KWAZULU-NATAL PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

GEOGRAPHY P2

PREPARATORY EXAMINATION

SEPTEMBER 2021

MARKS: 150

TIME: 3 hours

This question paper consists of 11 pages.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of THREE questions:

   SECTION A

   QUESTION : 1 RURAL AND URBAN SETTLEMENTS (60 MARKS)

   QUESTION : 2 ECONOMIC GEOGRAPHY OF SOUTH AFRICA (60 MARKS)

   SECTION B

   QUESTION : 3 MAP SKILLS AND CALCULATIONS (30 MARKS)

2. Answer ALL THREE questions in the answer book provided.
3. ALL diagrams are included in the ANNEXURE.
4. Leave a line open between subsections of questions answered.
5. Start EACH question at the top of a NEW page.
6. Number your answers correctly according to the numbering system used in this question paper.
7. Do NOT write in the margins of your ANSWER BOOK.
8. Where possible, illustrate your answers with labelled diagrams.
9. Write clearly and legibly.
10. You may use a magnifying glass.
11. The unit of measurement must be given in the final answer, where applicable, e.g. 10km, 4°C, east.

SECTION B

QUESTION : 3 MAP SKILLS AND CALCULATIONS (30 MARKS)

INSTRUCTIONS AND INFORMATION

1. You are provided with a 1:50 000 topographical map (2527 CA RUSTENBURG (WEST) and an orthophoto map (2527 CA 15 TLHABANE) of a part of the mapped area.

2. You must hand the topographical map and the orthophoto map to the invigilator at the end of this examination session.

3. Show ALL calculations and formulae, where applicable. Marks will be allocated for these.

4. Indicate the unit of measurement in the final answer of calculations.

5. You may use a non-programmable calculator.

6. The following English terms and their Afrikaans translations are shown on the topographical map:

ENGLISH	AFRIKAANS
Aerodome	Vliegveld
Caravan Park	Karavaanpark
Diggings	Uitgrawings
Golf Course	Gholfbaan
Gap	Poort
Holiday Resort	Vakansieoord
Island	Eiland
Purification Plant	Watersuiweringsaanleg
River	Rivier
Sewage Works	Rioolwerke

SECTION A:

QUESTION 1: RURAL AND URBAN SETTLEMENTS

1.1 Refer to settlements **A - G** in FIGURE 1.1 found in the southern hemisphere. Indicate the settlement to which each of the following descriptions refer. Write only the letter (**A – G**) next to the question number (1.1.1 – 1.1.7) in the ANSWER BOOK. Example, 1.1.8. **H**. You may use a letter **ONCE ONLY.**

1.1.1 The smallest type of rural settlement.

1.1.2 Settlement that can be classified as a dry point settlement.

1.1.3 This settlement takes a linear shape.

1.1.4 Has functions such as school, shops, place of worship.

1.1.5 Settlement that can be classified as a wet point settlement.

1.1.6 The main function of this settlement is to attract holiday makers.

1.1.7 This settlement that is found on a slope receiving direct sunlight.

(7 x 1) (7)

1.2 Choose the correct word(s) from those given in brackets. Write only the correct word(s) next to the question number (1.2.1 – 1.2.8) in the ANSWER BOOK. Example 1.2.9 urban blight

1.2.1 A mixture of functions such as factories, shops, places of entertainment is found in the (transition/industrial) zone.

1.2.2 (Urban growth/Urbanisation) refers to the increase in the percentage of people living in urban areas.

1.2.3 The largest urban settlement in South Africa is a (megalopolis/ conurbation).

1.2.4 A metropolitan area will have a (higher/lower) sphere of influence than a town.

1.2.5 Goods bought frequently are classified as (high/low) order goods.

1.2.6 Poor service delivery is an example of (economic/social) injustice.

1.2.7 (Urban morphology/Urban decay) refers to the form and shape of a city.

1.2.8 The grid iron street pattern is (easier/more difficult) to navigate than the unplanned irregular street pattern.

(8 x 1) (8)

1.3 Refer to FIGURE 1.3 a case study on rural urban migration.

1.3.1 Refer to the graph showing the percentage of people below the poverty lines.

(a) Approximately how many percent of migrants were uplifted out of poverty. (1 x 1) (1)

(b) Explain how migration has uplifted migrants out of poverty. (1 x 2) (2)

1.3.2 Explain social challenges that people migrating to the urban areas may experience. (2 x 2) (4)

1.3.3 In a paragraph of approximately EIGHT lines, explain how speeding up the process of land reform could reduce rural depopulation. (4 x 2) (8)

1.4 Study FIGURE 1.4 showing urban land use.

1.4.1 Give ONE visible characteristic of the CBD. (1 x 1) (1)

1.4.2 Describe the difference in land values between the CBD and the rural-urban fringe. (1 x 2) (2)

1.4.3 Explain TWO factors that could have influenced the location of the regional shopping centre. (2 x 2) (4)

1.4.4 Assess the negative impact that the cement factory would have on the environment. (2 x 2) (4)

1.4.5 Discuss the role of the Green Belt in a sustainable development of the city. (2 x 2) (4)

1.5 Study the photo in FIGURE **1.5 A** showing traffic congestion and a graph showing peak hour traffic in FIGURE **1.5 B**

1.5.1 Define the concept *traffic congestion*. (1 x 2) (2)

1.5.2 Refer to the graph in FIGURE **1.5 B**

(a) State the time in the afternoon when the traffic is at its peak. (1 x 1)(1)

(b) Explain possible reasons for congestion at this time. (2 x 2) (4)

1.5.3 Discuss the impact that traffic congestion would have on drivers. (2 x 2) (4)

1.5.4 Recommend possible strategies that can be put in place to reduce the number of vehicles entering the city. (2 x 2) (4)

[60]

QUESTION 2: ECONOMIC GEOGRAPHY OF SOUTH AFRICA

2.1 Choose a term from COLUMN B that matches the description in COLUMN A. Write only the letter (A–I) next to the question number (2.1.1–2.1.8) in the ANSWER BOOK, for example 2.1.9 J.

COLUMN A		COLUMN B	
2.1.1	Type of economic activity where a service is rendered	A	gross national product
		B	trade
2.1.2	Total value of goods and services produced in a country, by citizens and non-citizens over a period of a year	C	tertiary activities
		D	local trade
2.1.3	Trade is equal and in good faith between consumers and economically disadvantaged producers	E	quaternary economic activities
		F	fair trade
2.1.4	Import and export relations between two countries	G	gross domestic product
2.1.5	The total value of goods and services produced in a country by the permanent inhabitants in one year	H	international trade
		I	secondary economic activities
2.1.6	Trade conducted inside of a country's borders		
2.1.7	Economic activities that are concerned with scientific research and the collecting and processing of information		
2.1.8	Exchange of goods and services among countries across national borders		

(8 x 1) (8)

2.2 Give ONE word/term for each of the following descriptions by choosing a word/ term from the list below. Write only the word/term next to the question number (2.2.1–2.2.7) in the ANSWER BOOK, for example 2.2.8 Ubiquitous industries

Industrial decentralization, Market orientated industries,
Bridge industries, Industrial centralization, Spatial
Development Initiative, Footloose industries, Border industries
Raw material orientated industries

