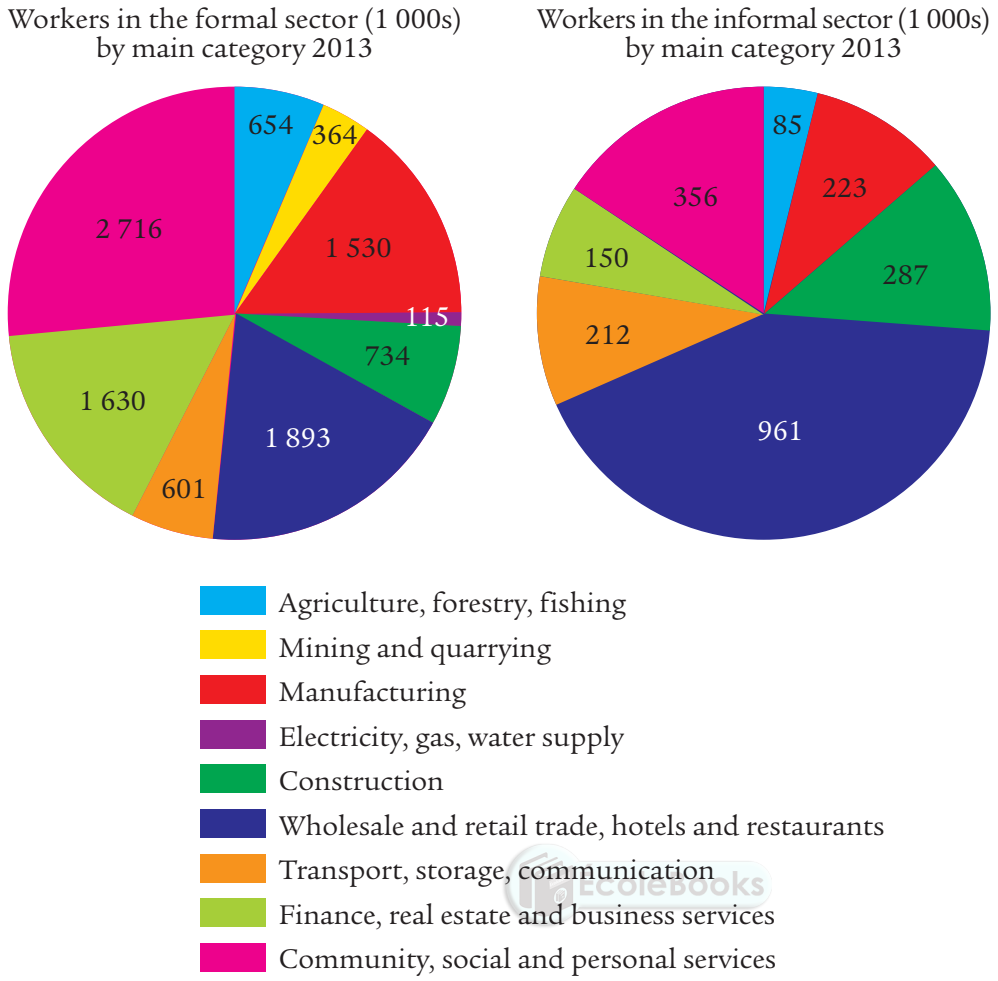
FIGURE B4.4: RURAL SETTLEMENTS



Source: Chief Directorate: National Geo-spatial Information and State Copyright

FIGURE B4.5: SPATIAL DEVELOPMENT INITIATIVES

FIGURE B4.6: EMPLOYMENT IN SOUTH AFRICA 2013



Source: Stats SA

MEMORANDUM: PAPER 1B

SECTION A: QUESTION 1

1.1.1 B ✓
1.1.2 C ✓
1.1.3 D ✓
1.1.4 B ✓
1.1.5 B ✓
1.1.6 A ✓
1.1.7 D ✓ (7 × 1) (7)

1.2.1 The highest level of water underground ✓
1.2.2 Groundwater ✓
1.2.3 Infiltration ✓
1.2.4 Surface runoff ✓
1.2.5 Wet season ✓
1.2.6 Periodic ✓
1.2.7 A river with its source in a high rainfall region that flows through a low rainfall region ✓
1.2.8 Orange ✓ (8 × 1) (8)

