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# basic education

Department:  
Basic Education  
**REPUBLIC OF SOUTH AFRICA**

## **NATIONAL SENIOR CERTIFICATE**

**GRADE 12**

**GEOGRAPHY P1**

**NOVEMBER 2016**

**MEMORANDUM**


**MARKS: 225**

**This memorandum consists of 21 pages.**

## Marking Guidelines

The following marking guidelines have been developed to standardise marking in all provinces.

### Marking

- ALL selected questions MUST be marked, irrespective of whether it is correct or incorrect
- Candidates are expected to make a choice of THREE questions to answer. If all questions are answered, ONLY the first three questions are marked.
- A clear, neat tick must be used: ✓
  - If ONE mark is allocated, ONE tick must be used: ✓
  - If TWO marks are allocated, TWO ticks must be used: ✓✓
  - The tick must be placed at the FACT that a mark is being allocated for
  - Ticks must be kept SMALL, as various layers of moderation may take place
- Incorrect answers must be marked with a clear, neat cross: ✕
  - Use MORE than one cross across a paragraph/discussion style questions to indicate that all facts have been considered
  - Do NOT draw a line through an incorrect answer
  - Do NOT underline the incorrect facts
- Where the maximum marks have been allocated in the first few sentences of a paragraph, place an  over the remainder of the text to indicate the maximum marks have been achieved

For the following action words, ONE word answers are acceptable: **give, list, name, state, identify**

For the following action words, a FULL sentence must be written: **describe, explain, evaluate, analyse, suggest, differentiate, distinguish, define, discuss, why, how**

The following action words need to be read within its context to determine whether a ONE word answer or FULL sentence is required: **provide, what, tabulate**

### Totalling and transferring of marks

- Each sub-question must be totalled
  - Each question has six sub-sections, therefore six sub-totals per question required
  - Sub-section totals to be written in right hand margin at the end of the sub-section and underlined
  - Sub-total must be written legibly
  - Leave room to write in moderated marks on different levels
- Total sub-totals and transfer total to top left hand margin next to question number
- Transfer total to cover of answer book

### Moderation

Marking on each level of moderation is done in the same way as the initial marking. All guidelines for marking must be adhered to.

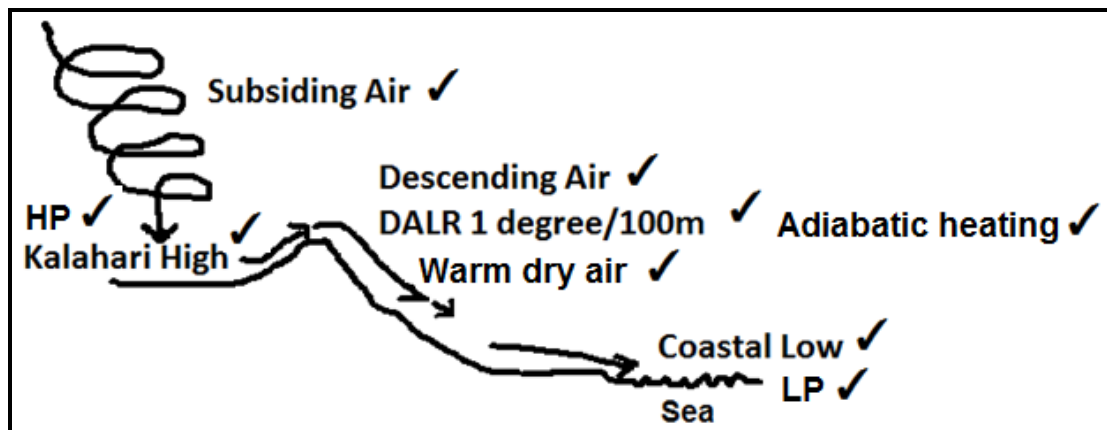
If a mark for a sub-question is changed after moderation, the moderator must strike through the marker's mark and write down the new mark. 44 16

