



GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

SECONDARY SCHOOL IMPROVEMENT PROGRAMME (SSIP) 2023

Subject: GEOGRAPHY
Grade 12
Term 3

Geography Responses/Answers

SECTION 1 - ECONOMIC GEOGRAPHY OF SOUTH AFRICA

ACTIVITY 1.1

- 1.1.1 GDP
The total monetary or market value of all the finished goods and services produced within a country's borders (2)
- GNP
The total value of all finished goods and services produced by a country's citizens in a given financial year (2)
[CONCEPTS] (2 x 2) (4)
- 1.1.2 (a) GNP (1 x 1) (1)
(b) GDP (1 x 1) (1)
- 1.1.3 There was a sharp decrease from 2019 to 2020 (2)
There was a sharp increase from 2020 to 2021 (2) (2 x 2) (4)
- 1.1.4 Restrictions on movement of people reduced production (2)
Closing of businesses/industries to reduce the spread of the disease had a negative impact on production (2)
The tourism industry was halted there no ACTIVITY reduced income (2)
No manufacturing affected exports (2)
[ANY TWO] (2 x 2) (4)
- 1.1.5 Primary – 11%
Secondary – 21%
Tertiary – 45%
Quaternary – 24% (4 x 1) (4)

ACTIVITY 1.2

- 1.2.1 The total monetary or market value of all the finished goods and services produced within a country's borders (2)
[CONCEPT] (1 x 2) (2)
- 1.2.2 Primary = 6, 4 % (2) (1 x 2) (2)
- 1.2.3 Tertiary (2) (1 x 2) (2)
- 1.2.4 **Infrastructure** – South Africa's well-maintained rail, road and flight networks allow for raw materials and finished products to be transported easily (2)
Markets – South Africa is in an accessible position to sell to local and regional markets as well as foreign markets (2)
Raw materials – Wide range of minerals are mined and used in heavy industry (2)
Agriculture is a major supplier of raw material for food manufacturing (2)
Labour – Large population provides skilled and unskilled labour (2)

Power – This is available due to the abundance of coal (2)

Water – The high rainfall and many perennial rivers together with inter-basin transfer schemes provide an abundant water supply (2)

Government policies – These have produced three programmes (SMMDP; SDI; IDZ) to help manufacturers through grants and tax incentives (2)

[ANY TWO] (2 x 2) (4)

1.2.5 Create jobs and thus increases the purchasing power of people (2)

Contributes to the GDP (2)

Foreign exchange earned is used to pay for products that are imported (2)

Provides an important market for raw materials of the primary sector (2)

Attract foreign investment (2)

Improve international trade relations (2)

[ANY TWO] (2 x 2) (4)

ACTIVITY 1.3

1.3.1 Z

1.3.2 Y

1.3.3 Z

1.3.4 Y

1.3.5 Z

1.3.6 Z

1.3.7 Y

1.3.8 Z (8 x 1) (8)

ACTIVITY 2.1

2.1.1 Small scale farming/communal/subsistence (1) (1 x 1) (1)

2.1.2 Large-scale farming/commercial (1) (1 x 1) (1)

2.1.3 B (Large-scale farming/commercial) (1)

2.1.4 B (Large-scale farming/commercial) (1)

2.1.5 A (Small scale farming/communal/subsistence) (1)

2.1.6 B (Large-scale farming/commercial) (1)

2.1.7 A (Small scale farming/communal/subsistence) (1)

2.1.8 B (Large-scale farming/commercial) (1) (8 x 1) (8)

ACTIVITY 2.2

- 2.2.1 Primary (2) (1 x 2) (2)
- 2.2.2 Contribution by secondary and tertiary activities increased significantly (2) (1 x 2) (2)
- 2.2.3 Low/unreliable rainfall (in western half of country) (2)
High evaporation rates (in western half of country) (2)
Poor soils (in western half of country) (2)
[ANY TWO] (2 x 2) (4)
- 2.2.4 Provides income for the country (2)
Earns foreign income (2)
Improves the balance of trade (2)
[ANY ONE] (1 x 2) (2)
- 2.2.5 Low wages (2)
Labour disputes (2)
Strikes (2)
Farming activities often seasonal (2)
[ANY TWO] (2 x 2) (4)

ACTIVITY 2.3

- 2.3.1 Soybeans (1) (1 x 1) (1)
- 2.3.2 Maize (1) (1 x 1) (1)
- 2.3.3 The hectares planted increased from 2014 to 2015, but the crop yield decreased (2) (1 x 2) (2)
- 2.3.4 Low and unreliable rainfall which leads to drought (2)
Drought conditions in 2015/El Nino impacts/Global warming/Climate change (2)
Shortage of water making it impossible for irrigation to take place (2)
Poor soils with little humus, making production to be low (2)
Slow process of land redistribution/land reform policies (2)
Small scale farmers not producing enough maize (2)
Subsistence farmers only producing maize for their own use (2)
Farms becoming game farms and production decreases (2)
Poor farming methods (2)
Pests and diseases (2)
[ANY TWO] (2 x 2) (4)

- 2.3.5 Availability of water supply for irrigation purpose (2)
 Water-saving programmes (2)
 Water transfer schemes (2)
 Use of fertilisers to improve the crop yields (2)
 Use of genetically modified seeds and crops (2)
 Infrastructural development to ensure accessibility to the markets (2)
 Training of farmers on agricultural research (2)
 Encourage the farmers to practise commercial farming (2)
 Soil protection (2)
 Contour ploughing (2)
 Rotational cropping (2)
 Diversification (2)
 Planting of a variety of crops (2)
 Adjusting to the climatic conditions (2)
 Promote rural self-help projects/community gardens (2)
 Financial assistance from government (2)
 Mechanisation to increase outputs (2)
 Consolidation of smaller farms (2)
 Promote large scale farming to increase output (2)
 Improved security to protect farmers/farming activities (2)
[ANY FOUR] (4 x 2) (8)

ACTIVITY 2.4

- 2.4.1 Zeerust (1)
 Ermelo (1)
 Lady Brand (1)
 Christiana (1)
[ANY TWO] (2 x 1) (2)
- 2.4.2 Moderate temperature throughout the year allows for the grow variety of crops (2)
 Average temperatures of between 10°C and 15°C during the initial growth stage (2)
 Soil temperatures are above 14°C (2)
 Relief - Availability of flat land in areas within the Maize Quadrangle (2)
[ANY TWO] (2 x 2) (4)
- 2.4.3 (a) 11.4 million tons (1 x 1) (1)
 (b) Over 3 million tons (1 x 1) (1)
- 2.4.4 **Home market**
 Large percentage (%) of people will get their staple food at lower prizes (2)
 Increase in the production by-products (2)
 Will stabilize the employment in the different sectors related to maize production (2)
International market
 Exports will earn foreign exchange (2)
 Will positively contribute to the GDP (2)
 Trade related industries (Administration, Shopping, etc.) will benefit from the exports (2)
 Increase in foreign investors (2)
[ANY THREE – MUST INCLUDE BOTH HOME AND INTERNATIONAL MARKETS] (3 x 2) (6)

- 2.4.5 Large areas are being used for cultivation of maize (2)
 Contributes heavily to the GDP of the country (2)
 Large amount of exports (2)
 Employs a large number of people (2)
 Contributes to the construction of infrastructure (accept examples) (2)
[ANY FOUR] (4 x 2) (8)

ACTIVITY 2.5

- 2.5.1 '... the country may end up importing the grain if it gets more export orders ...' (1) (1 x 1) (1)
- 2.5.2 Consumption and exports are almost equal to production (1) (1 x 1) (1)
- 2.5.3 Japan/Taiwan/South Korea (1) (1 x 1) (1)
- 2.5.4 Unreliable and erratic rainfall patterns (2)
 Thundershowers/hail could destroy crops (2)
 Natural hazards such as droughts/El Nino (2)
 Water shortages (2)
 Declining soil fertility (2)
 Pests and diseases (2)
 Population growth (2)
[ANY TWO] (2 x 2) (4)
- 2.5.5 To keep trade relationships between countries open (2)
 Secure employment (2)
 Earn foreign exchange which might balance the imports (2)
 Maize farms are market driven and privately owned, therefore profit is the main concern (2)
[ANY TWO] (2 x 2) (4)
- 2.5.6 More imports of maize will increase the costs of maize related products which the poor cannot afford (2)
 The finances use to balance the deficit might create job losses in another sector (2)
 Inflation may rise, which have a negative effect on monetary value (2)
 The health of poor people may suffer because of a lack of a balanced diet (2)
[ANY TWO] (2 x 2) (4)