2.2.1 Industries using heavy, bulky or perishable raw materials are situated closest to the source of supply.

2.2.2 The located of Industries in the periphery or rural areas away from core areas.

2.2.3 Industries that need to be closer to the customers.

2.2.4 Industries that can be located in any place without being affected by factors such as resources or transport.

2.2.5 Movement of industries to core areas.

2.2.6 These industries are located between the source of raw material and the market.

2.2.7 Strategy aimed at developing and improving existing transport infrastructure. (7 x 1) (7)

2.3 Refer to the extract in FIGURE 2.3 on food security in South Africa.

2.3.1 Give ONE environmental factor, from the article, that is responsible for the high food prices in South Africa. (1 x 1) (1)

2.3.2 State how this environmental factor, mentioned in QUESTION 2.3.1, impacted on food prices. (1 x 1) (1)

2.3.3 Give the percentage of the South African population that is food insecure. (1 x 1) (1)

2.3.4 Discuss any TWO factors that negatively impact food secutiry in South Africa. (2 x 2) (4)

2.3.5 Write a paragraph of approximately EIGHT lines in which you propose sustainable measures that can be put in place to improve food security in South Africa. (4 x 2) (8)

2.4 Refer to the photo in FIGURE 2.4 showing an informal sector activity.

2.4.1 Define the concept *informal sector*. (1 x 2) (2)

2.4.2 State the percentage by which the informal sector is growing in South Africa. (1 x 1) (1)

2.4.3 Explain TWO reasons for high informal sector employment in South Africa. (2 x 2) (4)

2.4.4 Discuss TWO challenges facing South Africa's informal sector. (2 x 2) (4)

2.4.5 Suggest TWO reasons why the City Council finds it is necessary for informal traders to have trading licenses. (2 x 2) (4)

2.5 Refer to the map and extract on the Saldanha Bay IDZ.

2.5.1 In which province is the Saldanha Bay IDZ situated? (1 x 1) (1)

2.5.2 Name ONE project each from the extract that will be centred in a secondary and tertiary economic activity. (2 x 1) (2)

2.5.3 Explain how new-build port infrastructure facilities will increase investment in the Saldanha Bay region. (2 x 2) (4)

2.5.4 Explain how the new investments in the Saldanha Bay will benefit the local people. (2 x 2) (4)

2.5.5 Evaluate the negative impact that this zinc smelter project mentioned in the extract may have on the environment around Saldanha Bay. (2 x 2) (4)

[60]

SECTION B: MAP SKILLS AND CALCULATIONS

QUESTION 3

The questions below are based on the GENERAL INFORMATION OF RUSTENBURG (FUGURE 3), 1:50 000 topographic map (2527CA RUSTENBURG WEST) as well as the orthophoto map (2527 CA 15 TLHABANE) as part of the mapped area.

3.1 MAPWORK TECHNIQUES AND CALCULATIONS

3.1.1 (a) Various options are provided as possible answers to the following question. Choose the answer and write only the letter (A–D)

The length of the area demarcated in red on the topographic map is … km.

A 4.65
B 3.95
C 9.3
D 7.9 (1 x 1) (1)

(b) With the aid of your answer to QUESTION 3.1.1 (a), calculate the area of the orthophoto map, in km, as demarcated in red on the topographic map.

Formula: Area = Length (L) x Breadth (B) (3 x 1) (3)

(c) By how many times is the scale of the orthophoto map larger than the topographic map? (1 x 1) (1)

3.1.2 Refer to the spot height 1216 in block **I3** and trigonometrical station 257 in block **I5** on the topographic map.

(a) The difference in height (vertical interval) between spot height 1216 and trigonometrical station 257 is … metres.

A 959
B 423
C 423,9
D 1473 (1 x 1) (1)

(b) With the aid of your answer to QUESTION 3.1.2 (a) Calculate the average gradient between spot height 1216 and trigonometrical station 257.

Formula : $\frac{\textbf{Vertical Interval}}{\textbf{Horizontal Equivalent}}$ (4 x 1) (4)

[10]

3.2 APPLICATION AND INTERPRETATION

3.2.1 Refer to the settlement at point **V** in block **J**1.

(a) The settlement pattern found at point **V** is (nucleated/ dispersed). (1 x 1) (1)

(b) Explain ONE disadvantage for a farm worker living in the settlement identified in QUESTION 3.2.1(a). (1 x 2) (2)

3.2.2 Refer to blocks **D8** to **D10** and **E8** to **E10** on the topographical map.

(a) State TWO physical factors that favour farming in this area. (2 x 1) (2)

(b) Explain how infrastructure promotes farming in this area. (1 x 2) (2)

3.2.3 The residential area Rustenburg North on the orthophoto is a high income residential area. Give ONE piece of evidence from the orthophoto map to support this statement. (1 x 1) (1)

3.2.4 Refer to land-use zone **1** on the orthophoto map.

(a) Various options are provided as possible answers to the following question. Choose the answer and write only the letter (A–D)

The land-use zone **1** is a/an … zone.

A residential
B commercial
C transitional
D industrial (1 x 1) (1)

(b) State ONE factor that has influenced the location of this land-use zone. (1 x 1) (1)

(c) Suggest ONE problem that the residents of the settlement next to land-use zone **1** are likely to experience. (1 x 2) (2)

[12]

3.3 GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

3.3.1 Data manipulation refers to data that has been processed and converted into useful information. A primary source data is manipulated to create a secondary source data.

(a) Is the orthophoto map an example of a primary or secondary source? (1 x 1) (1)

(b) Give a reason for your answer to QUESTION 3.3.1 (a). (1 x 2) (2)

3.3.2 Define the concept *data layering*. (1 x 2) (2)

3.3.3 Give an example of a land use in block **A5.** (1 x 1) (1)

3.3.4 Discuss the importance of data layering in a GIS. (1 x 2) (2)

[8]

TOTAL FOR SECTION B: [30]
TOTAL MARKS: 150

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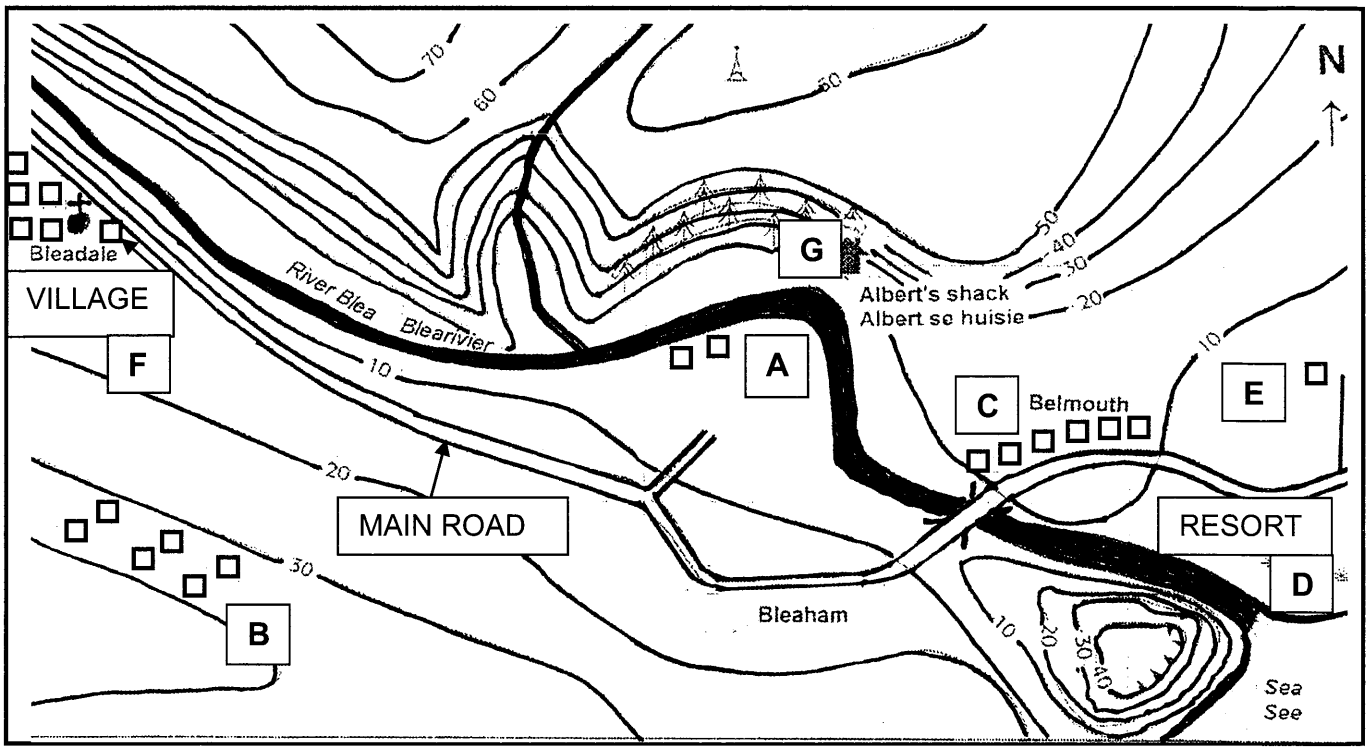
ANNEXURE