**SECTION A: CLIMATE, WEATHER AND GEOMORPHOLOGY****QUESTION 1**

- 1.1 1.1.1 Heavy rainfall/(thunder)showers (1)
- 1.1.2 Area around the eye/Area around B (1)  
Eye wall/A (1)  
[ANY ONE]
- 1.1.3 Cumulonimbus/Cb (1)
- 1.1.4 Convergence (1)  
Subsidence (1)  
[ANY ONE]
- 1.1.5 Air moves towards a zone of low pressure (1)  
Upper air divergence results in subsidence (1)  
[ANY ONE]
- 1.1.6 B/eye (1)  
Centre of the tropical cyclone (1)  
[ANY ONE]
- 1.1.7 Upper air divergence causes air to subside/cool air is heavy (1)  
Intense low pressure causes air to be sucked in and subside (1)  
[ANY ONE] (7 x 1) (7)
- 1.2 1.2.1 Lower course/old stage/plain stage (1)
- 1.2.2 Undercut slope/outer slope/outer bank/cut bank/cut slope/river cliff (1)
- 1.2.3 There is a slow movement of water (1)  
Carrying capacity decreases (1)  
The shallowness of the bank (1)  
[ANY ONE]
- 1.2.4 Concave (1)
- 1.2.5 Width (1)  
Depth (references to deep) (1)  
Bank shapes (1)  
Symmetry (1)  
[ANY ONE]
- 1.2.6 Erosion (1)
- 1.2.7 An oxbow lake has water (1)/a meander scar is dry (1)  
[ANY ONE]
- 1.2.8 The (meander) neck (1) (8 x 1) (8)

- 1.3 1.3.1 The presence of the high pressure cell (Kalahari/Continental High) over the interior of over the land (1)  
The presence of the coastal low pressure along the coast (1)  
The approaching cold front/mid latitude cyclone (1) (2 x 1) (2)

1.3.2



4 marks for ANY FOUR labels (as seen above)

(4 x 1) (4)

- 1.3.3 Kalahari High is dominant over the land in Winter (2)  
A strong pressure gradient exists between inland and coastal regions (2)  
Cold fronts dominate in Winter (2)  
The pressure belts move northwards (2)  
[ANY ONE] (1 x 2) (2)

- 1.3.4 Extremely hot dry winds are associated with fire hazards on the farms (2)  
People will be displaced as a result of veld fires (2)  
Fire risks as a result of berg winds increase insurance payments (2)  
Crops will be destroyed (2)  
Livestock burnt to death (2)  
Destruction of grazing land (2)  
Farmers can be left without farming equipment as a result of fires (2)  
Farming production decreases/reduces productivity (2)  
Causes loss of income (2)  
Many subsistence farmers in the area left destitute (2)  
Subsistence farmers have no food resources (2)  
Discomfort because of the higher temperatures (2)  
Dehydration of workers (2)  
More water will be used for irrigation and will have a financial implication (2)  
Vegetation will be dried out by the wind (2)  
Reduces the quality of soil (2)  
Accelerates soil erosion (2)  
[ANY FOUR] (4 x 2) (8)

- 1.4 1.4.1 The presence of the cold front close to the land (1)  
The mid-latitude cyclone is close to the land (1)  
[ANY ONE] (1 x 1) (1)
- 1.4.2 X (1) (1 x 1) (1)
- 1.4.3 Heavy rainfall/Thunderstorms (2)  
Thunder/Lightning (2)  
Extremely/Very low temperatures (2)  
Possible snowfalls (2)  
Hail (2)  
Gale force/Strong winds (2)  
Cumulonimbus clouds/Thick clouds (2)  
[ANY TWO] (2 x 2) (4)
- 1.4.4 Flooding occurs which causes the destruction of houses and property (2)  
Soil erosion results in the washing away of topsoil (2)  
Roads inaccessible due to the heavy rain (2)  
Extreme cold weather forces people to use open fires and gas (2)  
Vulnerable to fire and the burning of their shacks (2)  
Strong winds blow away shacks and leave the inhabitants homeless (2)  
Homeless/Destitute inhabitants (2)  
People are going to fall ill (2)  
Increase in electrocutions due to illegal connections (2)  
Traumatised due to loss of income (2)  
Due to the flooding residents will be forced to evacuate (2)  
Costly to replace losses (2)  
Lack of clean/safe water (2)  
Can lead to water borne diseases (2)  
[ANY TWO] (2 x 2) (4)
- 1.4.5 Cape Town will experience more severe weather conditions because the cold front is very close by (2)  
Mossel Bay will experience less severe weather conditions as it is in the warm sector/further away from the cold front (2)  
At Cape Town onshore flow of air will result in more cloud formation/precipitation (2)  
At Mossel Bay offshore wind will result in cloudless skies/no precipitation (2)  
[ANY ONE ON EACH PLACE] (2 x 2) (4)
- 1.5 1.5.1 An area drained by a river and its tributaries (1)  
[CONCEPT] (1 x 1) (1)
- 1.5.2 A (1) (1 x 1) (1)
- 1.5.3 More direct run-off (2)  
Heavy rainfall (2)  
Steep slopes (2)  
Sparse vegetation (2)  
Impermeable underlying rock/non-porous rock (2)  
Saturated soil (2)  
[ANY ONE] (1 x 2) (2)

