



Province of the  
**EASTERN CAPE**  
EDUCATION

# **NATIONAL SENIOR CERTIFICATE**

**GRADE 12**

**SEPTEMBER 2013**

**GEOGRAPHY P1  
MEMORANDUM**

**MARKS: 300**

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This memorandum consists of 14 pages.

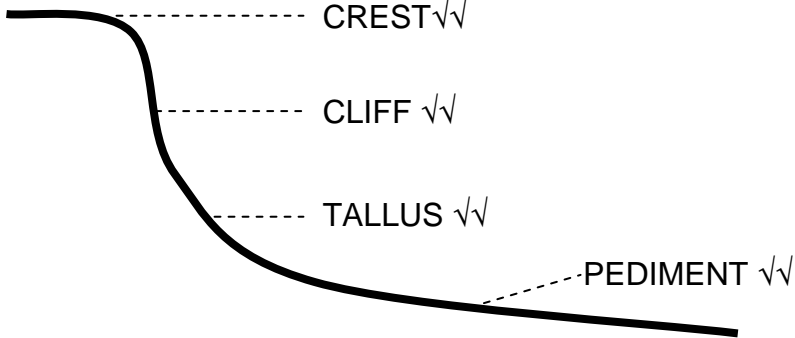
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## SECTION A: PHYSICAL GEOGRAPHY: CLIMATE AND WEATHER, FLUVIAL PROCESSES AND STRUCTURAL LANDFORMS

### QUESTION 1

- 1.1 1.1.1 True ✓✓ (2)  
 1.1.2 False ✓✓ (2)  
 1.1.3 True ✓✓ (2)  
 1.1.4 False ✓✓ (2)  
 1.1.5 True ✓✓ (2)  
 1.1.6 True ✓✓ (2)  
 1.1.7 True ✓✓ (2)  
 1.1.8 False ✓✓ (2)  
 1.1.9 False ✓✓ (2)  
 1.1.10 True ✓✓ (2)
- 1.2 1.2.1 A – Hadley Cell/Tropical cell ✓  
 B – Ferrel Cell/Mid-latitude cell ✓  
 C – Polar cell ✓ (3 x 1) (3)
- 1.2.2 To bring about a balance between temperature and air pressure. ✓✓ (1 x 2) (2)
- 1.2.3 The Ferrel Cell ✓✓  
 South Africa lies along the 30° S latitude and the Ferrel cell originates between 30° – 60° N/S. ✓✓ (2 x 2) (4)
- 1.2.4 • Air rises from the 60° latitude and flows towards the tropics. ✓✓  
 • And descends near 30° latitude and flows back to the 60° latitudes where it meets cold air from the polar region. ✓✓  
 (Any 1 x 2) (2)
- 1.2.5 Condition: Thunderstorms at the equator. ✓  
Reason: Because of rising air. ✓✓  
 High temperatures ✓✓  
 High humidity levels ✓✓  
 OR  
Condition: Dry conditions at 30° N/S. ✓  
Reason: Because of sinking air. ✓✓ (Any 1 + 2) (3)
- 1.3 1.3.1 • Mid-latitude cyclone ✓✓  
 • Cold front ✓✓  
 • Bergwind conditions ✓✓  
 • Low temperature ✓✓  
 • Date/month of June ✓✓ (Any 1 x 2) (2)
- 1.3.2 A – South Indian High ✓  
 B – Coastal low ✓  
 C – South Atlantic High ✓  
 D – Ridge ✓ (4 x 1) (4)