1.3.1 Cold front ✓ (1 × 1) (1)
1.3.2 977–979 hPa ✓✓ (1 × 2) (2)
1.3.3 Backing ✓ (1 × 1) (1)
1.3.4 **(a)** Temperature: drops ✓✓
(b) Atmospheric pressure: increases ✓✓
(c) Precipitation: decreases ✓✓ (3 × 2) (6)
1.3.5 B ✓ Mid-latitude cyclones form at the polar front and travel from west to east. B is further east than A, it is therefore older. ✓✓ (1 + 2) (3)
1.4.1 The huts are on the north-facing slope ✓✓ (1 × 2) (2)
1.4.2 East ✓✓ Valley winds blow up the length of the valley – the river is flowing west, altitude therefore increases to the east. ✓✓ (2 + 2) (4)
1.4.3 At night the crests of the hills cool down rapidly. ✓✓
The air in contact with the crests cools and sinks down the slope under the influence of gravity. ✓✓
This cold air displaces the still warmer air at the base of the valley. ✓✓
The displaced warmer air forms an inversion layer that prevents the smoke from escaping. ✓✓ (4 × 2) (8)
1.4.4 145–155 m (1 × 1) (1)
1.4.5 The huts are midway up the slope in the thermal belt where temperatures are warmer at night. ✓✓ (1 × 2) (2)
1.5.1 Third order ✓✓ (2 × 1) (2)
1.5.2 Daspoort ✓ OR Timeball ✓ (1 × 1) (1)
1.5.3 Trellis ✓ (1 × 1) (1)
1.5.4 Dendritic drainage patterns usually form on rock that is of equal resistance. ✓✓
Crocodile River displays a superimposed drainage pattern. ✓✓
The uniform rock layer was eroded and older, more resistant rock became exposed, creating a series of ridges. ✓✓
Despite the ridges being more resistant to erosion, the Crocodile River maintained its original course and cut gorges through them. ✓✓ (4 × 2) (8)

1.6.1 Volume is small at the source and great at the mouth ✓✓ (1 × 2) (2)

1.6.2 The river slows down between the source and the mouth because the load increases ✓✓ and the gradient decreases. ✓✓ (2 × 2) (4)

1.6.3 A: interlocking spurs ✓rapids✓ waterfall ✓ gorges ✓ [Any ONE]
B: meanders ✓ alluvial fan ✓ [Any ONE]
C: meanders ✓ox-bow lakes ✓ levees ✓ braided streams ✓ floodplain ✓ delta ✓ [Any ONE] (3 × 1) (3)

1.6.4 Longitudinal ✓✓ (1 × 2) (2)

1.6.5 Ungraded ✓ It does not have a single smooth concave shape from source to mouth – it has many small concave sections. ✓✓ (1 + 2) (3)

1.6.6 Permanent base level: the sea ✓✓
Temporary base level: waterfall ✓✓ dam ✓✓ lake ✓✓ [Any ONE] (2 + 2) (4)

[75]

QUESTION 2

2.1.1 H ✓
2.1.2 D ✓
2.1.3 G ✓
2.1.4 A ✓
2.1.5 F ✓
2.1.6 E ✓
2.1.7 C ✓
2.1.8 B ✓ (8 × 1) (8)
2.2.1 T ✓
2.2.2 F ✓
2.2.3 F ✓
2.2.4 F ✓
2.2.5 T ✓
2.2.6 F ✓
2.2.7 T ✓ (7 × 1) (7)

2.3.1 Madagascar ✓ Mozambique ✓ South Africa ✓ [Any TWO] (2 × 1) (2)

2.3.2 **(a)** Mature stage: C ✓
(b) Degenerating stage: D ✓
(c) Formative stage: A ✓ (3 × 1) (3)

2.3.3 Increased friction over land ✓✓
Loss of energy supply (warm water) ✓✓ (2 × 2) (4)

2.3.4 Environmental:
Flooding at the coast: excessive rain from the passing tropical cyclone and potentially again when swollen rivers enter the sea ✓✓
Excessive rain leads to loss of top soil from increased runoff ✓✓
Freshwater ecosystems may be damaged by salt water storm surges ✓✓
Salt water may damage and change soil characteristics ✓✓
Changes to the shape of the coastline due to unusual erosion ✓✓
[Any TWO]