- 1.5.4 3<sup>rd</sup> order (2) (1 x 2) (2)
- 1.5.5 (a) The lower the order, the shorter the streams (2)  
OR  
The higher the order, the longer the streams (2) (1 x 2) (2)
- (b) The lower the order, the more the number of streams of that order (2)  
OR  
The higher the order the fewer the number of streams of that order (2)  
OR  
A river that has more/many streams has a higher stream order (2)  
(1 x 2) (2)
- 1.5.6 In **A** all the first order/fingertip streams will dry up during a drought (2)  
This will change the stream order at **Y** to a lower value (2) (2 x 2) (4)
- 1.6 1.6.1 Ungraded profile (1) (1 x 1) (1)
- 1.6.2 Lake (1)  
Waterfall (1)  
Knickpoint (1)  
Rock outcrops (1)  
[ANY ONE] (1 x 1) (1)
- 1.6.3 A drop in the original sea level (2)  
Presence of knick points/waterfalls (2)  
Ungraded profile (2)  
A sudden change in gradient (2)  
[ANY ONE] (1 x 2) (2)
- 1.6.4 **Description/Change**  
The meander will become incised/entrenched (2)  
The meander will develop steeper sides (2)  
Will form a cut-off meander/ox bow lake (2)  
[ANY ONE CHANGE]
- Reason**  
The amount of energy of the river would increase (2)  
The velocity of water flowing within the meander increases (2)  
The rate of downward/vertical erosion in the meander will increase (2)  
A stronger flow will result in the river cutting through the meander neck (2)  
[ANY ONE REASON] (2 x 2) (4)

1.6.5 Processes creating the steep gradient in the upper course

Headward/Backward erosion of knickpoints will increase the steepness of the slope (2)

Downward erosion creates a steep gradient (2)

In the upper course water flow is mostly turbulent (2)

The stream has enough energy to carry larger particles (2)

Larger particles increase downwards erosion (2)

Processes creating the gradual gradient in the lower course

Lateral erosion will lead to a more gradual gradient (2)

Sediments are deposited in the lower course (2)

In the lower course water flow is laminar (2)

The carrying capacity is reduced due to the wider river channels (2)

This increases the friction on a river bed and sides and slows water flow resulting in greater deposition rates (2)