SEPTEMBER 2021

PREPARATORY EXAMINATION

This Annexure consists of 8 pages.

FIGURE 1.1: SETTLEMENTS IN THE SOUTHERN HEMISPHERE

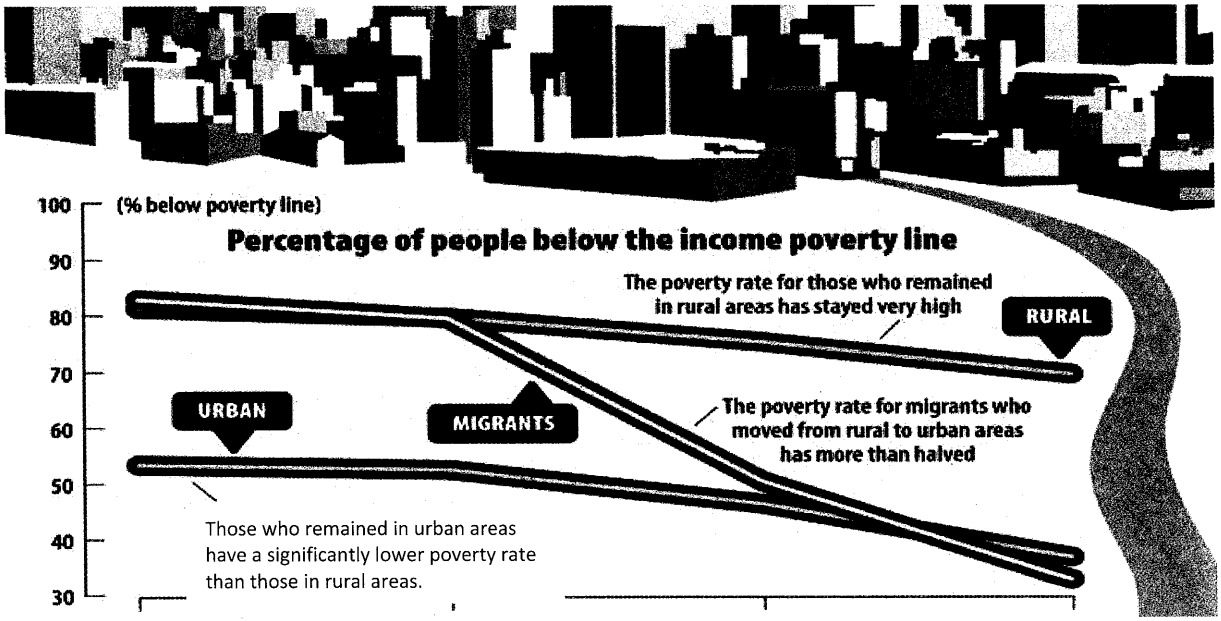


Source: adapted from Google images

FIGURE 1.3: RURAL URBAN MIGRATION

CASE STUDY

PERCENTAGE OF PEOPLE BELOW THE INCOME POVERTY LINE

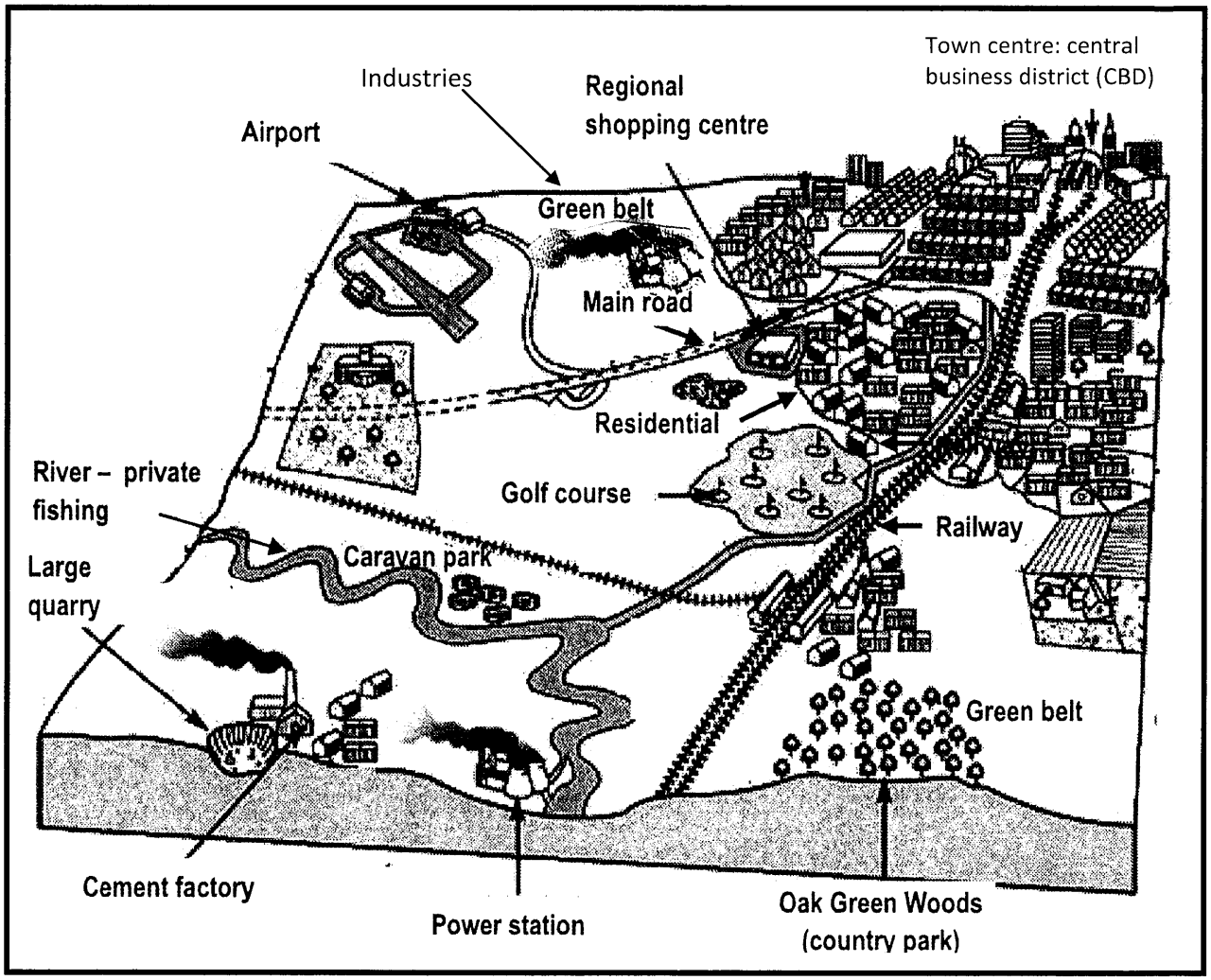


Ivan Turok – RURAL-MIGRANTS BETTER OFF IN CITIES

Apartheid's denial of people's right to residency in urban settlements set in motion a circular process of movement between town and countryside. Those who migrated to an urban area experienced a decline, crossing the stark divide between rural and urban poverty levels. Almost 15% of migrants are successful in finding some kind livelihood to grasp their way up the job