



NATIONAL SENIOR CERTIFICATE EXAMINATION  
NOVEMBER 2008

**GEOGRAPHY: PAPER I**  
**MARKING GUIDELINES**

Time: 3 hours

300 marks

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**These marking guidelines are prepared for use by examiners and sub-examiners, all of whom are required to attend a standardisation meeting to ensure that the guidelines are consistently interpreted and applied in the marking of candidates' scripts.**

**The IEB will not enter into any discussions or correspondence about any marking guidelines. It is acknowledged that there may be different views about some matters of emphasis or detail in the guidelines. It is also recognised that, without the benefit of attendance at a standardisation meeting, there may be different interpretations of the application of the marking guidelines.**

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**SECTION A GEOGRAPHY OF THE VAAL RIVER BASIN**

**1.1. Geomorphology**

Study Figure 1 which is a map of the Vaal River Basin

1.1.1 Fluvial action

(a) TRUE OR FALSE

State whether each of the following statements is TRUE or FALSE. If false then write out the correct statement.

- (i) True (2)
- (ii) True (2)
- (iii) False. The overall pattern is dendritic. (4)
- (iv) True (2)
- (v) True (2)

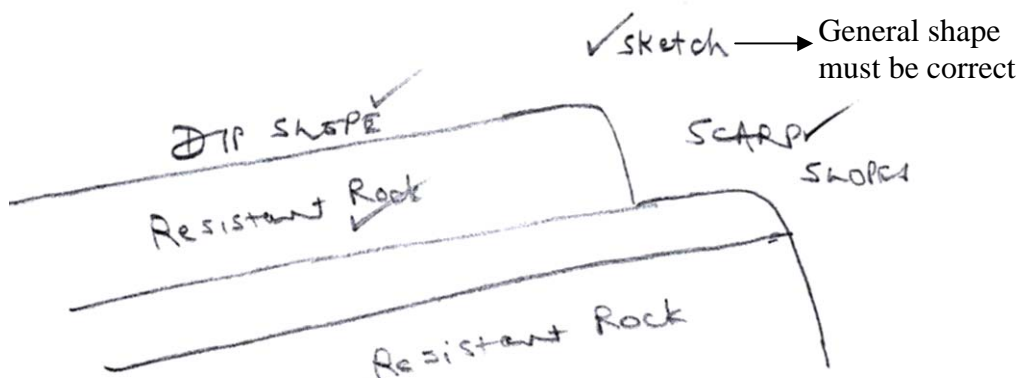
(b) 3 or 3rd (2)

(c) The Vaal River and its tributaries originally formed their drainage patterns on a different surface, above the current surface. The rivers then eroded through the **original surface** ✓✓ into the current one, superimposing and **maintaining their patterns** ✓✓ and cutting across the ridges of the current surface. River eroding downwards and is **mismatched** to current surface ✓✓. (2 × 2 = 4)

Emphasis on explanation of concept

1.1.2 Structural landscapes

- (a) [Cuesta, homoclinal ridge] hogsback (1) (2)
- (b)



If diagram is wrong way around no marks given.