- 1.3.3 Mid-latitude cyclone/temperate cyclone/extra tropical cyclone ✓  
(Any 1 x 1) (1)
- 1.3.4 cyclone family ✓ (1 x 1) (1)
- 1.3.5 West to east/easterly/eastward ✓✓ (Any 1 x 2) (2)
- 1.3.6 Mature stage ✓ (1)
- Wave has deepened/intensified ✓✓
  - Cold front, warm front, warm sector and cold sector is fully developed ✓✓
  - Pressure at centre is below 1 000 hPa ✓✓ (Any 1 x 2)(2) (3)
- 1.3.7 westerlies ✓ (1 x 1) (1)
- 1.4 1.4.1 A – katabatic wind ✓  
B – anabatic wind ✓ (2 x 1) (2)
- 1.4.2 Valley A – at night cold air sinks to the valley bottom ✓✓  
OR  
Valley B – during the day warm air rises up the slope ✓✓  
(Any 1 x 2) (2)
- 1.4.3 Frost ✓ (1 x 1) (1)
- 1.4.4 Warm north-facing slope in the southern hemisphere ✓ (1 x 1) (1)
- 1.4.5 A – occur during the night/when slopes cool of through earth radiation ✓✓  
Downslope wind ✓✓  
OR  
B – occur during the day/when slopes are heated through insolation ✓✓  
Upslope wind (Any 1 x 2) (2)
- 1.4.6 Cold air sinks at night to the bottom of the valley and forces the warm air within the valley to rise. ✓✓  
OR  
Temperature inversion – increase in temperature with an increase in height ✓✓ (Any 1 x 2) (2)
- 1.4.7
- Citrus farming on the valley floor because the cold conditions suits maturing of the crops and destroy insect pests. ✓✓
  - The temperature damages and kills the crops. ✓✓
  - Only frost resistant crops are suitable for this area ✓✓
  - Tubers can be grown in this cold conditions ✓✓ (Any 1 x 2) (2)
- 1.5 1.5.1 1 – large ✓  
2 – small ✓ (2 x 1) (2)
- 1.5.2 1 – bare ✓  
2 – plant cover ✓ (2 x 1) (2)

- 1.5.3 1 – steep ✓  
2 – gentle ✓ (2 x 1) (2)
- 1.5.4 1 – Impermeable ✓  
2 – Permeable ✓ (2 x 1) (2)
- 1.6 1.6.1 When one river captures the headwaters of another river ✓✓ (1 x 2) (2)
- 1.6.2 • The volume of water in the captor river increases ✓✓  
• and it gains more energy and eroding power ✓✓ (2 x 2) (4)
- 1.6.3 (a) C ✓ (1)  
(b) A ✓ (1)  
(c) B ✓ (1)
- 1.7 1.7.1 A – mesa ✓  
B – butte ✓  
C – cuesta/dip slope/homoclinal ridge ✓  
D – dome ✓  
E – granite boulders/tors/rock castle ✓ (5 x 1) (5)
- 1.7.2 • Igneous rock ✓  
• Massive igneous rock ✓  
• Resistant to erosion ✓ (Any 2 x 1) (2)
- 1.7.3 A – large/wide flat-topped hill or ridge ✓✓  
B – small/narrow flat-topped hill or ridge ✓✓ (1 x 2) (2)
- 1.7.4
- 
- (8)
- 1.7.5 B – horizontal rock layers ✓  
C – inclined rock layers ✓ (2 x 1) (2)
- 1.7.6 Barrier to communication ✓✓  
Costly to develop ✓✓ (Any 1 x 2) (2)
- 1.7.7 • Dams constructed at top of dome as water is easily trapped and flows under the influence of gravity ✓✓  
• Lower slopes used for cultivation ✓✓  
• Tourist attraction ✓✓ (Any 1 x 2) (2)

## QUESTION 2

- |     |        |  |             |     |
|-----|--------|--|-------------|-----|
| 2.1 | 2.1.1  | steep ✓✓   |             | (2) |
|     | 2.1.2  | clockwise ✓✓   |             | (2) |
|     | 2.1.3  | right ✓✓   |             | (2) |
|     | 2.1.4  | parallel ✓✓  |             | (2) |
|     | 2.1.5  | summer ✓✓  |             | (2) |
|     | 2.1.6  | headward erosion ✓✓  |             | (2) |
|     | 2.1.7  | pediplain ✓✓   |             | (2) |
|     | 2.1.8  | turbulent flow ✓✓  |             | (2) |
|     | 2.1.9  | undergraded ✓✓   |             | (2) |
|     | 2.1.10 | lopolith ✓✓  |             | (2) |
| 2.2 | 2.2.1  | northern ✓✓  | (1 x 2)     | (2) |
|     | 2.2.2  | East to west/westerly ✓✓ driven by easterlies/tradewinds ✓✓  | (2 x 2)     | (4) |
|     | 2.2.3  | (a) eye ✓✓   | (1 x 2)     | (2) |
|     |        | (b)  |             |     |
|     |        | <ul style="list-style-type: none"> <li>Upward spiralling movement of air creates an artificial wall around the centre ✓✓</li> <li>This prevents surface air from rising ✓✓</li> <li>Hence there is no condensation and cloud development in the eye ✓✓</li> <li>The chimney is associated with subsidence of air ✓✓</li> <li>Subsiding air also prevents the surface air from rising ✓✓</li> </ul> | (Any 1 x 2) | (2) |
|     |        | (c) Lowest/below 1000 hPa/mb/very low ✓✓   | (Any 1 x 2) | (2) |
|     | 2.2.4  | <ul style="list-style-type: none"> <li>A warm extensive ocean surface temperature above 27 °C ✓✓</li> <li>Light and variable winds ✓✓</li> <li>Atmospheric instability ✓✓</li> <li>A small area of low pressure with some closed isobars ✓✓</li> <li>An undisturbed period of several days ✓✓</li> <li>Some upper air trigger action/removal of air aloft ✓✓ (Any 3 x 2)</li> </ul>                |             | (6) |
|     | 2.2.5  | (a) <u>Environment</u>   |             |     |
|     |        | <ul style="list-style-type: none"> <li>Strong wind causes flooding ✓✓</li> <li>Flooding destroys coastal areas ✓✓</li> <li>Heavy rains and flooding increase erosion of agricultural land ✓✓</li> <li>Silt is washed into dams that decrease their water holding capacity ✓✓</li> </ul>  |             |     |
|     |        | (Any reasonable answer)  | (Any 1 x 2) | (2) |