ACTIVITY 3.1

- 3.1.1 '... lack money to buy food and are unable to produce their own food' (1)
'... inability to secure employment or to generate income' (1)
'... characterised by few income- earners and many dependents (1)
[ANY TWO] (2 x 1) (2)
- 3.1.2 To prevent hunger and famine (2)
Maintain good health of people (2)
It will prevent social uprisings (2)
Reduces the crime rate (2)
To maintain a productive population (2)
[ANY ONE] (1 x 2) (2)
- 3.1.3 They would not have surplus money/budget to buy food (accept examples) (2) (1 x 2) (2)
- 3.1.4 They produce their own food (practise subsistence farming) which ensures the availability of food (2)
They live communally and can share food (2)
[ANY ONE] (1 x 2) (2)
- 3.1.5 More employment/skills training for vulnerable households (2)
Accelerate land reform process (2)
Encourage urban farming (2)
Zero rate VAT on basic foods (2)
Subsidies for food production (2)
Encouraging social and private partnerships (2)
Encourage small-scale farming (2)
Genetically modified staple foods (2)
Community soup kitchens/school feeding schemes (2)
Distribution of food parcels (2)
[ANY FOUR] (4 x 2) (8)

ACTIVITY 3.2

- 3.2.1 G8 (1) (1 x 1) (1)
- 3.2.2 They are eating like gluttons (1)
Huge variety and large portions of food are being consumed (1)
More and more food is being carried in (1)
[ANY ONE] (1 x 1) (1)
- 3.2.3 They are all rich, First World or more economically developed countries (1)
They all come from the Global North (1)
They have all politically strong and global leaders (1)
[ANY TWO] (2 x 1) (2)
- 3.2.4 Poorer, less developed countries are more prone to natural hazards and disasters (like drought, floods, pests, climate change etc.) and thus grow enough food less successfully as compared to richer, more advanced nations (2)
Some countries are politically unstable and have poor or bad governance, so cannot plan, and make effective provision for food security (2)
Large population growth in some countries threatens their food security (2)
Economic recession puts people's jobs at risk; families are at risk to food security if household heads lose their jobs or livelihood (2)
High prices in food increases food insecurity (2)
Lack of energy affects food production and storage and creates the risk of food insecurity (2)
Uncertain foreign trading environment (2)
[ANY TWO] (2 x 2) (4)
- 3.2.5 Use of modern technology (machines) increases production (2)
Research increases output (2)
Reducing soil erosion (accept examples), increases the yield (2)
Irrigation schemes increases the farming areas, which increases production (2)
The use of genetically modified (GM) causes higher yields (2)
Genetically modified is more resilient against pests, is more nutritious and is sustainable (2)
[ANY THREE] (3 x 2) (6)

ACTIVITY 3.3.

- 3.3.1 2010 (1) (1 x 1) (1)
- 3.3.2 It is a commonly established international unit of currency used by the World Bank (1 x 2) (2)
- 3.3.3 Least minerals were mined (1)
Cost of mining was highest (1)
The price received per ounce was lower than 2011 (1)
The mine had fewer workers (1)
[ANY TWO] (2 x 1) (2)

- 3.3.4 Strike action for better wages (2)
 Demand for health care, pensions, housing, food etc. (2)
 Faction fighting due to tribal differences (2)
 HIV/Aids result in skilled workers being lost (2)
 Absenteeism of mine workers (2)
[ANY TWO] (2 x 2) (4)
- 3.3.5 Minerals are non-renewable (2)
 Flooding and fires force mines to close down thus decreasing production (2)
 The formation of sinkholes impacts negatively on production (2)
 Hot and dry environments make conditions harsh and inhospitable (2)
 Absence of water resources (2)
 Rock bursts are responsible for deaths (2)
[ANY FOUR] (4 x 2) (8)

ACTIVITY 3.4

- 3.4.1 'as it struggles to recover from 23 000 job losses since April and falling commodity prices from key markets like China' (1) (1 x 1) (1)
- 3.4.2 7% (1) (1 x 1) (1)
- 3.4.3 Primary, Secondary and Tertiary (2)
[MUST INDICATE ALL THREE SECTORS – NOT EXAMPLES FROM TEXT] (1 x 2) (2)
- 3.4.4 It leads to less demand for metals, therefore production will decrease (2)
 Income from exports would decrease (2)
 It would affect the trade balance of the country negatively (2)
 It would have a negative impact on the GDP of the country (2)
 The company would make less profit (2)
 Lowering of profits would result in job cuts (2)
[ANY TWO] (2 x 2) (4)
- 3.4.5 Labour unrest makes mines unprofitable and forces them to close (2)
 The load shedding causes loss of revenue and income as activities cease for hours which means mines and metal companies are less productive (2)
 Poor mine safety leads to loss of skilled mine workers (2)
 HIV and Aids resulted in many skilled workers dying due to this pandemic (2)
 Mines are far away from harbours thus increasing the price of exported minerals making them uncompetitive against low foreign prices (2)
 Export of unprocessed minerals decreases gross profits and reduces their sustainability (2)
 Minerals are non-renewable making it difficult to plan for the future (2)
 Geothermal gradients force the mining sector to spend more money on air conditioning as it very hot underground (2)
 The increasing cost of water and water shortages (2)
 Fluctuating market prices (2)
 Environmental factors such rehabilitation increase production costs (2)
 Foreign investors are concerned about labour regulations (2)
 Laws of a fixed minimum wage add to production costs (2)
[ANY FOUR] (4 x 2) (8)

ACTIVITY 3.5

- 3.5.1 Platinum Group Metals (1) (1 x 1) (1)
- 3.5.2 Palladium (1)
Rhodium (1) (2 x 1) (2)
- 3.5.3 Emissions was cut by countries around the world (2)
Coal emissions is higher than that of platinum (2)
[ANY ONE] (1 x 2) (2)
- 3.5.4 Together these industries uses 74% of the platinum in their production (2)
Platinum is a vital metal in the automotive and jewelry industry (2)
[ANY ONE] (1 x 2) (2)
- 3.5.5 It is used in a variety of day-to-day products like glass, electricity, medical and petroleum (2)
(1 x 2) (2)
- 3.5.6 Platinum will be in demand in the future because of lower carbon emissions (2) (1 x 2) (2)
- 3.5.7 **Positive**
Exports of platinum will increase (2)
More local and foreign investment in platinum mines (2)
Increase in foreign earnings and exchange (2)
Increased employment (2)
Platinum prizes will increase, which will benefit SA as the leading producer of platinum (2)
Less carbon emissions will increase the overall health of South Africans (accept examples) (2)
Contribution to the GDP will increase (2)
Negative
Environmental destruction (biodiversity, ecosystems, habitats, etc.)
Job losses in coal mining and related industries (2)
Increase use of electricity due to beneficiation of the raw material (2)
[ANY FOUR – MUST INCLUDE POSITIVE AND NEGATIVE IMPACT] (4 x 2) (8)

ACTIVITY 4.1

- 4.1.1 Industrial inertia
- 4.1.2 GEAR
- 4.1.3 Beneficiate
- 4.1.4 Quaternary activities
- 4.1.5 Multiplier effect
- 4.1.6 Periphery
- 4.1.7 Agglomeration

ACTIVITY 4.2

- 4.2.1 Heavy (1)
- 4.2.2 Raw material (1)
- 4.2.3 Footloose (1)
- 4.2.4 Light (1)
- 4.2.5 Raw material (1)
- 4.2.6 Bridge (1)
- 4.2.7 Ubiquitous (1)
- 4.2.8 Heavy (1) (8 x 1) (8)