ladder. Despite the overall benefits of urbanisation, many migrants are disadvantaged in the search for decent work because of their lack of relevant skills and work experience, their weak social networks and poor transport connections to centres of employment. People moving into informal settlements are particularly vulnerable to inadequate shelter, deficient basic services, environmental hazards and violent crime. Their frustrations give rise to protests, land invasions and other forms of anti-social behaviour. The South African Government embarked on a programme of land reform to assist those that remained in the rural areas.

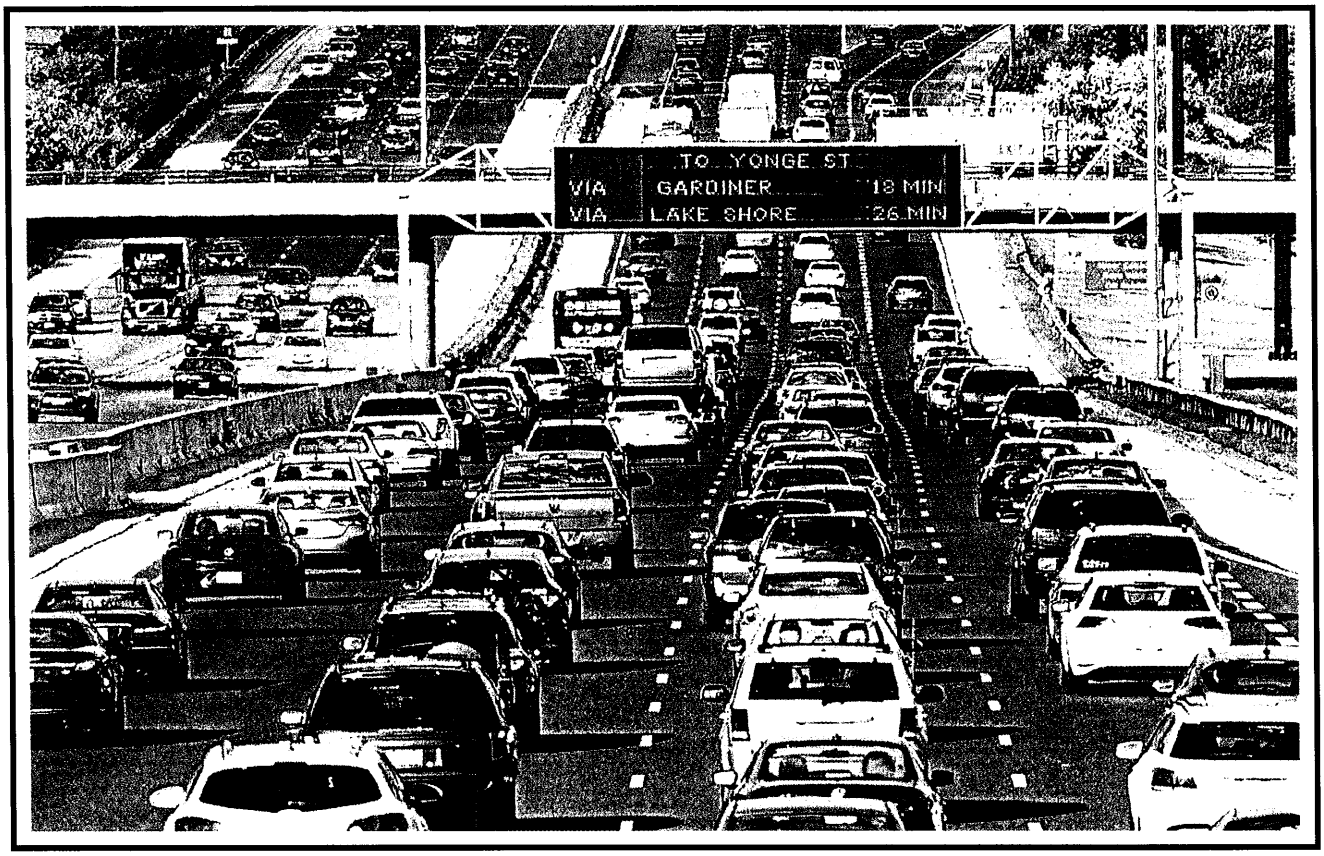
Source: Adapted from: https://mg.co.za/article/2018-04-26-00-rural-migrants-better-off-in-cities