(b) Economy

- Bridges and roads are damaged ✓✓
- Cost of replacing damaged infrastructure is high ✓✓
- Less yields and food shortages ✓✓
- Financial burden to the economy is great because of the import of food ✓✓
- Financial resources are used for repairing infrastructure ✓✓
- Huge losses for insurance companies ✓✓  
(Any reasonable answer)

(Any 2 x 2) (4)

2.3 2.3.1 8:00 – 9:00 ✓✓ (1 x 2)

Reason:

- Subsiding cold air over city traps and prevents pollutants from rising ✓✓
- Low temperature at night produce inversion conditions preventing polluted air from escaping ✓✓
- High level of pollutants released by cars and industries during start of the work day ✓✓

(Any 1 x 2) (4)

2.3.2 14:00 – 15:00 ✓✓ (1 x 2)

Reason:

- Warm air over the city rises due to heating ✓✓
- Cold wind blows in from rural areas and disperse polluted warm air ✓✓

(Any 1 x 2) (4)

2.3.3

- Smoke from factories generate artificial heat ✓✓
- Smoke pollution trap heat in the city ✓✓
- Higher levels of carbon and other gases in the air above the city will also trap heat above the city ✓✓

(Any 2 x 2) (4)

2.3.4 High temperatures in Tshwane (city) and lower temperatures in Faerie Glen (surrounding rural area) ✓✓

(1 x 2) (2)

2.3.5

- Respiratory diseases e.g. asthma ✓
- Skin irritations and allergies/skin disorders ✓
- Heat stress results in heat ailments ✓

(Any 2 x 1) (2)

2.4 2.4.1 P – radial/centrifugal/spider ✓  
Q – rectangular ✓  
R – dendritic ✓

(3 x 1) (3)

2.4.2 Massive igneous rock ✓✓ (1)

Dome raised ✓✓

Streams flow outwards ✓✓ (Any 1 x 2) (3)

2.4.3 3/Three ✓✓ (1 x 2) (2)

2.4.4 1/One ✓✓ (1 x 2) (2)

- 2.4.5
- Gentle slope ✓✓
  - Low rainfall ✓✓
  - High rock porosity ✓✓
  - High rock permeability ✓✓
  - Dense vegetation ✓✓ (Any 2 x 2) (4)
- 2.4.6
- Stream volume at 3 will increase resulting in flooding ✓✓
  - Stream at 3 will bridge the meander loop ✓✓ (Any 1 x 2) (2)
- 2.5 2.5.1 Meandering ✓ (1 x 1) (1)
- 2.5.2
- Lower course/middle course ✓
  - It forms where the gradient is gentle ✓ (1 + 1) (2)
- 2.5.3 (a) 2 ✓ (1 x 1) (1)
- (b) 1 ✓ (1 x 1) (1)
- 2.5.4
- Arrows labelled 3 ✓ (1)
  - Where the river erodes ✓
  - Where the river has the most energy ✓ (Any 1) (2)
- 2.5.5 A-A = 2 ✓  
B-B = 1 ✓  
C-C = 3 ✓ (3 x 1) (3)
- 2.6 2.6.1 Landslide ✓✓ (1 x 2) (2)
- 2.6.2
- Prolonged rainfall ✓✓
  - Building on the slope ✓✓
  - Water and sewerage seeps into the ground ✓✓
  - Removal of vegetation ✓✓
  - Excavation ✓✓
  - Steep slope ✓✓ (Any 2 x 2) (4)
- 2.6.3
- Re-grade the slopes and loading the base ✓✓
  - Provide adequate drainage to prevent the slope washing away by running water on the surface ✓✓
  - Plant vegetation cover to reduce runoff ✓✓
  - Construct walls, ground anchors, nuts and bolts, etc. ✓✓
  - Terracing the slope ✓✓ (Any 2 x 2) (4)
- 2.6.4
- Bury communities, death and injury to people ✓✓
  - Cover soils to prevent loss of farming soil ✓✓
  - Destroy trees and crops ✓✓
  - Block rivers with temporary walls/dam wall breaks causing flooding. ✓✓
  - Disruption of communications/destroy bridges ✓✓
  - Subsidence can damage buildings ✓✓
  - Break pipelines carrying gas or electricity ✓✓ (Any 2 x 2) (4)