Economic:
Loss of income from crop and livestock losses ✓✓
Loss of income if businesses need to shut down for repairs ✓✓
Repairing infrastructure is expensive (roads, bridges, communication networks, electricity networks) ✓✓
Purifying water that is contaminated by salt water or other debris ✓✓
Insurance claims for damaged homes and businesses ✓✓
Rebuilding and repairing community structures (schools, recreation areas) ✓✓
Trade may be interrupted if harbours are damaged ✓✓
[Any TWO] (4 × 2) (8)

2.4.1 08h00 ✓ 20h00 ✓ (2 × 1) (2)

2.4.2 Morning rush hour – many vehicles on the road, increased carbon emissions ✓✓
Industries lighting furnaces ✓✓
Fires in informal settlements ✓✓
[Any TWO] (2 × 2) (4)

2.4.3 Higher temperatures: pollutants absorb both terrestrial and solar radiation. ✓✓
More precipitation: pollutants act as hygroscopic nuclei, increasing condensation. ✓✓ (2 × 2) (4)

2.4.4 Pollution dome ✓✓ (1 × 2) (2)

2.4.5 Winter ✓ (1 × 1) (1)

2.5.1 Dendritic ✓ (1 × 1) (1)

2.5.2 Northeast ✓ (1 × 1) (1)

2.5.3 **(a)** Wilge ✓
(b) Elands ✓ (2 × 1) (2)

2.5.4 Sewage ✓ acid mine drainage ✓ industrial refuse ✓ weed killer ✓ insecticides ✓
[Any FOUR] (4 × 1) (4)

2.5.5 If contaminated water is used to irrigate crops, crops may be poisoned. ✓✓
Soil may become infertile and crop production will decline. ✓✓ (2 × 2) (4)

2.5.6 Water is purified in urban areas. ✓✓
Urban areas rely less directly on rivers as they receive piped water and sanitation services. ✓✓
People in rural areas may rely on the river for drinking water. ✓✓
If the water is contaminated, crops may become poisoned. ✓✓
Lack of sanitation services in rural areas means people in these areas may add to the toxic load of the river. ✓✓
Poverty in rural areas may prevent people obtaining medical attention. ✓✓
Basic health services may not be available. ✓✓
[Any TWO] (2 × 2) (4)

2.5.7 Loss of income for farmers ✓✓
Increase in food prices due to lower supply ✓✓
Less foreign exchange earned from agricultural exports ✓✓
Increased personal health costs ✓✓
Increased health costs for the state ✓✓
Increased expenditure to purify water/rectify water quality ✓✓
[Any FOUR] (4 × 2) (8)

2.5.8 Delmas is situated at the outer edge of the river basin. ✓✓
The river has not yet been contaminated by domestic, industrial, mining and agricultural waste. ✓✓ (2 × 2) (4)

2.5.9 It flows into Mozambique – a decrease in water quality or quantity in South Africa will have a ripple effect in Mozambique. ✓✓ (1 × 2) (2)

[75]

SECTION B: QUESTION 3

3.1.1 F ✓
3.1.2 T ✓
3.1.3 T ✓
3.1.4 T ✓
3.1.5 F ✓
3.1.6 F ✓
3.1.7 F ✓ (7 × 1) (7)
3.2.1 An increase in contribution to GDP between 1952 and 2012 ✓
3.2.2 Electricity, gas, water supply ✓
3.2.3 Agriculture, forestry and fishing ✓
3.2.4 Manufacturing ✓
3.2.5 R10 867 million ✓
3.2.6 1952 ✓
3.2.7 R1 956 857 million ✓
3.2.8 Any intellectual property or ICT activity ✓ (8 × 1) (8)
3.3.1 Male migrant workers (non-white) ✓✓ (1 × 2) (2)
3.3.2 Social benefits:
Planned permanent structures ✓✓
Family orientated (two bedrooms, playground) ✓✓
Families will be reunited ✓✓
Water and electricity services ✓✓
[Any TWO]
Environmental benefit: solar-heated water systems ✓✓ (3 × 2) (6)
3.3.3 Maximum use of space – the units will be built in three- and four-storey blocks ✓✓ (1 × 2) (2)
3.3.4 Rapid urbanisation has led to housing shortages. ✓✓
Land use must be intensified – many homes per unit area – to provide homes for as many people as possible. ✓✓
[Any ONE valid reason] (1 × 2) (2)
3.3.5 Congestion ✓
Poor service delivery ✓
Overutilised infrastructure (water and electricity systems) ✓
Overcrowded schools and hospitals ✓
Pollution ✓
Crime ✓
Urban decay (slum development) ✓
[Any TWO] (2 × 1) (2)
3.4.1 The decrease in rural population caused either by people leaving the area or a declining birth rate ✓✓ (1 × 2) (2)
3.4.2 Causes of rural depopulation:
Unemployment due to mechanisation or farm closures ✓✓
Failed harvests due to drought/pests ✓✓