[ANY FOUR. MUST REFER TO BOTH STEEP GRADIENT AND GRADUAL GRADIENT]  
(4 x 2) (8)  
**[75]**



**QUESTION 2**

- 2.1 2.1.1 day (1)
- 2.1.2 lower (1)
- 2.1.3 increases (1)
- 2.1.4 multiple reflections of heat (1)
- 2.1.5 increases (1)
- 2.1.6 decreases (1)
- 2.1.7 less (1)
- 2.1.8 more (1) (8 x 1) (8)
- 2.2 2.2.1 X (1)
- 2.2.2 Y (1)
- 2.2.3 X (1)
- 2.2.4 Z (1)
- 2.2.5 X (1)
- 2.2.6 Z (1)
- 2.2.7 Y (1) (7 x 1) (7)
- 2.3 2.3.1 The direction which the slope faces in relation to the sun rays (1)  
The orientation of the slope with regard to the sun rays (1)  
[CONCEPT] (1 x 1) (1)
- 2.3.2 North-facing slope/southern slope (1) (1 x 1) (1)
- 2.3.3 (a) Being in the shadow zone it experiences lower temperatures (2)  
It is subjected to lower evaporation rates (2)  
It does not receive direct sunlight (2)  
[ANY ONE] (1 x 2) (2)
- (b) The slope does not receive any sun's rays as it is a south-facing slope  
and would have lower average temperatures/cooler temperatures (2)  
The slope has a relatively steeper gradient (2)  
The dampness of the slope (2)  
[ANY ONE] (1 x 2) (2)

- 2.3.4 The slope is gentle and therefore easier to build on flat land (2)  
 Close to fertile soil (2)  
 Close to water/dam (2)  
 Farmer wants to be closer to the crops (2)  
 Close to roads for easier access (2)  
 Farm house is close to the golf course (2)  
 [ANY ONE] (1 x 2) (2)
- 2.3.5 Katabatic winds form at night/cooler air sinks to the bottom at night (2)  
 Cold air collects on the valley floor (2)  
 The temperature of the cold air on the valley bottom can result in frost /frost pockets form (2)  
 Crops that are not frost resistant could die (2)  
 Might experience radiation fog (2)  
 Reduces visibility (2)  
 Cold conditions and fog impact negatively on health (2)  
 No advantage of thermal belt (2)  
 [ANY FOUR] (4 x 2) (8)
- 2.4 2.4.1 Kalahari High (1)  
 Continental High (1)  
 [ANY ONE] (1 x 1) (1)
- 2.4.2 Coastal low (1) (1 x 1) (1)
- 2.4.3 (a) It occurs during winter (2)  
 It exists due to the subsiding air towards the surface of the earth (2)  
 Located in the sub-tropical high pressure belt (2)  
 Its exists in the semi-permanent belt of anticyclones (2)  
 Associated with the subsiding between the Hadley and Ferrell cell (2)  
 [ANY ONE] (1 x 2) (2)
- (b) Stable conditions (2)  
 Dry air (2)  
 Clear skies (2)  
 No/little rainfall (2)  
 Possible frost at night (2)  
 Little wind (2)  
 Large temperature range (2)  
 [ANY TWO] (2 x 2) (4)
- 2.4.4 (a) Air rotates clockwise around the coastal low (2)  
 The air moves from the High pressure to the low pressure (2)  
 [ANY ONE] (1 x 2) (2)
- (b) Air descends down the Escarpment towards the coastal low (2)  
 Descending air heats up adiabatically (2)  
 The possibility of berg winds will increase the temperatures (2)  
 [ANY TWO] (2 x 2) (4)

- 2.5 2.5.1 The way in which streams are arranged within a drainage basin/The surface pattern formed by a river and its tributaries (1)  
[CONCEPT] (1 x 1) (1)
- 2.5.2 A. Dendritic (1)  
B. Rectangular (1) (2 x 1) (2)
- 2.5.3 A – Dendritic  
It resembles the branches of a tree (2)  
The tributaries join the main stream at acute/small angles (2)  
[ANY ONE]  
B – Rectangular  
Rivers have right angle bends (2)  
The tributaries intersect the main river at 90° (2)  
The river flows along the joints and cracks on the overlying rocks (2)  
[ANY ONE] (2 x 2) (4)
- 2.5.4 Drainage Pattern **A** develops where the underlying rocks are horizontal/  
uniformly resistant to rocks (2)  
Drainage Pattern **B** develops on well jointed and cracked rocks (2) (2 x 2) (4)
- 2.5.5
- 
- Diagram must show:**
- Straight flowing main stream ✓ ✓*
- Short tributaries joining the main stream at 90° angles ✓ ✓*
- (2 x 2) (4)
- 2.6 2.6.1 The river channel flows on a gentle gradient (1)  
The type of flow is laminar (1)  
River relatively wide (1)  
Fluvial formations of sand islands (1)  
Braided streams (1)  
Flood plains (1)  
Meander (1)  
Leveés (1)  
Evidence of deposition (1)  
[ANY TWO] (2 x 1) (2)
- 2.6.2 (a) The point where two rivers join (1)  
[CONCEPT] (1 x 1) (1)
- (b) Two streams converge increasing volume of water (2)  
The gentle gradient (2)  
The river flows at the same level as the river banks (2)  
Colliding rivers at the confluence slows down the flow (2)  
[ANY ONE] (1 x 2) (2)