## SECTION B: PEOPLE AND PLACES, PEOPLE AND THEIR NEEDS, WATER AND FOOD SECURITY

### QUESTION 3

- 3.1 3.1.1 A ✓✓ Urban expansion (2)
- 3.1.2 C ✓✓ Urban ribbon development (2)
- 3.1.3 B ✓✓ Urban profile (2)
- 3.1.4 B ✓✓ Land restitution (2)
- 3.1.5 D ✓✓ nucleated (2)
- 3.1.6 B ✓✓ Raw material industries (2)
- 3.1.7 C ✓✓ Lesotho Highland project. (2)
- 3.1.8 D ✓✓ Saldanha Bay. (2)
- 3.1.9 C ✓✓ genetically modified foods. (2)
- 3.1.10 C ✓✓ livestock and crop farming. (2)
- 3.2 3.2.1 A – nucleated/clustered ✓  
B – dispersed/isolated ✓ (Any 2 x 1) (2)
- 3.2.2 • Stock farming/Cattle ✓  
• Crop farming/Cultivation ✓ (2 x 1) (2)
- 3.2.3 Social  
• Safety – people live together and support and protect each other ✓✓  
• Exchange ideas, skills and information ✓✓  
• Social contact between farms ✓✓ (Any 1 x 2)
- Economic  
• Basic services provided ✓✓  
• Save money by sharing of farm implements ✓✓ (Any 1 x 2) (4)
- 3.2.4 • The settlement is situated in the southern hemisphere and north-facing ✓✓  
• Aspect – slopes are warmer since they receive direct rays of the sun ✓✓ (2 x 2) (4)
- 3.2.5 • Cattle paths/foot paths – compacted soil ✓  
• Overgrazing ✓  
• Removal of natural vegetation ✓  
• Steep slopes ✓ (Any 2 x 1) (2)
- 3.2.6 • Farming on the banks of the river ✓✓  
• Water available for irrigation ✓✓  
• Land is flat/gentle slope ✓✓  
• Soil/silt is fertile ✓✓ (Any 2 x 2) (4)
- 3.3 3.3.1. • Less congestion/more accessible ✓✓  
• More parking space ✓✓  
• Greater safety ✓✓  
• Greater variety ✓✓  
• Under one roof ✓✓ (Any 2 x 2) (4)



- 3.3.2 Circular ✓✓ (1 x 2) (2)
- 3.3.3 Sector model ✓ (1 x 1) (1)
- 3.3.4 Rural-urban fringe ✓ (1 x 1) (1)
- 3.3.5
- It is found on the outskirts of the city ✓✓
  - No congestion ✓✓
  - Enough space for expansion ✓✓
  - Near roads ✓✓
  - Close to greenbelt ✓✓ (Any 1 x 2) (2)
- 3.3.6 FACTORS THAT FAVOURS
- Along transport route ✓✓
  - Land price is cheaper ✓✓
  - Close to labour ✓✓
  - Away from CBD ✓✓
  - Other reasonable answers (Any 3 x 2) (6)
- PROBLEMS
- Pollution ✓✓
  - Away from railway line ✓✓
  - Decline in land value of surrounding area ✓✓
  - Other reasonable answers (Any 3 x 2) (6) (12)
- 3.4 3.4.1 Food security is a reliable supply of food for a country and its citizens. ✓✓ (1 x 2) (2)
- 3.4.2
- Target beneficiaries are more at risk of experiencing food insecurity ✓✓
  - Women and children in rural areas are more at risk of being effected by HIV/Aids ✓✓
  - While men are often the breadwinners, women and children often do not have a source of income ✓✓
  - Women and children lack the skills for farming ✓✓
  - Child-headed households often have no source of income ✓✓ (Any 2 x 2) (4)
- 3.4.3
- Encourage people to grow their own food or produce their own eggs, milk or meat ✓✓
  - Supporting rural development schemes by providing supplies or equipment ✓✓
  - Creating employment opportunities or ways of generating income ✓✓ (Any 2 x 2) (4)
- 3.4.4
- Use water from the nearby river/ Orange River ✓
  - Groundwater which is pumped from boreholes ✓
  - Collect and store rain water ✓✓ (3 x 1) (3)