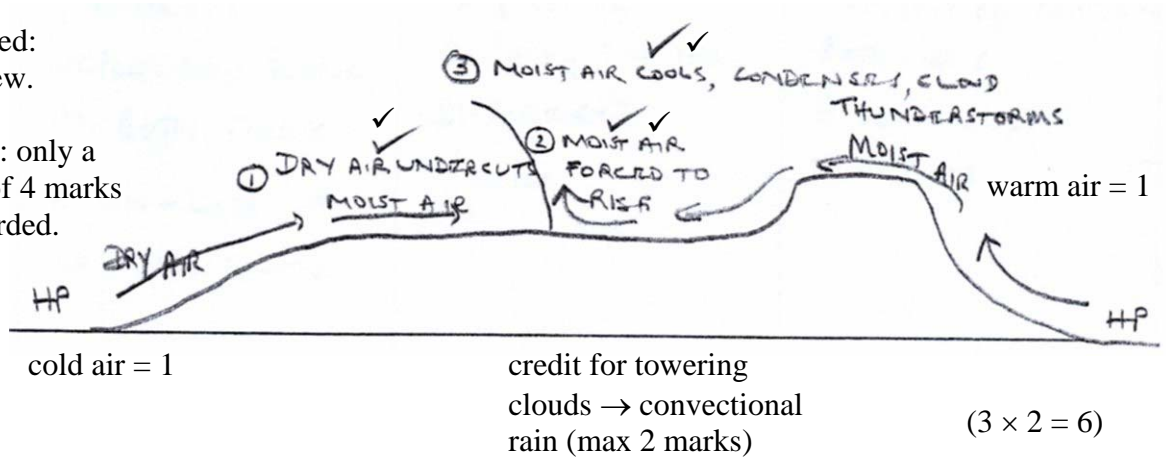
(4)  
[24]

**1.2 Climatology**

1.2.1 During summer, most rainfall, over the Vaal River Basin results from moisture front thunderstorms. Redraw the diagram below and use it to describe how these thunderstorms develop.

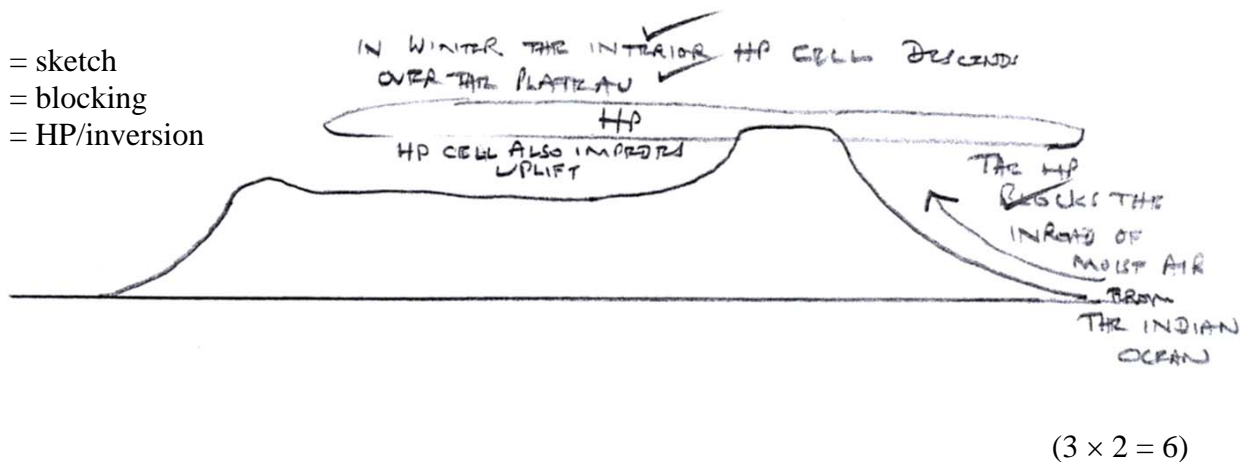
Also accepted:  
synoptic view.

No diagram: only a maximum of 4 marks will be awarded.



1.2.2 The Vaal River Basin normally experiences very little rainfall during the winter. Using a labelled cross section, **explain** why this is the case.

2 marks = sketch  
2 marks = blocking  
2 marks = HP/inversion



1.2.3 The microclimate of Johannesburg.

- (a) An Urban Heat Island Heat bane/ Heat island (2)
- (b) The concrete and tar surfaces absorb heat  
The surface areas of high-rise buildings are much greater than in natural areas  
There is a lack of water and vegetation which absorb heat  
Industry, vehicles and people generate heat  
(Any 4 feasible reasons)

Points must be **explained** for 2 marks to be awarded

- High rise buildings catching afternoon and morning sun.
- Lack of air flow: higher buildings.
- Pollution dome trapping in more heat.
- Reflection from glass surfaces.