FIGURE 1.4: LAND USE



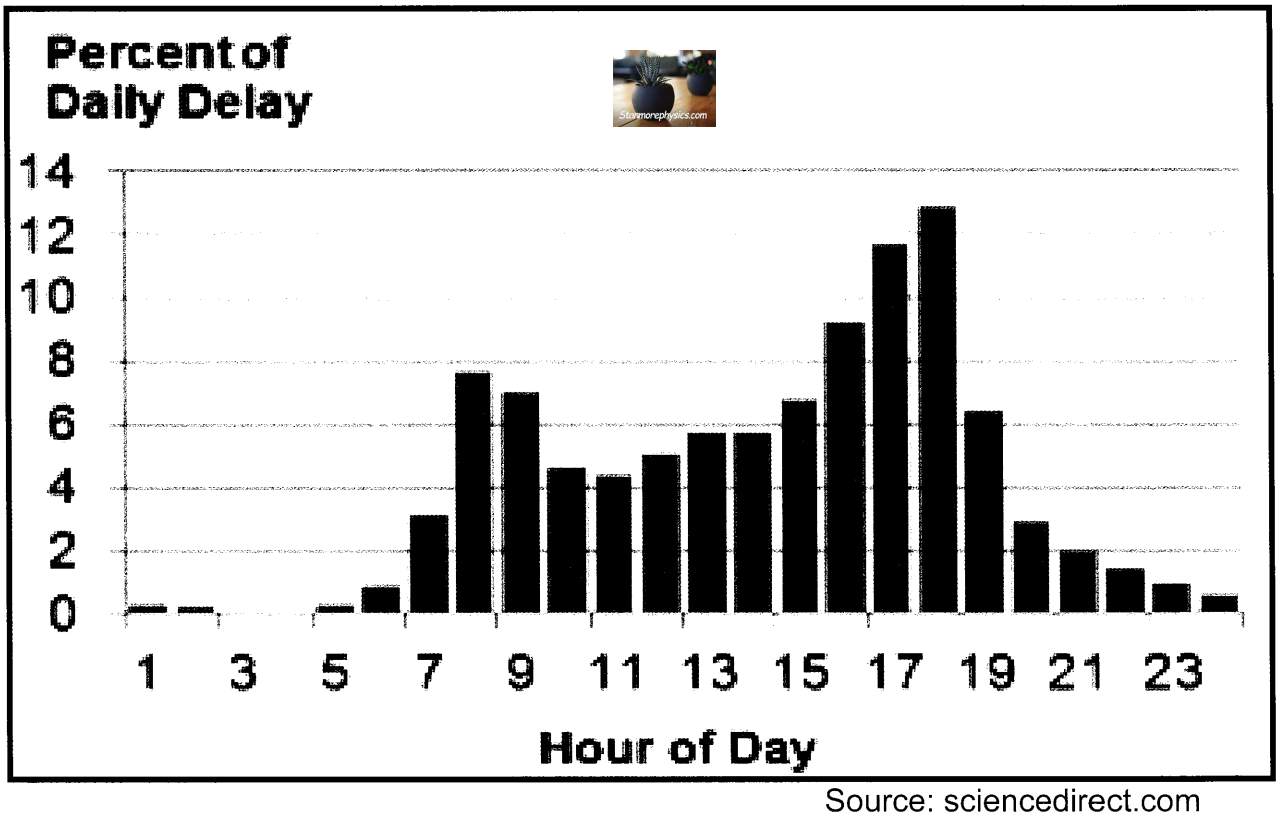
Source: Adapted from GCSE UK

FIGURE 1.5: A - TRAFFIC CONGESTION



Source: fleetowner.com

FIGURE 1.5 B TRAFFIC CONGESTION BY TIME OF DAY



Source: sciencedirect.com

FIGURE: 2.3 FOOD SECURITY IN SOUTH AFRICA

On national level, 44,6% or approximately two out of four households in South Africa are food secure. According to the conservation organisation World Wide Fund for Nature (WWF), South Africa will have to produce 50% more food by 2050 in order to feed an estimated population of 73 million people.

Food security is a global concern and in South Africa severe droughts have compounded the challenge, leading to production being affected and food prices increasing. Furthermore, farming technology is changing rapidly, sustainability is a priority and there continues to be a skills shortage in the agricultural sector. Not enough of our youth are interested in pursuing studies and a vocation in farming. The perception of farming is still largely outdated by the younger generation exists, despite the incredible advances in technology that have created many more opportunities and ways to grow food. Recruitment and motivating the next generation of emerging farmers should be a priority.

Despite these challenges the trends that have developed in SA agriculture are positive and need to be as the world looks at ways to feed a growing population of seven billion and counting.

Source: Adapted from https://casidra.co.za/sa-agriculture-trends/

FIGURE 2.4: INFORMAL SECTOR

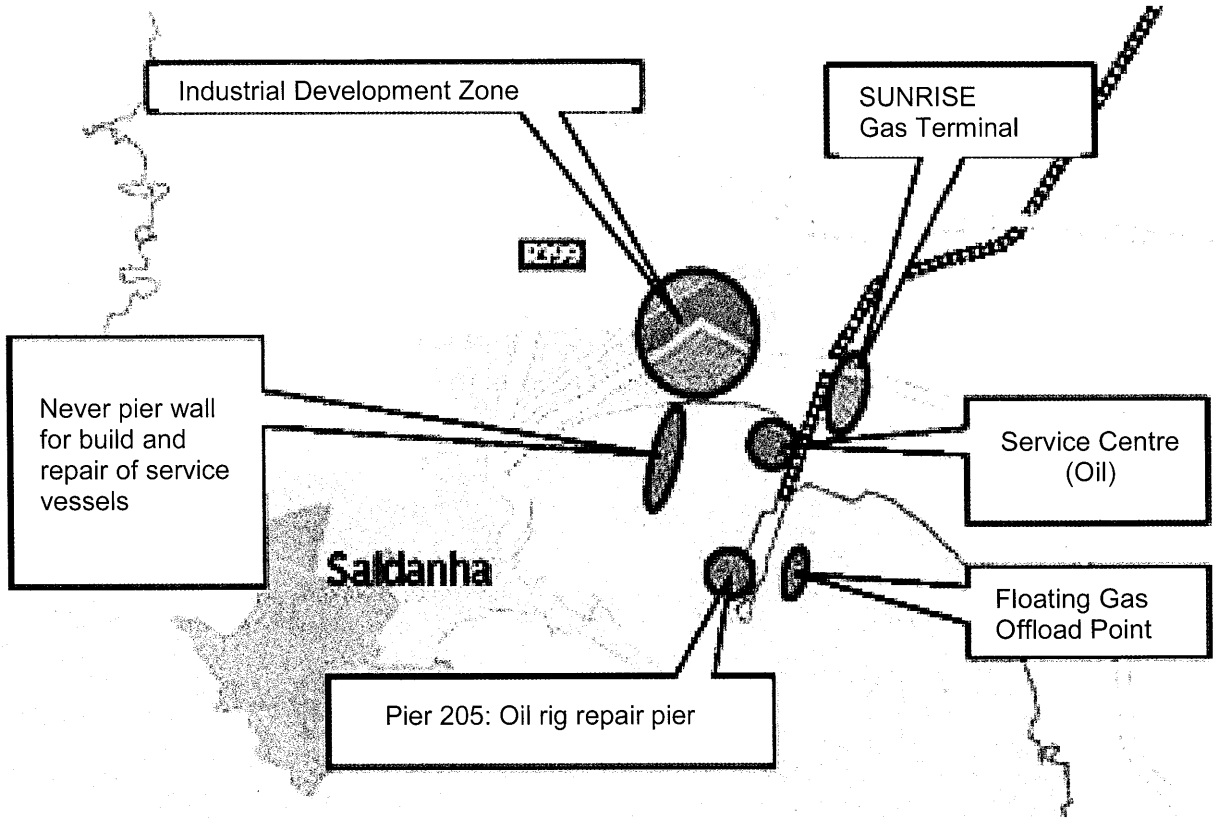
South Africa's informal sector is growing at a rate of 9,2%, making it the fastest growing economic sector. This is closely linked to unemployment. There has been a increasing call from all city councils in South Africa, for the informal sector to obtain trading licenses.

Source: https://www.gettyimages.com/photos/informal-sector

FIGURE 2.5: SALDANHA BAY IDZ

Saldanha Bay IDZ lands new investments

9 March 2021



Saldanha Bay Industrial Development Zone (SBIDZ) has signed three new investment agreements worth R300m bringing the total number of signed investors to eleven. The SBIDZ has also recently launched several new infrastructure developments. This will contribute to the growth of the economy and create jobs in the West Coast region.

Construction has started on the first investment project – a specialised corrosion protection facility involving zinc smelting – and building plans have been submitted for an additional two investment projects involving specialised manufacturing and fabrication, as well as partial assembly and manufacturing of components which are currently being imported into South Africa.

The SBIDZ also has a robust investor pipeline that continues to grow, not only in manufacturing and warehousing facilities, but also in new-build port infrastructure. Several private investors are involved in repair, maintenance and equipment servicing facilities linked to the Oil & Gas and Marine Services sectors.