- 2.6.3 They absorb water through their roots during the time of floods (2)  
They promote infiltration of flood water (2)  
The trees will slow down the flow of water towards the flood plain (2)  
The trees stabilise the banks assisting in the formation of leveés (2)  
[ANY ONE] (1 x 2) (2)
- 2.6.4 Regular flooding deposits fertile soil/silt on the flood plain (2)  
Increases the volume of water in the river to dilute the pollution (2)  
Removes water borne diseases in the river (2)  
Removal of accumulated debris in the river reducing pollution (2)  
Larger volume of water maintains flow of river/Constant flow of water (2)  
Unblock the river mouth (2)  
Building up and/or maintaining levees (2)  
Increases moisture levels of soil on flood plain and enhance vegetation growth (2)  
Raises the water table to increase access to groundwater (2)  
Removal of silt build up will maintain flow levels (2)  
Maintains and improves biodiversity (2)  
It will maintain the aesthetic appeal if the river stays in its natural state (2)  
Removal of polluted water from upstream industrial activities (2)  
Removal of harmful chemicals from agricultural activities (2)  
Prevents eutrophication from taking place improving oxygen levels (2)  
Regular flooding will remove alien vegetation away (2)  
[ANY FOUR] (4 x 2) (8)  
**[75]**

**SECTION B: RURAL AND URBAN SETTLEMENTS AND SOUTH AFRICAN ECONOMIC GEOGRAPHY****QUESTION 3**

- 3.1 3.1.1 Rural-urban migration (1)
- 3.1.2 Counter urbanisation (1)
- 3.1.3 Urban expansion (1)
- 3.1.4 Transition zone (1)
- 3.1.5 Gentrification (1)
- 3.1.6 Greenbelt (1)
- 3.1.7 Regeneration (1)
- 3.1.8 Urbanisation (1) (8 x 1) (8)
- 3.2 3.2.1 decentralisation (1)
- 3.2.2 spatial development initiatives (1)
- 3.2.3 bridge (1)
- 3.2.4 heavy (1)
- 3.2.5 secondary (1)
- 3.2.6 quaternary (1)
- 3.2.7 raw-material (1) (7 x 1) (7)
- 3.3 3.3.1 Situated on a high-lying area/Higher up the mountain slope (1)  
Far from the water source (river) (1)  
[ANY ONE] (1 x 1) (1)
- 3.3.2 Live close to one another/Social Interaction (1)  
Safety and security (1)  
Easy access to help in time of emergency (1)  
Sharing of ideas/Community involvement (1)  
Sharing of equipment (1)  
Sharing of workloads (1)  
[ANY TWO] (2 x 1) (2)