ACTIVITY 4.3

- 4.3.1 Manufacturing of goods/Processing of raw material (1)
[CONCEPT] (1 x 1) (1)
- 4.3.2 An industry that is located close to the consumer/customer (1)
[CONCEPT] (1 x 1) (1)
- 4.3.3 Bread products are perishable and need to be consumed within a specific period (2)
Cannot be stored for a long period and needs to be transported on a daily basis (2)
Short lifespan due to sell-by dates being put on products (2)
[ANY ONE] (1 x 2) (2)
- 4.3.4 No noise pollution (2)
No bad odours (2)
Manufactured from light raw materials (2)
Located close to the customers (2)
No use of heavy machinery (2)
Occupies a smaller space (2)
Can be located in the CBD (2)
Clients can buy directly from a light industry (2)
Locate in multi-storey buildings (2)
[ANY TWO] (2 x 2) (4)

- 4.3.5 Transport: Effective and efficient transport for raw materials/Increase in fuel costs increases the costs of production (2)
 Availability of raw material: Ingredients should be available nearby (2)
 Cost of the raw materials/drought/increase in imports of raw materials(2)
 Labour: Availability of unskilled labour/labour strikes (2)
 Electricity: Sustainable supply of electricity (2)
 Water: Availability of water (2)
 Maintenance of equipment (2)
 Factory rentals (2)
[ANY TWO] (2 x 2) (4)
- 4.3.6 Provides an accessible market for the buying and selling of goods (2)
 Consumers have access to stores which sell products (2)
 Factories are located close to the markets and results in job creation to skilled and unskilled labourers (2)
 Provides important markets for the raw materials from primary sector (2)
 Development of infrastructure between factories and market areas (2)
 Profits from finished products is reinvested in the market area (2)
 Contributes to the GDP (2)
 Improves trade relations/foreign capital (2)
 Strengthens the retail sector (2)
[ANY TWO] (2 x 2) (4)

ACTIVITY 4.4

- 4.4.1 It is an economic ACTIVITY concerned with the processing of raw materials and manufacturing of good in factories/buildings (2)
[CONCEPT] (1 x 2) (2)
- 4.4.2 Raw material orientated (1)
- 4.4.3 The industry is near the excavations (2) (1 x 2) (2)
- 4.4.4 **Water**
 Needed in the general production of goods (2)
 Needs water for the cooling of machinery (2)
[ANY ONE] (1 x 2) (2)
- Labour**
 Needs workers to operate the machines (2)
 Manual labour/Semi-skilled labour during production (2)
 Skilled labour/Technically advanced labourers to manage and co-ordinate the activities in the factory (2)
[ANY ONE] (1 x 2) (2)
- 4.4.5 Uses abundance of resources (2)
 Makes use of bulk transport facilities, e.g., railway lines (2)
 Needs high voltage electricity to make machines work properly and efficiently (2)
[ANY ONE] (1 x 2) (2)

- 4.4.6 Raw materials must be processed into higher volume products (2)
 Machine operators must be trained in using new technology (2)
 Researchers employed to make production higher and more efficient (2)
 Logistics personnel in the distribution of the products (2)
[ANY TWO] (2 x 2) (4)

ACTIVITY 5.1

- 5.1.1 Pretoria-Witwatersrand-Vereniging (1) (1 x 1) (1)

- 5.1.2 Gauteng (1) (1 x 1) (1)

- 5.1.3 **Advantage**
 Surrounded by a variety of raw materials for industries (2)
 Semi-skilled and Skilled labourers from the nearby neighbouring countries (2)
 Nearby Power stations for cheap electricity (2)

Disadvantage

The regions is land locked (2)
 It is far from the major export harbours (2)

[ANY TWO – MUST INCLUDE AN ADVATAGE AND A DISADVANTAGE] (2 x 2) (4)

- 5.1.4 Finished products for exporting transported to the major export harbours (2)
 National routes (N1 - 4) link the PWV to the rest of Africa and locally (2)
 Imported goods/products can be transported to the PWV-regions via the national routes (2)
[ANY TWO] (2 x 2) (4)

- 5.1.5 Major international companies is established in the PWV region (2)
 This attracts foreign investors which encourage exports (2)
 Multiple job opportunities in various companies and industries (2)
 Gauteng accounts for more than half of the total exports and imports of the country (2)
 Industries in Gauteng included the total value of export-orientated products, which earns more money (2)
[ANY FOUR] (4 x 2) (8)

ACTIVITY 5.2

- 5.2.1 Johannesburg (1) (1 x 1) (1)
- 5.2.2 33.8% of the national GDP in current prices (1)
45% of SA's total economic output (1) (2 x 1) (2)
- 5.2.3 Abundant raw materials from towns found near industries (2)
Availability of cheaper energy supply mined in local area and transmitted over short distances by ESKOM (2)
Availability of water and strategic water transfer schemes (2)
Well established transport infrastructure in the form of road, rail, and air to access raw materials and markets (2)
Available flat land facilitates easy construction of infrastructure (2)
Pretoria as an administrative capital marketed the region for industrial development (2)
Availability of skilled/unskilled labour from high population (2)
Large population serving as a base for buying power/market (2)
MANY institutions for skills development and research (2)
Railway linked to Maputo harbour for exports (2)
[ANY TWO] (2 x 2) (4)
- 5.2.4 (a) This region generally does not receive enough rainfall during the year (2)
High evaporation rates reduces the water supply (2)
There is high competing demand for water from different sectors of the economy (2)
High concentration of people in the region increases the demand of water for domestic use (2)
Poor management (accept examples) of existing water resources reduces the supply even further (2)
Water transfer schemes are costly (2)
[ANY ONE] (1 x 2) (2)
- (b) Water transfer schemes allow for water to be transferred to PWV (Gauteng) Industrial Region (2)
Tugela Vaal water transfer scheme allows water from the Tugela River in KZN to be transferred to the Vaal Dam (2)
Lesotho Highlands project allows water from the Katse Dam to be transferred to the Vaal Dam (2)
Recycling of water puts less pressure on the usage of the water (2)
Water restrictions (2)
Higher tariffs to limit the usage of water increasing (2)
[ANY ONE] (1 x 2) (2)
- (c) High influx of people from other parts of South Africa (2)
High influx of illegal immigrants exceeding amount of employment opportunities available (2)
Increase in unskilled labour force (2)
Lack of Fourth Industrial Revolution skills (2)
Retrenchments due to unstable economic climate (2)
COVID-19 restrictions and protocols (2)
Industries use machinery/robots to do work which replaces people (2)
Lack of work experience (2)

	[ANY TWO]	(2 x 2) (4)
ACTIVITY 5.3		
5.3.1	Indian Ocean (1)	(1 x 1) (1)
5.3.2	Automobile/motor vehicles (1)	(1 x 1) (1)
5.3.3	The (Algoa) bay provided an ideal location for the construction of harbours for exporting and importing goods (2) The area has flat land that is suitable for the construction of industries (2) Located in the wetter eastern half of the country ensuring a supply of water for processing industries (2) The climate is conducive to the production of raw materials for industries (2) Availability of wind to generate energy (2) [ANY TWO]	(2 x 2) (4)
5.3.4	Investment would provide more employment (2) Better salaries will increase buying power (2) Multiplier effect/link industries develop the economy (2) Broaden the skills base (2) Infrastructural changes stimulate industrial growth (2) Stimulates the growth of the tertiary economic sector e.g., tourism (2) Reduces the migration of skilled labour out of the region (2) It provides work opportunities to the local people therefore contribute to the GDP of the province/country (2) Availability of raw materials for the textile industry (2) [ANY TWO]	(2 x 2) (4)
5.3.5	It has forced industries to embrace fourth industrial revolution technology to improve efficiency and quality of production (2) Upskilling of workers to adapt to new automation/technology (2) Specialist/highly skilled workers have had to be brought in from other countries to improve the quality of production/share expertise (2) Infrastructure directly involved in the processing and exporting of goods had to be upgraded (2) Industries to implement multiple shifts (night and day) to improve production to meet the demand (2) Exporting of processed goods reduces imports (2) [ANY TWO]	(2 x 2) (4)
ACTIVITY 5.4		
5.4.1	Eastern Cape (1)	(1 x 1) (1)
5.4.2	Automotive (1)	(1 x 1) (1)
5.4.3	Port and harbour facilities (1)	(1 x 1) (1)
5.4.4	This has led to the development of link industries This caused a multiplier effect with regards to industries (Examples of link industries or multiplier effect can be given) [ANY ONE]	(1 x 2) (2)