Source: https://ww w.westerncape.gov.za/news/saldanha-bay-idz-lands-new-investments

FIGURE 3

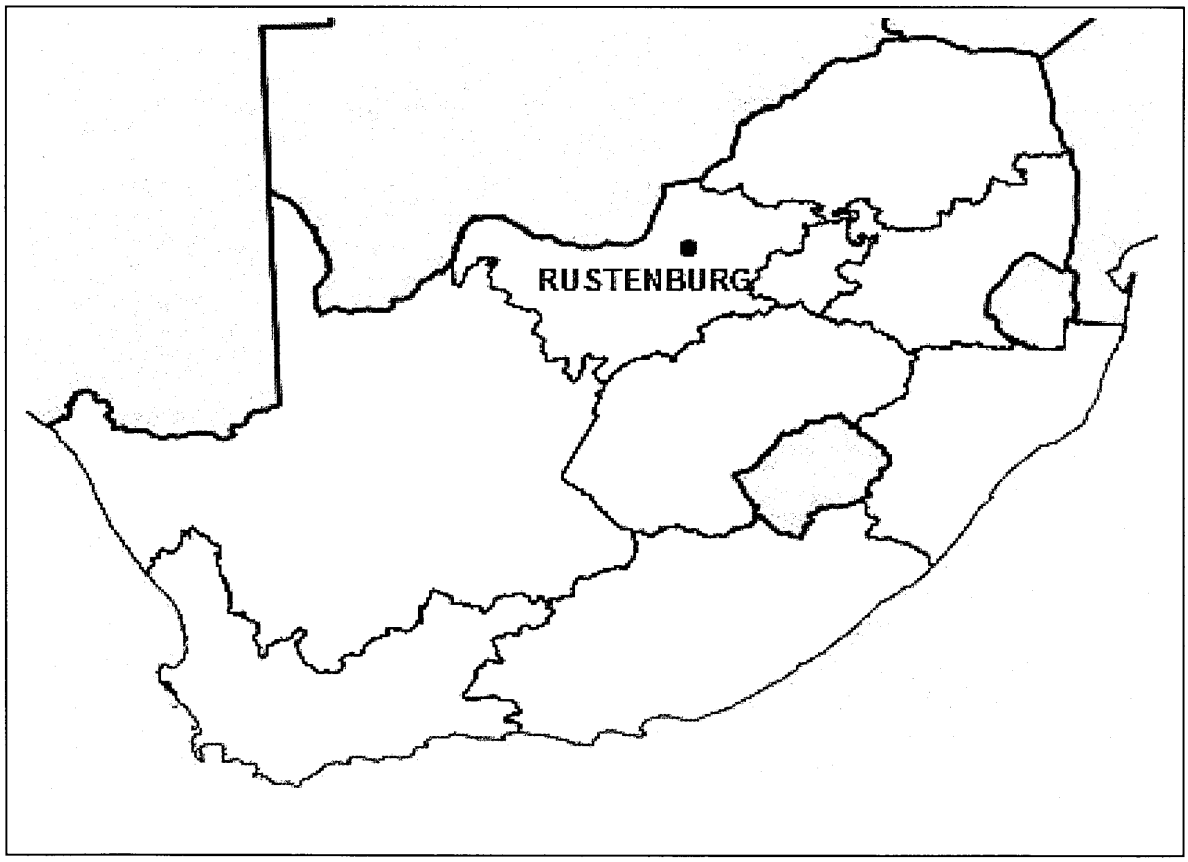
GENERAL INFORMATION OF RUSTENBURG

Rustenburg was established in 1851 as a central place town to support a fertile farming area producing citrus fruit, tobacco, peanuts, sunflower seeds, maize, wheat and cattle. The area became a primary agricultural region with vast citrus estates due to the favourable climate.

Rustenburg is home to the two largest platinum mines in the world and the world's largest platinum refinery, which processes around 70% of the world's platinum.

Lately, the vast citrus estates in the region have been in constant decline due to pollution from increased smelting and beneficiating processes by the mines. (Beneficiation is when value is added to the raw materials.)

Rustenburg has a temperate climate, it has very warm summers and mild winters. Due to the altitude, summers are not quite as hot as one might expect. Precipitation occurs mainly in summer.



[Source: http://en.wikipedia.org/wiki/rustenburg]

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MARKING GUIDELINES

SEPTEMBER 2021

PREPARATORY EXAMINATION

MARKS: 150

This marking guidelines consists of 12 pages.

QUESTION 1: RURAL AND URBAN SETTLEMENTS

1.1

1.1.1 E✓

1.1.2 G✓

1.1.3 C✓

1.1.4 F✓

1.1.5 A✓

1.1.6 D✓

1.1.7 B✓ (7 x 1) (7)

1.2

1.2.1 transition ✓

1.2.2 Urbanisation ✓

1.2.3 conurbation ✓

1.2.4 higher ✓

1.2.5 low ✓

1.2.6 social ✓

1.2.7 Urban morphology ✓

1.2.8 easier ✓ (8 x 1) (8)

1.3

1.3.1 (a) 15%✓ (1 x 1) (1)

(b) Migrants were able to find jobs ✓✓ (1 x 2) (2)

1.3.2 Migrants may not be able to find jobs due to lack of skills and experience ✓✓
Migrants may end up in informal settlements due to lack of housing ✓✓
Migrants will live in overcrowded conditions due to high rent value ✓✓
Migrants may not be able to pay for services ✓✓
Migrants may engage in protest actions because of poor service delivery ✓✓
Migrants may display anti-social behaviour because of lack of service delivery ✓✓
Migrants may invade land due to lack of housing ✓✓
Migrants will end up committing crimes to survive (accept examples) ✓✓
Migrants will experience poverty due to unemployment ✓✓
Unequal access to basic services due to unemployment ✓✓ (2 x 2) (4)
[Any TWO]

1.3.3 Land reform would return land to people which would encourage them to stay in rural areas/It would return land to people hence encouraging people to return to farming ✓✓
It would prevent people from being forcebly removed from their ancestoral land ✓✓
It encourages subsistence/commercial farming thus creating food security ✓✓
People will have land to produce own food and reduce poverty ✓✓
It would create more jobs in rural areas as more people will practice farming ✓✓
It will improve work conditions and salaries because farmers will have full ownership✓✓
Increased income will increase buying power ✓✓
It will allow communities to generate income and improve infrastructure/ services in rural areas ✓✓
It will encourage landownership and secure land tenure to prevent eviction ✓✓
It will improve the standard of living as people will be able to make profit from the land✓✓ (4 x 2) (8)
[Any FOUR]

1.4

1.4.1 Tall buildings ✓
Roads/railways converge (at CBD) ✓
Highly accessible ✓
High building density ✓ (1 x 1) (1)
[Any ONE]

1.4.2 CBD has a higher land value than the urban-rural fringe ✓✓ (1 x 2) (2)

1.4.3 Close to main road/accesibility ✓✓
Close to residential area /close to customers/ convenience ✓✓
Enough space for parking/expansion ✓✓
Less congested ✓✓
Cheaper land on outskirts ✓✓ (2 x 2) (4)
[Any TWO]

1.4.4 Smoke/dust will cause air pollution ✓✓
The river will get polluted/affect the acquatic life/upset the ecosystem ✓✓
Affect the biodiversity of the area ✓✓
Vegetation will have to be removed for excavation ✓✓
Processing of the cement and excavation will cause noise pollution ✓✓
Excavation will cause land pollution/despoliation/destruction of land ✓✓ (2 x 2) (4)
[Any TWO]