Stock losses due to disease ✓✓
Health and education services inadequate ✓✓
Lack of entertainment services ✓✓
Lack of recreation facilities ✓✓
Poor transport and communication infrastructure ✓✓
Security risks (crime) ✓✓
[Any TWO valid suggestions with brief explanation]
Consequences of rural depopulation:
Ageing population cannot work the land ✓✓
Food production drops due to fewer labourers ✓✓
School and clinic closures due to decreasing demand ✓✓
Luxury urban services (restaurants and hair salons) close down due to too few patrons ✓✓
Unemployment increases as services close down ✓✓
People are forced to travel greater distances to obtain urban services ✓✓
Abandoned buildings, development of a ghost town ✓✓
[Any TWO valid suggestions with brief explanation] (4 × 2) (8)

3.4.3 Provide urban services in rural areas ✓✓
Expand employment opportunities beyond agriculture ✓✓
Establish agro-processing industries in the area ✓✓
Improve transport and communications infrastructure ✓✓
Encourage commercial farming through mentorship programmes ✓✓
Train subsistence farmers in modern farming techniques ✓✓
Develop site-specific programmes for rural areas and include the residents in development planning ✓✓
Develop cultural, adventure and ecotourism potential in the area ✓✓
[Any THREE suggestions] (3 × 2) (6)

3.5.1 Mixed, subsistence farming ✓✓
Small plots of land ✓✓
Traditional farming methods ✓✓
Small yields ✓✓
Labour intensive ✓✓
Lack of capital ✓✓
[Any TWO] (2 × 2) (4)

3.5.2 Agriculture is the base for many types of employment. ✓✓
Working on the farm itself or in related industries, i.e. processing or sales and service occupations involving food and beverages ✓✓ (2 × 2) (4)

3.5.3 Increased production will create a surplus available for sale. ✓✓
Processing of produce adds value and increases profits. ✓✓
Processing plants provide employment. ✓✓
Increased income means local services will be supported. ✓✓
Increased food security leads to better health and therefore greater productivity and possibly higher wages. ✓✓
Commercial farming provides a more steady income. ✓✓
Linkages to government institutions ensures a reliable market. ✓✓
[Any FOUR appropriate suggestions] (4 × 2) (8)

3.5.4 Land that has been under-used or lying fallow will be placed under production, increasing the amount of food available in an area. ✓✓
People will be taught to produce food for themselves and for sale. ✓✓
Income from sales will enable people to buy food they do not grow themselves and therefore have a more varied diet. ✓✓
Small processing businesses will be initiated and supported, employees will be able to afford to feed themselves and their families. ✓✓
[Any TWO] (2 × 2) (4)

3.6.1 Relief: the flat coastal plain makes construction of industries and storage facilities relatively easy. ✓✓
Climate: ample rainfall ensures a steady water supply. ✓✓ (2 × 2) (4)

3.6.2 Car assembly ✓✓
Tyre making ✓✓
Food packaging ✓✓
Oil refinery ✓✓
[Any ONE] (1 × 2) (2)

3.6.3 Sugar refinery ✓✓ (1 × 2) (2)

3.6.4 Richards Bay SDI ✓ Lubombo SDI ✓ (2 × 1) (2)

[75]

QUESTION 4

4.1.1 G ✓
4.1.2 F ✓
4.1.3 H ✓
4.1.4 C ✓
4.1.5 A ✓
4.1.6 B ✓
4.1.7 E ✓
4.1.8 D ✓ (8 × 1) (8)

4.2.1 F ✓
4.2.2 C ✓
4.2.3 G ✓
4.2.4 D ✓
4.2.5 B ✓
4.2.6 A ✓
4.2.7 E ✓ (7 × 1) (7)

4.3.1 Informal settlements ✓✓ (2 × 1) (2)

4.3.2 High-income residential areas would be close to the city centre ✓✓ (1 × 2) (2)

4.3.3 Transition zone/zone of decay ✓ (1 × 1) (1)

4.3.4 Congestion ✓✓
High rentals ✓✓
Crime ✓✓
Pollution ✓✓
Urban blight/decay ✓✓
Lack of customers ✓✓
[Any TWO] (2 × 2) (4)