- 5.4.5 There is a lack of raw materials mined in the area (2)
Electricity is expensive as the region is located a distance away from the coalfields (2)
Production of other sustainable sources of energy is limited (2)
The region suffers from periodic droughts (2)
Lack of skilled labour (2)
Constant labour strikes (2)
[ANY ONE] (1 x 2) (2)
- 5.4.6 The presence of the PE harbour has facilitated the import and export of raw materials and goods (2)
The deep-water port at Ngqura and the development of the IDZ there has encouraged more foreign investment (2)
The region has an excellent road and rail network that links it to the rest of the country for transport of bulky goods internally (2)
There is an international airport located there for rapid movement of skills and perishable goods (2)
It has encouraged investment in the area (2)
[ANY FOUR] (4 x 2) (8)

ACTIVITY 5.5

- 5.5.1 South Western Cape (1) (1 x 1) (1)
- 5.5.2 Industrial region 4 has access to the sea/harbour (2)
Region 1 is landlocked in the interior (2)
[ANY ONE] (1 x 2) (2)
- 5.5.3 The natural bay seaport (harbour) promotes bulk transport that the motor industry requires (2)
The harbour facilitates the easier export of motor vehicles to overseas markets (2)
[ANY ONE] (1 x 2) (2)
- 5.5.4 They have been taught Fourth-industrial revolution skills e.g., robotics which will increase efficiency in the workplace (2)
They are exposed to modern/cutting edge technological skills (2)
[ANY ONE] (1 x 2) (2)
- 5.5.5 Wide variety of raw materials to support industrial development (2)
Access to water supply from rivers/wetter eastern half (2)
Enough flat land for the development of industries (2)
Good energy supply from nearby coalfields (2)
[ANY TWO] (2 x 2) (4)
- 5.5.6 There would be an overconcentration of people and activities (2)
This would lead to unemployment as there would not be enough jobs (2)
There would be widespread poverty (2)
A shortage of housing would result in the development of informal settlements (2)
Crime and other social ills (examples) would increase (2)
Road rage would be the result of traffic congestion (2)
Disruption in services like water and electricity due to the overconcentration of people (2)
Violent protests over poor service delivery (2)
[ANY TWO] (2 x 2) (4)

ACTIVITY 6.1

- 6.1.1 Good Hope Plan (1) (1 x 1) (1)
- 6.1.2 SDI – Spatial Development Initiative (1)
IDZ – Industrial Development Zone (1) (2 x 1) (2)
- 6.1.3 Fish river SDI (1)
Wild Coast SDI (1) (2 x 1) (2)
- 6.1.4 RDP (1) (1 x 1) (1)
- 6.1.5 Agriculture (1)
Manufacturing (1)
Tourism (1)
[ANY TWO] (2 x 1) (2)
- 6.1.6 Must have good roads for marketing (2)
A good harbour and airport for transport (2)
Break of bulk points (2)
Sufficient power supply (2)
[ANY TWO] (2 x 2) (4)
- 6.1.7 IDZ's are specialised industrial areas found within an SDI (2)
Attract foreign investment (2)
Both aim to uplift development in remote underdeveloped areas of South Africa (2)
Encourages industrial decentralisation (2)
Uplift the local community through skills development (2)
Improve the tourism industry (2)
Upgrade/develop infrastructure (2)
[ANY FOUR] (4 x 2) (8)

ACTIVITY 6.2

- 6.2.1 Eastern Cape (1) (1 x 1) (1)
- 6.2.2 11 500 hectares (1) (1 x 1) (1)
- 6.2.3 Port of Ngqura (1) (1 x 1) (1)
- 6.2.4 Being a modern, deep-water port - it can accommodate larger ships (2)
MANY more ships can be accommodated at once(2)
[ANY ONE] (1 x 2) (2)
- 6.2.5 Renewable energy available – wind farm is 30 minutes away (2)
Supplements conventional power supplies (2)
[ANY TWO] (2 x 2) (4)

- 6.2.6 Within 15 minutes of road, rail, air, and sea transport - accessibility (2)
 Close to energy supply - 30-minute drive to biggest wind energy generating farm in South Africa (2)
 Access to 3 sea ports (PE, NGQURA and East London) (2)
 Close to a huge logistics zone (2)
 Availability of skilled/unskilled labour (2)
 Availability of space (2)
[ANY THREE] (3 x 2) (6)

ACTIVITY 6.3

- 6.3.1 Championing socio-economic development (1) (1 x 1) (1)
- 6.3.2 Where related industries are in close proximity to one-another (2) (1 x 2) (2)
- 6.3.3 Maximise efficiency (1)
 Minimize turnaround strategies (1) (2 x 1) (2)
- 6.3.4 Automotive (1)
 Agro-processing (1)
 Aqua culture (1)
 Metals (1)
 Logistics (1)
[ANY TWO] (2 x 1) (2)
- 6.3.5 It has a deep-water harbour that can accommodate large shipments (2)
 The Bay is naturally protected (2)
 The area has an established infrastructure (2)
 Agricultural raw materials are nearby (2)
 There is an abundance of skilled and unskilled labour (2)
[ANY TWO] (2 x 2) (4)
- 6.3.6 (a) Dedisa Peaking Power Plant (1)
 BAIC – SA's Vehicle Manufacturing Plant (1) (2 x 1) (2)
- (b) Road network in the area will be upgraded/extended (2)
 The road network linking the IDZ to other regions will be upgraded (2)
 Harbour facilities will be improved (2)
 Railway network will be upgraded for the purpose of bulk transport of good and products (2)
 Links between different modes of transport will be strengthened (2)
[ANY THREE] (3 x 2) (6)
- (c) Human resources are poorly managed (2)
 There are records of poor working relationships between investors and IDZ management (2)
 There is a lack of training and skills development programs (2)
[ANY TWO] (2 x 2) (4)

ACTIVITY 6.4

- 6.4.1 Indian ocean (1) (1 x 1) (1)
- 6.4.2 Warm waters causes tropical climate (2)
Beaches for tourism (2)
[ANY ONE] (1 x 2) (2)
- 6.4.3 Integrated rural development (1)
Agricultural upliftment (1)
Community driven tourism development (1)
[ANY TWO] (2 x 1) (2)
- 6.4.4 The SDI is located in the middle between the towns/cities, which have harbours and airports (2)
The towns/cities provide a market for locally produced products (2)
Tourists/People moving between these towns/cities must pass the Wild Coast, which in turn creates business opportunities (2)
[ANY TWO] (2 x 2) (4)
- 6.4.5 Untouched natural biodiversity promote eco-tourism (2)
Skills development and training for tour guides (2)
Area will promote hiking trails (2)
Businesses can establish along the beaches (2)
The are might attract foreign investment in eco-tourism (2)
[ANY THREE] (3 x 2) (6)
- 6.4.6 (a) The inhabitants don't want mining in the area (2)
The local people want eco-tourism activities (2)
[ANY ONE] (1 x 2) (2)
- (b) **Positive**
Maintaining the aesthetic beauty for eco-tourism (2)
The biodiversity is preserved (2)
Training and skills development programs in eco-tourism (2)
Local businesses in eco-tourism can be established (accept examples) (2)
- Negative**
Mining investors will withdraw (2)
No new projects for the local inhabitants (2)
Infrastructure will remain poor (2)
[ANY FOUR – MUST PROVIDE POSITIVE AND NEGATIVE] (4 x 2) (8)