1.4.5 It will reduce the air pollution/carbon footprint ✓✓
Provide clean air/provide oxgygen suppy ✓✓
Cooling of the atmosphere/reduce global warming ✓✓
Prevents urban sprawl ✓✓
Aesthetic purposes ✓✓
Encourage bird and animal life ✓✓
Provide recreation and relaxation ✓✓
[Any TWO] (2 x 2) (4)

1.5

1.5.1 When the transport network cannot cope effectively with the amount of Vehicles/A high volume of vehicles using a specific road at a specific time of the day ✓✓ (1 x 2) (2)
(Concept)

1.5.2 (a) 17:00 – 18:00/5 – 6 pm/in the afternoon ✓ (1 x 1) (1)

(b) Afternoon - People finishing work at the same time ✓✓
Business closing at the same time ✓✓ (2 x 2) (4)

1.5.3 Frustration of spending additional time in the congestion/high stress levels ✓✓
Wear and tear on the car increases repairs/petrol consumption ✓✓
Arrive late to work and stand a chance of being fired ✓✓
Poor employer/employee relationship ✓✓
Missing important appointments ✓✓
Anger and road rage/conflicts among motorists/cause impatience✓✓
Speeding to save time will result in accidents ✓✓
Not obeying traffic rules in order to save time ✓✓
[Any TWO] (2 x 2) (4)

1.5.4 Limit the number of cars entering the city by creating eTolls✓✓
Encourage the use of park and ride system ✓✓
Improve/upgrade the public transport system ✓✓
Encourage the use of lift clubs/car pooling✓✓
Encourage flexi times start in businesses ✓✓
Create separate lanes for bus and taxi to enter the CBD✓✓
Introduce cycle lanes to encourage people to use bycles for shorter distances✓✓
Decentralisation of commercial and industrial activities to limit the number of people entering the city✓✓

Encourage the use of alternate forms of transport (taxis/buses/trains)✓✓
(Can give examples)
[Any TWO] (2 x 2) (4)

[60]

ECONOMIC GEOGRAPHY OF SOUTH AFRICA

QUESTION 2

2.1

2.1.1 C✓

2.1.2 G✓

2.1.3 F✓

2.1.4 B✓

2.1.5 A✓

2.1.6 D✓

2.1.7 E✓

2.1.8 H✓ (8 x 1) (8)

2.2

2.2.1 Raw material orientated industries✓

2.2.2 Industrial decentralisation✓

2.2.3 Market orientated industries✓

2.2.4 Footloose industries✓

2.2.5 Industrial centalisation✓

2.2.6 Bridge industries✓

2.2.7 Spatial development initiative✓ (7 x 1) (7)

2.3 FOOD SECURITY IN SOUTH AFRICA

2.3.1 Drought ✓ (1 x 1) (1)

2.3.2 Food prices increased✓ (1 x 1) (1)

2.3.3 55.4% ✓ (1 x 1) (1)

2.3.4 Poverty – you cannot afford to buy healthy food or buy things you need to farm with✓✓
Climate change increases natural disasters e.g. droughts which destroy crops✓✓
Limited arable (fertile) land on which to farm✓✓
Increase in food prices✓✓
Subsistence farming through poor farming techniques can damage arable land✓✓
[Any TWO]
(2 x 2) (4)

2.3.5 Introduction of national food security strategy✓✓
Encourage farmers to use modern methods of farming to increase output✓✓
Growing mixture of crops or practising mixed farming✓✓
Use of genetically modified crops✓✓
Government to provide incentives and subsidies to farmers✓✓
More research on how to improve food production for local conditions✓✓
Construction of dams in dry areas to encourage cultivation✓✓
To enable more people to have access to land for farming/land reform policies✓✓
Improving trade relations to have access to cheaper foods✓✓
Consolidation of farms to increase productivity✓✓
Agricultural officers to assist with improving food production✓✓
Encourage land ownership✓✓
Promote food gardens. ✓✓
Effective storage of surplus food produced. ✓✓
Support small-scale farmers. ✓✓
Improve availability of water supplies e.g. water storage facilities for drought situations. ✓✓
Reduce fertile soil damage and erosion e.g. by encouraging better farming techniques. ✓✓
Effective implementation of land reform policies e.g. arable land being transferred to more farmers, increasing farming products✓✓ (4 x 2) (8)
[Any FOUR]

2.4. INFORMAL SECTOR

2.4.1 Informal sector is whereby someone makes a living through an unregistered business, (and don't pay income tax.) ✓✓ (1 x 2) (2)
[Concept]

2.4.2 9.2% ✓ (1 x 1) (1)

2.4.3 They don't pay tax ✓✓
Form due to unemployment and poverty✓ ✓
Low costs are incurred to start an informal business✓✓
Labour intensive with little technology✓
Operations are small scale✓✓
Generally family ownership✓✓
Workers are self employed ✓✓
Engages workers that are unskilled and semi skilled ✓✓
Retrenchments from formal sector✓✓
High number number of females are downplayed by formal sector for employment✓✓
Formal businesses sub-contracted the informal businesses✓✓
Immigrants not being able to find employment✓✓
The informal sector is seen as a easy way to make money✓✓ (2 x 2) (4)
[Any TWO]

2.4.4 Lack of education e.g. entrepreneurial skill limit the improvement of their businesses✓✓
They don't receive much support from the local governments✓✓
Limited access to finance from banks etc✓✓
Limited access to infrastructure and services e.g trading facilities✓✓
Lack of storage facilities✓✓
Low and irregular income✓✓
Vulnerable to crime ✓✓
Exposed to harsh weather conditions✓✓
Constantly being harassed by the local authorities/police✓✓
It takes too long to issue trading permits✓✓ (2 x 2) (4)
[Any TWO]

2.4.5 Trading permits are required in order to:
Regulate the business✓✓
Allocate the businesses specific areas for trading✓✓
Encourage partnership between private sector and the informal trader✓✓
Provide infrastructure (hawker stall/carts) in areas zoned for informal trading✓✓
Assist small businesses to play an active role in providing training✓✓
Provide easier access to bank loans✓✓
Secure insurance covers✓✓
Provide storage facilities✓✓
Contribute to the income of the city by paying taxes✓✓
Provide ablution facilities✓✓
Ensure clean/hygienic facilities✓✓
Statistical analysis for planning✓✓
Prevention of harassment by city officials/ law enforcement officials ✓✓ (2 x 2) (4)

2.5 **SALDANHA BAY IDZ**

2.5.1 Western Cape✓ (1 x 1) (1)

2.5.2 **Manufacturing**: Zinc smelting✓specialised manufacturing✓fabrication✓ manufacturing of components✓
[Any ONE]

Tertiary: Warehousing facilities repair✓maintenance and equipment servicing✓ (2 x 1) (2)
[Any ONE]

2.5.3 Availability and distribution of products will be easier and quicker due to improved road and rail infrastructure✓✓
The electricity supply will be constant without any interruptions and will not hamper production✓✓
Port upgrades will increase import and export efficiency✓✓ (2 x 2) (4)
[Any TWO]