- 3.3.3 (a) Linear settlement (1) (1 x 1) (1)
- (b) Individual farmers need access to the road (2)  
Limited by the availability of flat land (2)  
[ANY ONE] (1 x 2) (2)
- (c) At C farming is practised on steep slopes (2)  
Heavy rain increases surface run-off (2)  
Loosely bound soil is easily removed by surface run-off (2)  
No trees to trap run-off (2)  
Removal of natural vegetation that leads to soil erosion (2)  
Limited contour ploughing due to long narrow farmland (2)  
Monoculture will lead to increased soil erosion (2)  
Limited space will lead to over cultivation/over cropping (2)  
[ANY TWO] (2 x 2) (4)
- 3.3.4 It will change from a village to a town/It will move up in the hierarchy (2)  
The village will be more accessible to the city and could result in counter-urbanisation (2)  
It will change from unifunctional to multifunctional activities (2)  
It will provide more high-order services and functions (2)  
Sphere of influence will increase (2)  
[ANY TWO] (2 x 2) (4)
- 3.4 3.4.1 A temporary settlement that is illegally/unplanned established/made from a variety of building materials/lack of infrastructure (1)  
[CONCEPT] (1 x 1) (1)
- 3.4.2 Water (1)  
Sanitation (1)  
Proper roads (1)  
Electricity (1)  
Waste collection (1)  
Health (1)  
Education (1)  
Safety (1)  
Formal housing (1)  
[ANY ONE] (1 x 1) (1)
- 3.4.3 Government does not supply the informal settlement with electricity as it is a temporary settlement (2)  
Informal settlement inhabitants are unable to afford to pay for electricity (2)  
Easy access to connect illegally (2)  
Those with electricity make deals to benefit themselves with those that don't (2)  
A culture of non-payment for electricity (2)  
Lack of inspections and monitoring by electricity providers (2)  
[ANY TWO] (2 x 2) (4)

- 3.4.4 It is dangerous to connect electricity illegally (2)  
 Illegal connection of electricity can cause fire and death in the informal settlement (2)  
 Illegal/Breaking by-laws/Non-payment of service (2)  
 Local government loses income (2)  
 [ANY ONE] (1 x 2) (2)

3.4.5 **Natural Environment**

- Removing natural vegetation creates soil erosion/Livestock destroys the environment by causing soil erosion (2)  
 Using open fires cause air pollution (2)  
 Dumping of wastes in the rivers causes water pollution (2)  
 No proper sewage therefore ground water will be contaminated (2)  
 Loss of biodiversity/Destruction of ecosystems (2)  
 Littering encourages rodents which increases the spread of diseases (2)

**Social Environment**

- River used for a variety of domestic/recreational purposes (2)  
 Littering which promotes unhygienic conditions (2)  
 All of the above lead to the environment that is aesthetically not pleasing to the eye (2)  
 The crime rates will increase (2)  
 The overcrowding of houses will spread diseases (2)  
 Social evils will increase (2)

**Economic Environment**

- Property values around the informal settlement will decrease (2)  
 High costs of rehabilitation of the natural environment (2)

[ANY FOUR] (4 x 2) (8)

- 3.5 3.5.1 Increase in input costs such as labour (1)  
 Lower productivity levels (1)  
 Energy-related costs (1)  
 Downturn (drop) in commodity prices (1)  
 [ANY TWO] (2 x 1) (2)

- 3.5.2 High temperatures experienced during mining operation (2)  
 Poor ventilation and inadequate oxygen for the miners (2)  
 Poor quality of air/dust (2)  
 Exposure to poisonous gases (2)  
 Possible flooding (2)  
 Rock falls/being trapped below the surface (2)  
 Gas explosions (2)  
 Fire (2)  
 Being trapped below the surface (2)  
 Sinkholes (2)  
 Tremors (2)  
 Rock bursts (2)  
 [ANY ONE] (1 x 2) (2)

- 3.5.3 Labour strikes for wage increases (2)  
 Danger allowance/payment/subsidy (2)  
 Higher HIV/Aids prevalence results in quick turnover of labour (2)  
 High costs of training new labourers (2)  
 Higher medical costs for labourers with HIV and Aids (2)  
 Costly additional benefits – housing/education/medical aid/compensation for mine accidents/pension funding/insurance (2)  
 Law suits and class actions (2)  
 [ANY TWO] (2 x 2) (4)

3.5.4 **Direct contribution**

- Taxes from mines stimulate the economic growth and development (2)  
 Providing employment, contributing to the tax base (2)  
 Earns foreign capital from international buyers (2)  
 More investors as a result of exports (2)

**Indirect contribution**

- Development of industries that supply the mining industry with machinery (2)  
 Multiplier effect – mining leads to growth of other service sectors (2)  
 Beneficiation of other products/Mining produces raw materials for industry (2)  
 Transnet is able to improve existing rail infrastructure and increase rail networks (2)  
 Ports generates income from transporting mining products (2)  
 Generates more infrastructure (2)  
 Employed people have more buying power (2)  
 Increased skills development (2)  
 Tourism will increase (2)