ACTIVITY 7.1

- 7.1.1 Z (1)
- 7.1.2 Y (1)
- 7.1.3 Z (1)
- 7.1.4 Y (1)
- 7.1.5 Y (1)
- 7.1.6 Z (1)
- 7.1.7 Y (1)
- 7.1.8 Z (1) (8 x 1) (8)

ACTIVITY 7.2

- 7.2.1 To allow a country to exchange goods and services produced with those of other countries (1) (1 x 1) (1)
- 7.2.2 'Use of modern production techniques' (2)
'Highly advanced transportation systems' (2)
'Outsourcing of manufacturing and services' (2)
[ANY ONE] (1 x 2) (2)
- 7.2.3 It promotes foreign investment and greater access to government funding (2)
It creates job opportunities thus improving the standard of living (2)
It improves the skills of people hence they earn a better salary (2)
Purchasing power increases due to higher income (2)
Goods can be bought at a lower price thus reducing expenses (2)
It encourages the development of more secondary industries which has a multiplier effect (2)
[ANY TWO] (2 x 2) (4)
- 7.2.4 South Africa is at the southern tip of Africa and the major trading partners are located in the Northern Hemisphere (2)
Due to the distance, it takes longer to deliver goods (2)
Higher transport costs increase the price of exported goods (2)
The longer travelling distance results in goods not being easily available (2)
The longer travelling distance affects the quality of perishable goods (2)
[ANY TWO] (2 x 2) (4)
- 7.2.5 Market is flooded with imported goods (2)
Increased competition limits the ability of local industries to expand their operations (2)
It results in the closure of local industries (2)
Imported goods are sometimes cheaper than local goods (2)
Local production decreases due to lower demand (2)
Loss of jobs locally as industries close/high unemployment (2)
Limited growth in the economy/GDP stagnates (2)

	[ANY TWO]	(2 x 2) (4)
ACTIVITY 7.3		
7.3.1	The trade between various countries/The exchange of capital, goods, and services between countries (1) [CONCEPT]	(1 x 1) (1)
7.3.2	Poultry/chicken/chicken products (1)	(1 x 1) (1)
7.3.3	DTI (Department of Trade and Industry)	(1 x 1) (1)
7.3.4	The chicken representing cheap imports is larger (and stronger) than the chicken representing the local producers which is smaller (weaker) (2) Cheaper imports will outweigh the local producers (2) Local producers will be forced to shut down (2) Job losses and retrenchments may occur (2) Profits decline for local producers (2) Money flows out of the country (2) DTI biased toward cheap imports (2) Imports are subsidised therefore cheaper (2) [ANY ONE]	(1 x 2) (2)
7.3.5	Negative balance of trade (2) Cheaper imports means less profit for local producers (2) Less products produced in South Africa (2) Less profits generated in South Africa (2) Local companies close down (2) Higher unemployment (2) Local producers cannot compete with imports (2) Smaller markets for local producers (2) [ANY ONE]	(1 x 2) (2)
7.3.6	South Africa belongs to trading blocs/agreements/free trade zones (e.g., BRICS, SADC, AGOA) (2) Access to a larger international market creates more competition for local markets and pricing (2) Fosters better international relations between countries (2) Access to a larger variety of goods (2) More competitive prices for goods purchased (2) Access to cheaper goods means more spending power for the poor to buy other goods (2) Access to cheaper food contributes to food security (2) Political corruption and manipulation (2) [ANY TWO]	(2 x 2) (4)

- 7.3.7 Advertising campaigns/trade fairs such as promote 'local is lekker', 'made in South Africa' (2)
- Incentives for local industrialists (2)
- Provide funding to get subsidies to business (2)
- Provide funding to get grants to farmers (2)
- Provide funding to get rebates to farmers (2)
- Provide training programs to up skill locals (2)
- Use modern technology in farming to increase outputs (2)
- Encourage import substitution (2)
- Produce high quality products locally (2)
- Protectionism/increase import tariffs/decrease quotas(2)
- Attract foreign investments for local production (2)
- [ANY TWO]** (2 x 2) (4)

ACTIVITY 8.1

- 8.1.1 The unregistered and unregulated sector of the economy (2)
- Businesses that do not pay taxes and are not monitored by government(2)
- (ANY ONE – CONCEPT)** (1 x 2) (2)
- 8.1.2 R157 billion (1) (1 x 1) (1)
- 8.1.3 Not under roof (1)
- Being harassed (1)
- Open to criminals (1)
- No security (1)
- Exposed to danger along the roads (1)
- Health are being compromised (1)
- (ANY TWO)** (2 x 1) (2)
- 8.1.4 Consumer goods manufacturers can collaborate with informal traders (1)
- Formal businesses can be service providers for the informal traders (1)
- (2 x 1) (2)
- 8.1.5 They form part of the hidden economy (2)
- Informal traders contribute indirectly to the economy (2)
- Their contribution to the economy cannot be directly measured (2)
- (ANY TWO)** (2 x 2) (4)
- 8.1.6 Cheaper products could be bought closer to the homes (2)
- The quality of products increased (2)
- Consumers preferred the informal traders as they spend less money on transport (2)
- Informal traders expanded their variety of goods (2)
- Consumers refrained from going to crowded places (malls) for fear of getting infected (2)
- (ANY TWO)** (2 x 2) (4)

ACTIVITY 8.2

- 8.2.1 Informal sector is whereby someone makes a living through an unregistered business, or who provides services without a license (1)
[CONCEPT] (1 x 1) (1)
- 8.2.2 7,7% (1) (1 x 1) (1)
- 8.2.3 Street vending – selling vegetables (1)
Flea Market – selling variety of goods (1)
[ANY ONE ACCEPT OTHER RELEVANT ANSWERS TO TRADING] (1 x 1) (1)
- 8.2.4 Poor socio-economic status faced by most of the South Africans (2)
High unemployment rate/ Retrenchments (2)
Relaxed bylaws (2)
Lack of skills/ School dropouts (2)
Mechanisation of farming operations and climatic hazards has caused unskilled rural people to abandon farming and join informal sector (2)
Many large businesses has contributed to the growth of informal trade by sub-contracting to the informal sector (2)
Immigrants are not able to find legal employment and enter into the informal trade to survive (2)
[ANY ONE] (1 x 2) (2)
- 8.2.5 They don't want to pay tax (2)
They don't want to be recognized as illegal immigrants (2)
Non-compliance with regulations (2)
Costly to apply for permits (2)
[ANY ONE] (1 x 2) (2)
- 8.2.6 **Trading permits are required in order to**
Regulate the business (2)
Allocate the businesses specific areas for trading (2)
Encourage partnership between private sector and the informal trader (2)
Provide infrastructure (hawker stall/carts) in areas zoned for informal trading (2)
Assist small businesses to play an active role in providing training (2)
Provide easier access to bank loans (2)
For insurance purposes (2)
Provide storage facilities (2)
Contribute to the income of the city by paying taxes (2)
Provide ablution facilities (2)
Ensure clean/hygienic facilities (2)
Statistical analysis for planning (2)
Prevention of harassment by city officials/ law enforcement officials (2)
[ANY FOUR] (4 x 2) (8)

ACTIVITY 8.3

- 8.3.1 Hawkers were illegally trading on Metrorail property (1)
Health hazard (1)
Financial burden (1)
Littering (1)
[ANY ONE] (1 x 1) (1)
- 8.3.2 Passengers using Metrorail provides a ready market (1) (1 x 1) (1)
- 8.3.3 Excessive littering (1)
Health hazard (1)
More security needed (1)
[ANY TWO] (2 x 1) (2)
- 8.3.4 Poor quality of life/Desperate to earn an income/Poor socio-economic conditions (2)
High unemployment rates are forcing people like her to sell goods just to survive (2)
She lacks the necessary skills to obtain formal employment (2)
Cannot afford to provide higher end goods and services for informal trading (2)
Cannot afford proper facilities (stand) whilst selling her sweets (2)
[ANY ONE] (1 x 2) (2)
- 8.3.5 Provide a proper market area for informal trading to take place (2)
Reduce rental in trading areas (2)
Provide proper waste removal facilities to reduce rubble and waste (2)
Provide short term medium and small enterprise development funding to improve their wares and improve profits (2)
Skills training with the aim of development towards the formal sector (2)
Provision of free health care to informal traders at regular intervals (2)
Interaction with private sector for assistance (2)
Create partnerships with formal business (2)
Provide them with permits (2)
Decriminalize informal trading (2)
Create safe storage facilities (2)
[ANY TWO] (2 x 2) (4)