2.5.4 Create jobs in the West Coast region✓✓
Earning potential increases✓✓
Poverty reduced e.g. through employment✓✓
Accessibility to services/facilities e.g. education, health✓✓
Improvement in standard of living✓✓
Local people will be equipped with skills✓✓
Improvement of infrastructure such as roads, electricity, etc.✓✓
Many companies will engage in social responsibility programmes e.g. learnership and bursaries✓✓
(Any TWO) (2 x 2) (4)

2.5.5 Marine and land ecosystems will be destroyed due to increased toxic waste✓✓
Marine and land biodiversity will be destroyed due to increased toxic waste✓✓
Groundwater will be contaminated and will negatively influence the water quality in the area✓✓
Air pollution and possible acid rain will increase because of increased burning processes✓✓
Acid rain will reduce soil fertility ✓✓
Effluent may cause catchment area despoliation ✓✓ (2 x 2) (4**)**
[Any TWO]

[60]

The questions below are based on the GENERAL INFORMATION OF RUSTENBURG (FUGURE 3), 1:50 000 topographic map (2527CA RUSTENBURG WEST) as well as the orthophoto map (2527 CA 15 TLHABANE) as part of the mapped area

3.1 MAPWORK TECHNIQUES AND CALCULATIONS

3.1.1

(a) Various options are provided as possible answers to the following question. Choose the answer and write only the letter (A–D)

The length of the area demarcated in red on the topographic map is … km.

A 4.65 ✓ (1 x 1) (1)

(b) With the aid of your answer to QUESTION 3.1.1 (a), calculate the area of the orthophoto map, in km, as demarcated in red on the topographic map.

Formula: Area = Length (L) x Breadth (B)

Length: 9.3cm x 0.5 = 4.65km (range : 9.2 cm - 9.4 cm)

Breadth : 7.9cm ✓x 0.5 = 3.95 ✓ km (range : 7.8 cm – 8.0 cm)

Area = 4.65 x 3.95
= 18.37 km^2 ✓

Range for answer (17.94 km^2 - 18.8 km^2) (3 x 1) (3)

(c) By how many times is the scale of the orthophoto map larger than the topographic map?

5 times ✓ (1 x 1) (1)

3.1.2 Refer to the spot height 1216 in block **I3** and trigonometrical station **257** in block **I5** on the topographic map.

(a) Various options are provided as possible answers to the following question. Choose the answer and write only the letter (A–D)

The difference in height (vertical interval) between spot height 1216 and trigonometrical station 257 is … metres.

C 423,9 ✓ (1 x 1) (1)

(b) With the aid of your answer to QUESTION 3.1.2 (a) Calculate the average gradient between spot height 1216 and trigonometrical station 257.

Formula: $\frac{\text{Vertical Interval}}{\text{HorizontalEquivalent}}$

VI $= 423,9$

HE $= 5,7\checkmark \times 500m = 2\ 850\ \checkmark m \quad (5,7 \times 0,5 \times 1000 = 2\ 850m)$

Range: $(5,6 - 5,8)$

$G = \frac{423,9}{2\ 850}\ \checkmark$ **(Correct substitution)**

$= \frac{1}{6,72}$

$= 1: 6,72\checkmark$ **(Range: 1:6.6 – 1:6.84)**

(4x1) (4)
[10]

3.2 APPLICATION AND INTERPRETATION

3.2.1 Refer to the settlement at point **V** in block **J**1.

(a) The settlement pattern found at point **V** is (nucleated/dispersed).

dispersed ✓ (1 x 1) (1)

(b) Explain ONE disadvantage for a farm worker living in the settlement identified in QUESTION 3.2.1(a).

Lack of social life due to it being fairly isolated✓✓
Easy target for criminals because of isolation✓✓
Need large amounts of capital to be sustained✓✓
Basic services such as schooling are far away✓✓ (1 x 2) (2)
[Any ONE]

3.2.2 Refer to blocks **D8** to **D10** and **E8** to **E10** on the topographic map.
(a) State TWO physical factors that favour farming in this area.

North facing/north east facing slopes✓
Sheltered slopes✓
Level ground/The land is flat/slope is gentle ✓
Water available from rivers ✓
Fertile soil✓ (2 x 1) (2)
[Any TWO]

(b) Explain how infrastructure promotes farming in this area.

Transport network makes area accessible✓✓
Easy to transport crops/accessibility of market✓✓
Infrastructure to import raw materials e.g. fertilizers, seeds, equipment✓✓
Power lines indicate that farming could utilize electricity✓✓
Reservoirs/dams/storage dams/wind pumps to provide irrigation✓✓
Farm buildings✓✓
Houses and homesteads for farm workers✓✓ (1 x 2) (2)
[Any ONE]
[Candidates may use examples of specific infrastructure]

3.2.3 The residential area Rustenburg North on the orthophoto is a high income residential area. Give ONE piece of evidence from the orthophoto map to support this statement.

large plots/ houses✓
Low bulding density ✓
Far from CBD✓
Near the golf course/ recreation✓
Accessible- linked to a main road and other services for easy access (must qualify) ✓
not accessible - fewer entrances into the residential area (must qualify) ✓
green belt✓
away from mining activities✓ (1 x 1) (1)
[Any ONE]

3.2.4 Refer to land-use zone **1** on the orthophoto map.
(a) Various options are provided as possible answers to the following question. Choose the answer and write only the letter (A–D)
The land-use zone **1** is a/an … zone.

D industrial ✓ (1 x 1) (1)

(b) State ONE factor that has influenced the location of this land-use zone.

Open space/expansion✓
Close to bulk transport routes✓
Access to the market✓
Located on flat land✓
Away from built-up areas✓
Close to labour✓
Access to cheaper land ✓
[Any ONE] (1 x 1) (1)

c) Suggest ONE problem that the residents of the settlement next to land-use zone **1** are likely to experience.
Air pollution from mining activities decreases the quality of air✓✓
Noise from mining activities disturbes residents✓✓

Odours/bad smells caused by chemicals used in the mines affects the health of people✓ ✓
Constant passing by of large trucks causes disturbance✓✓
Acid rain damages the property of residents✓✓
Traffic congestion caused mining activities delays motorists✓✓
[Any ONE] (1 x 2)(2)

[12]

3.3 **GEOGRAPHICAL INFORMATION SYSTEMS (GIS)**

3.3.1 Data manipulation refers to data that has been processed and converted into useful information. A primary source data is manipulated to create a secondary source data.

(a) Is the orthophoto map an example of a primary or secondary source?

Secondary ✓ (1 x 1) (1)

(b) Give a reason for your answer to QUESTION 3.3.1 (a).

Information such as contour lines/names have been added on to make the photo into an orthophoto map ✓✓ (1 x 2) (2)

3.3.2 Define the concept *data layering.*

When different kinds of information are place one top of the other to see the overall picture ✓✓ (1 x 2) (2)
[Concept]

3.3.3 Give an example of a land use in block **A5.**
Mining ✓
Farming ✓ (1 x 1) (1)
[Any ONE]

3.3.4 Discuss the importance of data layering in a GIS.

Each layer is used to display and work with a specific set of information ✓✓
Information can be updated at any time✓✓
Different sets of data can be compared. ✓✓
Intergrated picture of landscape. ✓✓
Relationships between different sets of data can be established. ✓✓
Analyse different sets of information. ✓✓
Comparisons can assist with future developments. ✓✓
Helps with querying. ✓✓ (1 x 2) (2)
[Any ONE]

[8]

TOTAL FOR SECTION B: [30]

GRAND TOTAL: 150