4.3.5 On the outskirts of the city where vacant land is available ✓✓
Close to transport routes (roads and rail) for easy access to the city and potential employment opportunities ✓✓
Close to rivers for access to water ✓✓
[Any TWO with brief explanation] (2 × 2) (4)

4.3.6 Nurseries ✓ smallholdings ✓ airports ✓ industrial estates ✓ eco-estates ✓ sewage farms ✓ power station ✓ cemetery ✓ [Any TWO] (2 × 1) (2)

4.4.1 Olyfboom: isolated farmstead ✓
Tulbagh: village/small town ✓ (2 × 1) (2)

4.4.2 Soil fertility ✓
Water availability ✓
Drainage ✓
Topography ✓
Microclimate ✓
Access to transport and communication networks ✓
Distance to market ✓
[Any THREE] (3 × 1) (3)

4.4.3 School ✓ church ✓ police station ✓ [Any TWO] (2 × 1) (2)

4.4.4 Great potential for tourism and therefore stimulating the economy:
Cultural tourism: visit old buildings (Biblioteek, Oude Kerk) ✓✓
Farms: working visits or tours, restaurants, B&Bs, conference facilities, team-building events, beauty spas ✓✓
Ecotourism: hiking, camping ✓✓
Weekend breaks: caravan park, B&Bs ✓✓
Special events: music festivals, harvesting festivals, sports events, water-based events on the dams ✓✓ (4 × 2) (8)
[Any FOUR suitable suggestions]

4.5.1 Homelands were neglected during the apartheid era. These areas are still socially and economically under-developed. ✓✓
Industrial (and therefore economic) development is concentrated into four core regions. ✓✓
New industries prefer to be located where infrastructure is already in place (agglomeration). ✓✓
Lack of capital and foreign investment ✓✓
[Any TWO] (2 × 2) (4)

4.5.2 Agriculture, fishing or forestry ✓
Manufacturing ✓
Tourism ✓
[ONE primary, ONE secondary and ONE tertiary activity] (3 × 1) (3)

4.5.3 Maputo Development Corridor ✓ (1 × 1) (1)

4.5.4 N4 ✓ (1 × 1) (1)

4.5.5 It is a partnership between South Africa and Mozambique ✓✓ (1 × 2) (2)

4.5.6 Coast-to-Coast SDI/Trans-Kalahari Transport Corridor ✓ (1 × 1) (1)

4.6.1 Formal: community, social and personal services ✓
Informal: wholesale and retail trade, hotels and restaurants ✓ (1 × 2) (2)

4.6.2 These are usually government-run/-owned services that are carefully legislated and they require large amounts of capital or specialised skills and training ✓✓ (1 × 2) (2)

4.6.3 2 274 000 ✓ (1 × 1) (1)

4.6.4 **(a)** Clothing ✓shoes ✓ toys✓ baking✓ brewing ✓ carpentry ✓ [Any ONE]
(b) Taxi driver ✓ renting out space for storage ✓ cell phone hiring/repair ✓ [Any ONE]
(c) Shoe repair ✓ tailoring ✓ hairdresser/barber ✓ child care ✓ housekeeping ✓ building/painting/ tiling ✓ [Any ONE] (3 × 1) (3)

4.6.5

Formal sector	Informal sector
Mixed types of employment ✓	Self-employed ✓
Set business hours ✓	Flexi-time ✓
Taxable income ✓	Not taxed ✓
Job security (permanent) ✓	Temporary job ✓
Health and pension benefits ✓	No additional benefits
Regular income ✓	Irregular income ✓
Regulated by labour laws ✓	Unregulated ✓
Safe environment with storage areas, ✓ safe for money, ✓ kitchens ✓and bathrooms, ✓ waiting rooms ✓	Insecure environment sometimes exposed to the elements, ✓ no storage areas, ✓ no or limited access to kitchens ✓ or bathrooms ✓ or waiting rooms ✓

[Any FOUR differences] (4 × 2) (8)

4.6.6 Education ✓✓ (1 × 2) (2)

[75]

GRAND TOTAL: 225