8.3.6 **The South African Government should encourage informal trading in the future for the following reasons**

There is a large segment of the population that lacks the necessary skills to be employed in the formal sector (2)

The declining economy means that there are fewer opportunities to be employed in the formal sector (2)

There is a developing informal economy in the country that makes an indirect contribution to the GDP (2)

Many unemployed people are gaining an income through informal trading (2)

The goods and services sold through informal trading are often cheaper and increases the purchasing power of the poor (2)

Informal trading encourages purchases by tourists of South African goods at affordable prices (2)

Growth in the informal sector would encourage growth in the primary economic sectors especially with regards to fishing and raw agricultural products (2)

Decreased crime/poverty/food insecurity (2)

Decrease dependence on social welfare (2)

Promotes entrepreneurship (2)

Making goods and services available to the local community (2)

[ANY TWO] (2 x 2) (4)

SECTION 2 - PAST QUESTION PAPER REVISION - CLIMATOLOGY

SESSION 9: Mid Latitude Cyclones. Tropical Cyclones, Anti – Cyclonic Circulation

ACTIVITY 9.1 – MID LATITUDE CYCLONES

9.1.1 Westerly (1) (1 x 1) (1)

9.1.2 Cold front (1) (1 x 1) (1)

9.1.3 **A** (1) (1 x 1) (1)

9.1.4 Ahead of the cold front the air is less dense/lighter (2)
Ahead of the warm front the air is colder/heavier (2)
[ANY ONE] (1 x 2) (2)

9.1.5 Clockwise circulation of air (2)
Position of the low pressure is south of the system (2)
Cold front facing north (2)
Warm front facing south (2)
[ANY ONE] (1 x 2) (2)

9.1.6 (a) Z (2) (1 x 2) (2)

(b) The air behind the cold front is colder than the air in front of the warm front (2)
The cold front symbol is at the apex of the mid-latitude cyclone (2)
[ANY ONE] (1 x 2) (2)

(c) The cold front which is moving faster undercuts/overtakes the warm front (2)
The warm air is forced to rise, resulting in the narrowing of the warm sector (2)
The warm air (in front of the warm front) is completely uplifted (2)
[ANY TWO] (2 x 2) (4)

ACTIVITY 9.2 – MID LATITUDE CYCLONES

- 1.3.1 Winter (1) (1 x 1) (1)
- 1.3.2 June /Date (1)
Cold fronts in the interior of Western/Eastern Cape (1)
[Any ONE] (1 x 1) (1)
- 1.3.3 Northward movement of the high pressure belt (2) (1 x 2) (2)
- 1.3.4 Backing (1) (1 x 1) (1)
- 1.3.5 The wind direction associated with the cold front will change from north-west to south-west as the front moves over the Western Cape (2) (1 x 2) (2)
- 1.3.6 **Positive:**
Brings much needed moisture to the soil (2)
Revival of biodiversity/ecosystem/habitat (2)
Water available for wild life (2)
Water available for growth of natural vegetation (2)
Water allows for more grazing land (2)
Fill up natural aquifers/springs (2)
Negative:
Low-lying areas are flooded (2)
Soil erosion will increase (2)
Destruction of biodiversity/ecosystem/habitat (2)
Damage to natural vegetation (2)
Loss of wild life (2)
Increase salination of rivers (2)
Saturation of soil leads to waterlogged conditions (2)
[ANY FOUR, RESPONSES MUST REFER TO BOTH POSITIVES AND NEGATIVES]
(4 x 2) (8)

ACTIVITY 9.3 – TROPICAL CYCLONES

- 9.3.1 Date /January indicates summer (1)
 Mozambique (1)
 Madagascar (1)
 Beira (in Mozambique) (1)
 South-westerly movement (1)
 Clockwise circulation symbol (1)
 Located over the South Indian Ocean (1)
 Mozambique channel (1)
 Tropical Cyclone (Eloise) (1)
 Map of Southern Africa (1)
[ANY ONE] (1 x 1) (1)
- 9.3.2 Heavy rainfall / Rainfall of 250mm in 24 hours (1)
 Wind speeds up to 140-160 km/hr (1) (2 x 1) (2)
- 9.3.3 Increased frictional drag (2)
 System moves over land (2)
 Decrease in latent heat (2)
 Decrease in moisture levels (2)
[ANY ONE] (1 x 2) (2)
- 9.3.4 Movement over the warm Mozambique channel (2)
 Less friction over Warm Mozambique channel/ ocean (2)
 High temperatures/warm ocean results in increased evaporation (2)
 Increased condensation results in the release of latent heat (2)
 Latent heat drives the system and increases the wind speed (2)
[ANY TWO] (2 x 2) (4)
- 9.3.5 **PRECAUTIONARY MEASURES AND MANAGEMENT STRATEGIES**
 Early warning systems put in place (2)
 Sandbags to reduce flooding (2)
 Reinforcing existing infrastructure (2)
 Awareness and education programmes (2)
 Evacuation protocols and drills (2)
 Stocking up of emergency supplies and necessities (2)
 Identify high lying areas to evacuate people (2)
 Build above flood lines/ coastal zoning (2)
 Tracking the movement of the tropical cyclone
 Good forecasting/ Use of media to update regularly (2)
 Improve accessibility to evacuate people (2)
 Move people to higher ground (2)
 Development of good rescue and emergency services (2)
 Storage/ provision of clean water and food supplies (2)
 Rescue personnel, police, medical personnel on standby (2)
 Maintain coastal vegetation to act as a buffer against storm surges (2)
 Request National and international aid if necessary (2)

[ANY THREE- ACCEPT EXAMPLES]		(3 x 2) (6)
ACTIVITY 9.4 – TROPICAL CYCLONES		
9.4.1	Clockwise movement of air (1) Position of the leading left quadrant (1) Wind direction shown by the symbol of the eye (1) [ANY ONE]	(1 x 1) (1)
9.4.2	Pressure in the centre is significantly below 1000 hPa (972hPa) (1) Well-developed eye (1) The area covered by the tropical cyclone is large (450km- 500km) (1) [ANY TWO]	(2 x 1) (2)
9.4.3	There will be no cloud cover/clear skies (2)	(1 x 2) (2)
9.4.4	Descending air heats up resulting in no condensation (2)	(1 x 2) (2)
9.4.5	(a) Air pressure decrease and wind speed increases (2) (b) Both air pressure and wind speed decreases (2)	(2 x 2) (4)
9.4.6	The strongest wind speeds are experienced in this region (2) It experiences the most intense weather conditions (2) [ANY ONE]	(1 x 2) (2)
9.4.7	When the forward movement combines with the rotation of the system (2)	(1 x 2) (2)
ACTIVITY 9.5 – ANTICYCLONIC CIRCULATION		
9.5.1	Summer (1)	(1 x 1) (1)
9.5.2	The inversion layer is above the escarpment/plateau (2) Wet conditions over the interior (2) Weak descending air (2) [ANY ONE]	(1 x 2) (2)
9.5.3	Plateau (1) Ocean currents (1) Inversion layer (1) Descending air (1) [ANY TWO]	(2 x 1) (2)
9.5.4	Adiabatic heating due to subsiding air (2) As air subsides it compresses and heats up (2) [ANY ONE]	(1 x 2) (2)

9.5.5 **Sketch (A): Summer**

Inversion layer is above the level of the plateau/escarpment (2)

Moist air flows into the interior (2)

Results in more rainfall (2)

Sketch (B): Winter

Inversion layer below the level of the plateau/escarpment (2)

Moist air cannot reach the interior (2)

Results in less or no rainfall (2)

[ANY FOUR – MUST INCLUDE SUMMER AND WINTER CONDITIONS] (4 x 2) (8)