- 3.5 3.5.1 2003 ✓✓ (1 x 2) (2)
- 3.5.2 The formal sector created more jobs ✓✓  
Industrial growth ✓✓  
Growth of the economy ✓✓ (Any 1 x 2) (2)
- 3.5.3 Informal sector is informal trading businesses with no fixed business premises and do not pay tax to the receiver of revenue ✓✓  
(1 x 2) (2)
- 3.5.4 No ✓ (1)
- No job security ✓✓
  - The retailing and personal services that this sector provides are not a sustainable means of generating income ✓✓
  - They sell products that are not sustainable resources ✓✓  
(Any 1 x 2)(2) (3)
- 3.5.5
- Spaza shops ✓
  - Street vendors ✓
  - Shoe repairs ✓
  - Shoe cleaning ✓
  - Hairdressers at home ✓ (Any 2 x 1) (2)
- 3.6 3.6.1
- Rivers/catchment areas ✓
  - Dams ✓
  - Wetlands ✓
  - Groundwater ✓ (Any 2 x 1) (2)
- 3.6.2
- Increasing population ✓
  - Urbanisation ✓
  - Industrialisation ✓
  - Wasteful use of water ✓
  - Water pollution ✓ (Any 2 x 1) (2)
- 3.6.3 REASONS FOR WATER SHORTAGES
- The supply of water as a renewable resource is uneven ✓✓
  - South Africa is a semi-arid region with below average rainfall ✓✓
  - Rainfall is uneven and irregular as the west side receives less rain than the east ✓✓
  - There are only a few big rivers and many rivers are non-perennial ✓✓  
(3 x 2)(6)

## WATER MANAGEMENT

- Protecting vegetation in catchment areas and on river banks ✓✓
- Removing water-guzzling invasive alien plants ✓✓
- Protect wetlands which control floods and filter water ✓✓
- Building dams to store water and regulate the flow of water ✓✓
- Long term planning to meet the growing water demands ✓✓
- Develop innovative technologies such as water harvesting and water recycling ✓✓
- Introduce appropriate water pricing systems to control use ✓✓

(3 x 2)(6) (12)

**[100]**

## QUESTION 4

- 4.1 4.1.1 wet point ✓✓ (2)
- 4.1.2 linear ✓✓ (2)
- 4.1.3 break-of-bulk point ✓✓ (2)
- 4.1.4 range ✓✓ (2)
- 4.1.5 site ✓✓ (2)
- 4.1.6 balance of payment ✓✓ (2)
- 4.1.7 greenfield sites ✓✓ (2)
- 4.1.8 import substitution ✓✓ (2)
- 4.1.9 socio-economic injustice ✓✓ (2)
- 4.1.10 multinational corporations ✓✓ (2)
- 4.2 4.2.1 The area is flat allowing for easy construction of infrastructure. ✓✓ (1 x 2) (2)
- 4.2.2
- They want to live away from the urban areas ✓✓
  - They want to enjoy peace and quiet on the farm ✓✓
  - Many want to enjoy being close to nature ✓✓ (Any 1 x 2) (2)
- 4.2.3 ADVANTAGE
- Increase in revenue ✓✓
  - Create jobs ✓✓
  - Reduces rural depopulation ✓✓
  - Will meet people ✓✓ (Any 1 x 2)(2)
- DISADVANTAGE
- Reduces area available for farming/food production ✓✓
  - Interest will shift away from farming ✓✓
  - Resulting in a shortage of agricultural space ✓✓ (Any 1 x 2)(2) (4)