[ANY FOUR. MUST REFER TO DIRECT AND INDIRECT CONTRIBUTIONS]

(4 x 2) (8)

- 3.6 3.6.1 Hawkers were illegally trading on Metrorail property (1)  
 Health hazard (1)  
 Financial burden (1)  
 Littering (1)  
 [ANY ONE] (1 x 1) (1)
- 3.6.2 Passengers using Metrorail provides a ready market (1) (1 x 1) (1)
- 3.6.3 Excessive littering (1)  
 Health hazard (1)  
 More security needed (1)  
 [ANY TWO] (2 x 1) (2)



- 3.6.4 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)
- 3.6.5 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)  
 Decriminalise informal trading (2)  
 Create safe storage facilities (2)  
 [ANY TWO] (2 x 2) (4)
- 3.6.6 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)

**[75]**

**QUESTION 4**

- 4.1 4.1.1 CBD (1)
- 4.1.2 heavy (1)
- 4.1.3 growth (1)
- 4.1.4 on the outskirts of cities (1)
- 4.1.5 one-way streets (1)
- 4.1.6 green belts (1)
- 4.1.7 informal settlements (1) (7 x 1) (7)
- 4.2 4.2.1 A/primary (1)
- 4.2.2 D/Transport (1)
- 4.2.3 C/export (1)
- 4.2.4 C/bread (1)
- 4.2.5 A/PWV (1)
- 4.2.6 B/motor vehicle (1)
- 4.2.7 C/bridge(1)
- 4.2.8 A/Spatial Development Initiatives (1) (8 x 1) (8)
- 4.3 4.3.1 Centrally located (1)  
Accessible (1)  
Tall buildings/skyscrapers (1)  
High building density (1)  
High land values (1)  
Commercial and financial activities (1)  
Predominantly high order functions (1)  
High volume of traffic (1)  
Historically older buildings (1)  
Public transport terminals (1)  
Overcrowded (1)  
Grid street pattern (1)  
[ANY TWO] (2 x 1) (2)
- 4.3.2 Accessibility to the CBD/road/public transport (2)  
Saves time and transport costs to be close to the road (2)  
More customers /larger threshold populations from passing traffic (2)  
Lower land values along main roads (2)  
Commercial ribbon development/Rezoning of businesses (2)  
[ANY ONE] (1 x 2) (2)

- 4.3.3 Traffic congestion has a negative impact on accessibility of the economic activities in the city (2)  
 High land value and taxes: most of the economic activities are unable to afford the high rent in the city centre (2)  
 Overcrowding: lack of space to perform some of its activities forces them to the outskirts (2)  
 Air and noise pollution: prevent the economic activities from performing their functions (2)  
 Higher levels of crime have resulted in big business moving to the outskirts of the city along main and arterial routes (2)  
 Lack of parking space has resulted in major chain stores locating in outlying business districts along main and arterial routes (2)  
 Competition between similar businesses (2)  
 Informal traders on pavements has a negative impact on businesses (formal traders) (2)  
 Urban decay/Not aesthetically pleasing/ (2)  
 Building requirements for different types of business (2)  
 The status of the CBD has declined (2)  
 [ANY TWO] (2 x 2) (4)
- 4.3.4 It is an area undergoing change (renovation, demolishing or rebuilding) (2)  
 Future expansion area for the CBD thus it is temporary (2)  
 Invasion and succession/Functional change (2)  
 Mixed functions (2)  
 [ANY ONE] (1 x 2) (2)
- 4.3.5 The land value is more affordable by most developers (2)  
 It is far from the problems experienced in the city centre (2)  
 Open space that is unused (2)  
 Consists of a large flat land (2)  
 Peaceful environment (2)  
 Rural atmosphere (2)  
 Aesthetically pleasing (2)  
 Close to residential/markets areas on the outskirts(2)  
 [ANY TWO] (2 x 2) (4)
- 4.4 4.4.1 The formless/uncontrolled/shapeless/unplanned expansion of the city into the surrounding rural area (1)  
 [CONCEPT] (1 x 1) (1)
- 4.4.2 Housing density increased (1) (1 x 1) (1)
- 4.4.3 Situated on a steep slope (2)  
 Expensive to develop (2)  
 Not yet zoned/needed for urban development (2)  
 A lower population during 1980 (2)  
 Preserving/Protecting the area/Buffer zone (2)  
 Apartheid segregation laws/ group areas act /Segregation (2)  
 Originally was privately owned (2)  
 [ANY ONE] (1 x 2) (2)