ACTIVITY 9.6 – ANTICYCLONIC CIRCULATION

9.6.1 B Kalahari High/Continental High (1) (1 x 1) (1)

9.6.2 Lower temperatures over the interior causes the air to subside and create a high pressure (2)

Less heating of land surface decreases convection (2)

[ANY ONE] (1 x 2) (2)

9.6.3 Subsiding/descending air heats up and does not allow for condensation to take place (2)

Subsiding/descending air does not release moisture (2)

It is located over a cold ocean (2)

[ANY ONE] (1 x 2) (2)

9.6.4 In summer they occupy a southerly position because the sun is over the Tropic of Capricorn and all pressure systems move south with the apparent movement of the sun (2)

In summer due to the intense heating of the land the high-pressure systems move further out to sea (2)

In winter they occupy a more northerly position as the sun is overhead the Tropic of Cancer and all pressure systems move north with the apparent movement of the sun (2)

In winter they are close to the land because the land is cold (2)

[ANY TWO] (2 x 2) (4)

9.6.5 Inversion layer is above the escarpment and allow the moisture to feed over the interior (2)

Allows warm moist air to rise and condense on the windward side of the escarpment (2)

Intense low pressure over the land in summer leads to the convergence of air (2)

Moist air from the South Indian High feeds into this low pressure over the land (2)

Increased evaporation due to higher temperatures over the Indian in summer and this moisture feeds into the land (2)

South Indian High is away from the coastline and the onshore winds have a greater fetch resulting in more moisture over the land (2)

[ANY THREE] (3 x 2) (6)

SESSION 10: Weather Disturbances and Synoptic Weather maps

ACTIVITY 10.1 - BERGWINDS

- 10.1.1 Kalahari High (1)
 Coastal low (1) Accept Mid-latitude cyclone (1) (2 x 1) (2)
- 10.1.2 Accept in the range 43.9°C to 44,1 °C (1) (1 x 1) (1)
- 10.1.3 The escarpment has a greater vertical height (elevation) (2)
 Greater frictional drag as air moves down the escarpment (increases temperature) (2)
 Air has a greater vertical descent down the escarpment (1200m-0m) and heats up more (2)
 Increased heating (DALR at 1°C/100m) due to vertical distance of the escarpment (2)
 [ANY TWO] (2 x 2) (4)
- 10.1.4 Plants (Natural vegetation / Pasture) dry out due to the hot dry winds (2)
 Reduction of biodiversity (fauna and flora) within the natural environment (2)
 Declining ecosystems will disrupt food chains and food web networks (2)
 Higher evaporation reduces soil moisture content (2)
 Increased loss of moisture in soil will accelerate soil erosion (2)
 The land is left bare and vulnerable and accelerates soil erosion reducing soil fertility (2)
 Higher levels of carbon dioxide will increase atmospheric pollution (2)
 Water from shallow pools, small non-perennial water bodies can evaporate (2)
 Natural vegetation is destroyed by veld fires (2)
 Loss of habitat/damage to ecosystems due to veldfires (2)
 Increase in carbon dioxide as a result of veldfires impacts negatively on physical environment (2)
 Ash of veldfires act as fertilisers for the development and growth of new vegetation (2)
 Veldfires can promote seed germination (2)
 [ANY FOUR] (4 x 2) (8)

ACTIVITY 10.2 – LINE THUNDERSTORMS

- 10.2.1 **A** South Atlantic (1)
 B South Indian (1) (2 x 1) (2)
- 10.2.2 Summer (1) (1 x 1) (1)
- 10.2.3 Line thunderstorms occur in the interior (2)
 Cumulonimbus clouds/lightning/hail (2)
 Moisture front developed (2)
 Air from the east and west reaches the interior (2)
 [ANY ONE] (1 x 2) (2)
- 10.2.4 The boundary (dry line) between two air masses of different moisture content (2)
 [CONCEPT] (1 x 2) (2)
- 10.2.5 Rainfall (1)
 Hail (1) (2 x 1) (2)
- 10.2.6 Convergence of warm moist air from NE/E (Indian ocean) (2)
 Cold dry air from SW/W (Atlantic Ocean) (2)
 Moisture front develops (2)
 Cold dry air undercuts warm moist air (2)
 Warm moist air rises (2)
 Condensation occurs in the eastern side of the moisture front (2)
 Cumulonimbus clouds develops (2)
 [ANY THREE] (3 x 2) (6)

ACTIVITY 10.3 – COASTAL LOW

- 10.3.1 Winter (1) (1 x 1) (1)
- 10.3.2 The presence of the Kalahari High Pressure Cell (in the interior) (1)
 The presence of berg winds (1)
 Kalahari High is close to the surface (1)
 [ANY ONE] (1 x 1) (1)
- 10.3.3 Blows from the Kalahari High Pressure to coastal low (1)
 Blows down the escarpment to coastal low (1)
 Blows down the mountain to the ocean (1)
 [ANY ONE] (1 x 1) (1)

- 10.3.4 (a) A - offshore (1)
B - onshore (1) (2 x 1) (2)
- (b) Lack of moisture because air blows from the land to the sea (2)
Air subsides therefore no condensation (2)
[ANY ONE] (1 x 2) (2)
- (c) **NEGATIVE**
Warm, dry wind increases surface water evaporation (2)
Warm winds dry out the vegetation (2)
Dry vegetation could result/facilitate veld fires (2)
The gusty winds could fan and spread the fire (2)
Veld fires destroy ecosystems/habitats (2)
Biodiversity is reduced (2)
Food chains are disrupted (2)
Destruction of vegetation can result in bare soil and soil erosion (2)
Soil erosion will decrease soil fertility (2)
POSITIVE
Raises the temperature of coastal areas in winter (2)
Veld fires encourage regrowth and regeneration of natural vegetation (2)
[ANY FOUR] (4 x 2) (8)

ACTIVITY 10.4 – SYNOPTIC WEATHER MAPS

- 10.4.1 D (1)
- 10.4.2 B (1)
- 10.4.3 A (1)
- 10.4.4 C (1)
- 10.4.5 B (1)
- 10.4.6 A (1)
- 10.4.7 B (1)
- 10.4.8 B (1) (8 x 1) (8)

SESSION 11: Tertiary Circulation

ACTIVITY 11.1 – VALLEY CLIMATE

- 11.1.1 Z (1)
- 11.1.2 Y (1)
- 11.1.3 Y (1)
- 11.1.4 Z (1)
- 11.1.5 Z (1)
- 11.1.6 Y (1)
- 11.1.7 Z (1) (7 x 1) (7)

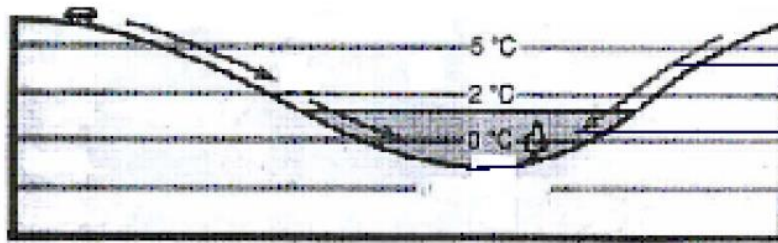
ACTIVITY 11.2 – VALLEY CLIMATE

- 11.2.1 B (1)
- 11.2.2 A (1)
- 11.2.3 B (1)
- 11.2.4 A (1)
- 11.2.5 A (1) (5 x 1) (5)

ACTIVITY 11.3 – VALLEY CLIMATE

- 11.3.1 Anabatic/upslope wind (1) (1 x 1) (1)
- 11.3.2 **1** occurs during the day while **2** occurs at night (2)
At **1** there is upslope movement of air while there is down slope movement of air at **2** (2)
At **1** wind originates when slopes are heated and at **2** there is cooling of slopes (2)
Density of air at **1** is low while density of air at **2** is high (2)
[ANY ONE DIFFERENCE] (1 x 2) (2)
- 11.3.3 Wind **2** (2)
Air moves down slope from high pressure to low pressure (2) (2 x 2) (4)