## 4.2.4 EFFECT OF CATTLE DISEASES

- Outbreak of cattle diseases will lead to isolation of area ✓✓
- Cattle die and the economy suffer huge financial losses ✓✓
- Trade between the region and the rest of the country will be halted ✓✓. (Any 2 x 2)(4)

## EFFECT OF VELDFIRES

- Natural vegetation destroyed ✓✓
- Animal feed to be bought/farming become more costly ✓✓
- Province can declare the area as a natural disaster area ✓✓ (Any 1 x 2)(2)

## WAYS TO ASSIST FARMERS

- Compensate farmers for losses from a natural disaster fund ✓✓
- Seek foreign assistance for aid e.g. World Bank ✓✓
- Release funds even on a local level ✓✓
- Provide farmers with stock feed ✓✓ (Any 3 x 2)(6) (12)

4.3 4.3.1 CBD ✓✓ (1 x 2) (2)

4.3.2 Tall buildings ✓✓  
High building density ✓✓ (2 x 2) (4)

4.3.3 Commercial decentralisation ✓✓ (1 x 2) (2)

4.3.4 Sphere of influence will decrease ✓✓ (1 x 2) (2)

4.3.5

- Zone of change ✓✓
- Zone of decay ✓✓
- Mixed zone ✓✓
- Twilight zone ✓✓ (Any 1 x 2) (2)

4.3.6

- Houses are old ✓✓
- Social decay ✓✓
- Overcrowding ✓✓
- Crime ✓✓
- Congestion ✓✓
- Pollution ✓✓
- Expensive land ✓✓ (Any 2 x 2) (4)

4.3.7

- Empty buildings occupied by vagrants ✓✓
- Landlords do not maintain services ✓✓
- High rent – tenants cannot pay and move out ✓✓ (Any 1 x 2) (2)

- 4.3.8
- Prevent uncontrolled urban expansion/urban sprawl ✓✓
  - Beautifies the area ✓✓
  - Reduces the temperature of the city ✓✓
  - Reduces air and noise pollution ✓✓
  - Purifies the atmosphere ✓✓
  - Recreation area for urban inhabitants ✓✓
  - Habitat for wild species ✓✓
- (Any 1 x 2) (2)
- 4.4 4.4.1 Tertiary activities ✓✓ (1 x 2)(2)
- The availability of skilled labour ✓✓
  - Financing available/capital ✓✓
  - Infrastructure ✓✓
- (Any 2 x 2)(4) (6)
- 4.4.2 Primary activities ✓✓ (1 x 2) (2)
- 4.4.3
- Provide resources for secondary activities ✓✓
  - Provide food to feed people ✓✓
  - Provide jobs ✓✓
- (Any 2 x 2) (4)
- 4.4.4 PROMOTING FACTORS
- A dense network of highways, roads and railroads ✓✓
- Coastal ports for export to foreign markets ✓✓
- A large local market as well as foreign markets ✓✓
- The availability of a huge labour force-skilled and unskilled ✓✓
- (Any 3 x 2) (6)
- LIMITING FACTORS
- Distances to foreign markets increase export costs ✓✓
- The majority of people in the country has a low purchasing power ✓✓
- Labour costs and strikes ✓✓
- The 'brain drain' has resulted in the loss of skilled workers ✓✓
- Skills shortage resulting from high absenteeism due to ill health or high mortality rate because of HIV/Aids ✓✓
- (Any 3 x 2) (6)
- 4.5 4.5.1 To encourage South Africans to buy South African products and services which promote job creation ✓✓ (1 x 2) (2)
- 4.5.2 Increased the demand for local products ✓✓
- Safeguards employment opportunities ✓✓
- Stimulates economic growth ✓✓
- Creates more job opportunities ✓✓
- (Any 2 x 2) (4)
- 4.5.3
- The uneven distribution of wealth ✓✓
  - The widening gap between developed and developing countries ✓✓
- (2 x 2) (4)

- 4.5.4
- More aid and direct investment helps economic development ✓✓
  - More economic opportunities ✓✓
  - Cheaper products available to consumers ✓✓
  - More choices for consumers ✓✓
  - Products are standardised and quality improves ✓✓
  - Everyone shares in the benefits of technology ✓✓ (Any 2 x 2) (4)
- 4.5.5
- Local content/at least 50% of the production cost must belong to South Africa ✓✓
  - High quality of products ✓✓
  - Fair labour practise ✓✓
  - Products must be environmentally friendly ✓✓ (Any 1 x 2) (2)
- [100]

**GRAND TOTAL: 300**