- 4.4.4 (a) Irregular (2) (1 x 2) (2)
- (b) Unplanned development (2)  
 Associated with new urban development/modern street pattern (2)  
 Situated on steep slope (2)  
 To avoid steep roads (2)  
 To avoid traffic congestion in a high density residential area (2)  
 To allow the smooth flow of traffic (2)  
 [ANY ONE] (1 x 2) (2)
- 4.4.5 Vegetation removed/Deforestation (2)  
 Habitat of various species destroyed (2)  
 Biodiversity negatively impacted (2)  
 Ecosystem thrown into imbalance (2)  
 Disruption of food chains (2)  
 Soil covered by artificial surfaces (2)  
 Infiltration reduced (2)  
 Groundwater table lowered (2)  
 Permanent rivers become periodic (2)  
 Destruction of soils (2)  
 Aesthetic appeal of original ecosystem destroyed (2)  
 Increased run off leads to greater soil erosion (2)  
 Leads to localised and microclimate change (2)  
 Increased pollution levels (2)  
 Artificial surfaces will lead to flash flooding (2)  
 [ANY FOUR] (4 x 2) (8)
- 4.5 4.5.1 Soybeans (1) (1 x 1) (1)
- 4.5.2 Maize (1) (1 x 1) (1)
- 4.5.3 The hectares planted increased from 2014 to 2015, but the crop yield decreased (2) (1 x 2) (2)
- 4.5.4 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)

- 4.5.5 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)
- 4.6 4.6.1 Pretoria Witwatersrand Vereeniging (1) (1 x 1) (1)
- 4.6.2 Gold (1) (1 x 1) (1)
- 4.6.3 Gold (2)  
 Has led to the development of jewellery manufacturing industry (2)  
 Has led to growth in the export industry (2)  
 Provides raw material for processing (2)  
Platinum (2)  
 Has led to development of chemical industries e.g. SASOL(2)  
 Used in the motor manufacturing industry e.g. BMW; FORD (2)  
 Provides raw material for processing (2)  
Coal (2)  
 Provides material for the generation of electricity e.g. ESKOM (2)  
 Production of liquid fuel e.g. SASOL (2)  
 Production of fertilisers and Pesticides and Cosmetics (2)  
 Production of cement e.g. ELEPHANT cement (2)  
 Provides raw material for processing (2)  
 [ANY ONE EXAMPLE OF A MINERAL AND AN EXPLANATION] (2 x 2) (4)
- 4.6.4 Water Transfer Schemes (2)  
 Established Tugela-Vaal Water Scheme (2)  
 Agreed with the Lesotho Government to establish Lesotho Highland Water Scheme (2)  
 Water restrictions (2)  
 Recycling of water (2)  
 Grey water (2)  
 Encouraging the use of borehole water (2)  
 Rain water harvesting e.g. jojo tanks (2 x 2) (4)

- 4.6.5 Provision of employment opportunities to skilled and unskilled workers (2)  
Provision of an important market for the raw materials of the primary sector (2)  
Earns foreign investment through the export of many industrial products (2)  
Invest large amount of capital thus boosting the growth of industries (2)  
Development of other industries/link industries that rely on produced raw materials (2)  
Development along major roads (2)  
Infrastructure development e.g. OR Tambo Airport/Gautrain/E-toll/Maputo Corridor etc. (2)  
Industries provide employment resulting in a higher spending power (2)  
Contributes to the GDP (2)  
[ANY TWO] (2 x 2) (4)  
**[75]**

**GRAND TOTAL: 225**