- 11.3.4 Cold air rolls into the valley and forms an inversion (trap pollutants) (2)
 This forms smog (2)
 Radiation fog/mist/haze also forms (2)
 In winter more **artificial** heating also results in higher pollution levels (2)
[ACCEPT ANY TWO/THREE]



2 marks for arrows showing
 air movement downslope
 2 marks for the location of
 smog on the valley floor

[Maximum of 6 marks for explanation without a diagram]

(4 x 2) (8)

ACTIVITY 11.4 – URBAN CLIMATE

11.4.1 Z (1)

11.4.2 Y (1)

11.4.3 Y (1)

11.4.4 Z (1)

11.4.5 Z (1)

11.4.6 Y (1)

11.4.7 Z (1)

(7 x 1) (7)

ACTIVITY 11.5 – URBAN CLIMATE

11.5.1 Isotherms (1)

11.5.2 12°C (1)

11.5.3 Rural areas (1)

11.5.4 CBD (1)

11.5.5 A to B (1)

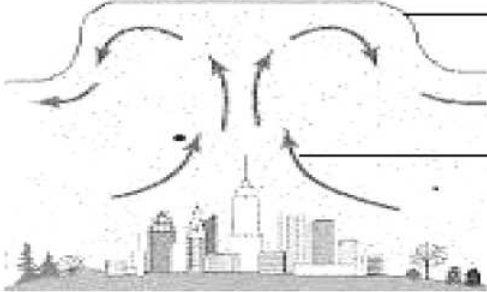
(5 x 1) (5)

ACTIVITY 11.6 – URBAN CLIMATE

11.6.1 3,9 (1) (1 x 1) (1)

11.6.2 Urban heat island (1) (1 x 1) (1)

11.6.3 Heat is trapped by the buildings due to closely spaced building (2)
 Reflective heat is transferred between the buildings (2)
 Limited air flow to disperse of heat (2)
 Heat that cannot escape is absorbed by building (2)
[ANY TWO. ANSWERS MUST RELATE TO BUILDING DENSITY AND NOT BUILDING MATERIALS ACCEPT OTHER REASONABLE ANSWERS] (2 x 2) (4)

11.6.4  2 marks for level high above city/great vertical dimension
 2 marks for air movement that shows rising and divergence
 (2 x 2) (4)

11.6.5 Planting more trees in the urban areas to absorb carbon dioxide (2)
 Establishment of the roof gardens (2)
 The use of white reflective paints or surfaces to prevent heat from being absorbed (2)
 Commercial decentralisation to move shoppers/workers to outlying areas (2)
 Industrial decentralisation to prevent pollution in cities (2)
 Limit industrial activities to daytime only (2)
 Legislation to limit pollution (2)
 Chimney stacks tall enough to release smoke above inversion layer (2)
 Increase the number of water features (2)
 Promote public transport to reduce the number of vehicles in the CBD (2)
 Increase eco-friendly buildings (2)
[ANY TWO] (2 x 2) (4)

SESSION 12: Map work – Paper 1 (Physical Geography)

- 12.1.1 (a) B (1) (1 x 1)
- (b) A (1) (1 x 1)
- (c) C (1) (1 x 1) (3 x 1) (3)
- 12.1.2 *Difference in years:* 2022 – 2014 = 8 years (1)
Mean annual change: 5'(1) West
Total change: 8 x 5 = 40' (1) West
Magnetic declination in 2022: 18°12'
 +(1) 40'
 18°52' West of True North (1) (5 x 1) (5)
- 12.1.3 24° + 18°52' (1)
 = 42°52' (1) (2 x 1) (2)

12.2 – MAP INTERPRETATION

- 12.2.1 B (1) (1 x 1) (1)
- 12.2.2 A (1) (1 x 1) (1)
- 12.2.3 (a) 1 (1)
- (b) Artificial surfaces at **1** absorb more heat (2)
 Natural surfaces at **2** does not absorb a lot of heat (2)
 Artificial production of heat at the industrial area (2)
 Pollution dome created will increase temperatures at **1** (2)
 Higher buildings at **1** trap the heat (2)
[ANY TWO] (2 x 2) (4)
- 12.2.4 (a) Temporary (1) (1 x 1) (1)
- (b) J (1) (1 x 1) (1)
- (c) It would be expensive to build (higher) bridges (2) (1 x 2) (2)
- (d) The river in the area flows in a northerly direction (2)
 Headward erosion will occur in a southerly direction (2)
[ANY ONE] (1 x 2) (2)

12.3 – GEOGRAPHICAL INFORMATION SYSTEMS

- 3.3.1 Vector (1) (1 x 1) (1)
- 3.3.2 Lines, points, and polygons are used to represent the features. (1) (1 x 1) (1)
- 3.3.3 The vineyard and orchards are surrounded by other roads for the distribution of products (2)
 Linked to the national freeway for distribution of goods (2)
 Linked to the railway for transportation/export of bulk products (2)
[ANY ONE] (1 x 2)
- 3.3.4 The run-off will end up in the river through the tributary streams (2)
 The slope of the banks is steep, which will cause faster deposition of loose silt in the river (2)
 The pesticides and insecticides used by farmers will flow easily into the river causing eutrophication (2)
 The area is not buffered, and expansion of the vineyard and orchards closer to the river is not restricted (2)
[ANY TWO] (2 x 2)

SESSION 13 : Map work – Paper 2 (Human Geography)

- 13.1 13.1.1 Larger / Bigger / Increasing (1) (1 x 1) (1)
- 13.1.2 Mean annual change for Louis Trichardt is West/Westwards (1) (1 x 1) (1)
- 13.2 13.2.1 Length = 4,1 (1) cm x 500 [4,0 – 4,2]
 Breadth = 3,8 (1) cm x 500 [3,7 cm – 3,9 cm]
 Area = 2 050 m (1) x 1 900 m (1)
 = 3 8950 000 m² (1)
 (Range: 370 000 m² – 4 095 000 m²)
[Accept other calculation method] (5 x 1) (5)
- 13.2.2 The scale of the orthophoto map is larger (2)
 The scale of the topographic map is smaller (2)
 Orthophoto map scale is 1 : 10 000 and topographic map scale is 1 : 50 000 (2)
[ANY ONE] (1 x 2) (2)
- 13.3 There is no obstruction between **5** and **6** (1)
 The valley forms no obstruction between **5** and **6** (1)
 The slope is concave (1)
 Gentle gradient between **5** and **6** (1)
 Intervisibility between **5** and **6** (1)
[ANY ONE] (1 x 1) (1)

13.4	C (1)		(1 x 1) (1)
13.5	Large stands (2) Planned irregular street pattern (2) Presence of trees and gardens (2) Proximity to recreational areas (2) Houses of different architectural design (2) Views / elevation (2) [ANY TWO]		(2 x 2) (4)
13.6	13.6.1 Answer: Dry-point settlement (1) Reason: Settlement is built on higher ground to avoid flooding (2) Settlement is built away from the river to avoid flooding (2) Built above flood line/flood contour (2) [ANY ONE]		(1 + 2) (3)
	13.6.2 It is situated close to the road for transportation of crops/increased accessibility to the farmstead (2)		(1 x 2) (2)
13.7	N: Nucleated / Clustered (1) S: Isolated / Dispersed (1)		(2 x 1) (2)

GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

13.8	13.8.1 Attribute data: Refers to the description/characteristics (further information) of the location (and shape) of a feature (spatial data) (2) [CONCEPT]		(1 x 2) (2)
	13.8.2 Attribute data (1)		(1 x 1) (1)
13.8.3	It gives descriptions/characteristics (further information) regarding the type of road (2) It gives the description/characteristic (further information) about the road being tarred (2) [ANY ONE]		(1 x 2) (2)
13.9	13.9.1 Creating an area of specific width or distance from an object (2) [CONCEPT]		(1 x 2) (2)
	13.9.2 Avoid flooding along the rivers (1) Minimise loss of crops (1) Prevent any development (1) Ensure river management (1) [ANY ONE]		(1 x 1) (1)