(4 x 2 = 8)  
**[22]**

**1.3 Settlement**

1.3.1 Rural settlement

- (a) The streets have been laid out in a grid iron pattern and the schools and church are located in **central** open spaces. Streets rectangular/parallel. (2)
- (b) Education (schools), religious (church) services, transport, a cemetery, recreation, provision of water, post office. (2 × 2 = 4)
- (c) Note: Can be either YES or NO. Must be backed by a feasible explanation.
  - Yes/no = 2 marks
  - Give 2 valid supporting reasons based on info (4)

(3 × 2 = 6)

1.3.2 Urban settlement using geographical techniques.

Candidates given the benefit here.

- (a) You can see the horizon/ can't see horizon; at an angle; sides of buildings visible. (2)
- (b) Satellite photos are vertical. They are taken from a much greater distance from the earth and their scales are much smaller and they show a much larger area. They can also show different vegetation and land-use. (2 × 2 = 4)
  - (i) Central Business District (CBD) – commercial area (1) (2)
  - (ii) High rise buildings, high density of buildings, traffic congestion, **pollution** (air, noise, litter), crime, high land value; old part of city; grid iron pattern. (3 × 2 = 6)

Photo	Satellite
□ Colour image	□ Black and white image
□ 3/D height	□ 2/D no height
□ Range of angles	□ Vertical
□ Small area	□ Large area
□ High resolution	□ Low resolution
□ Plane	□ satellite

- (c) Major problems in the area: congestion, pollution, crime, high land prices, other businesses leave which means that fewer people are visiting the area.
  - easier access
  - parking
  - pleasant surroundings
  - modern buildings

Converse accepted

3 points which must be **explained**. (3 × 2 = 6)

**[32]**

**1.4 Economic development in the Gauteng Industrial Region**

- ✓1.4.1 Originally the discovery of gold which attracted people and industry. Today, is the financial, commercial and industrial heart of South Africa
  - accept both original and new factors Centre of excellent transport network.
  - must have economic focus Accessible to numerous raw materials; coal, diamonds, platinum, chrome, iron ore. Also agricultural raw materials.
  - Cheap power from Mpumalanga coalfields.
  - Flat land.
  - The people who have settled in the area provide the labour (highly skilled, skilled and semi-skilled) plus a market for the products.
  - Water transfer schemes; close to borders; infrastructural hub of Africa. (4 × 2 = 8)
- } If points mentioned from fact file = max of 4 marks

- 1.4.2 Excellent communications with other leading cities of the world.  
 High levels of healthcare.  
 Have the headquarters of a number of multinational companies; South African Breweries, SASOL, SAPPI. Also the JSE which can influence the world economy.

- The presence of a world-renowned university; Wits.
- Reference must be made to fact file.
  - Short list: only 3 marks awarded. (3 × 2 = 6)

- 1.4.3
- 3 points = impact of load shedding = (6 marks)
  - 1 point = discuss impact of sustainability = (2 marks)

↓  
 Open in terms of the meaning of sustainability

(4 × 2 = 8)  
 [22]

**100 marks**

**SECTION B            NATURAL ENVIRONMENTS ANSWER EITHER QUESTION 2 OR QUESTION 3**

**QUESTION 2            CLIMATOLOGY, MANAGING CLIMATIC DISASTERS AND GEOMORPHOLOGY.**

**2.1            The Tri-cellular model of the circulation of the atmosphere**

Study Figure 3.

- (a)    planetary
- (b)    low
- (c)    convergence
- (d)    wet
- (e)    descending
- (f)    dry
- (g)    convergence and uplift
- (h)    very cold temperatures
- (i)    the Coriolis effect
- (j)    the rotation of the Earth on its axis

(10 × 2 = 20)  
[20]

**2.2            The South African Synoptic Weather Map**

- 2.2.1    Cloud cover: overcast/ 8/ 8  
           Atmospheric temperature: 12 deg C  
           Dew Point temperature: 11 deg C  
           Wind direction: North-westerly or blowing in a South-easterly direction **NB**  
           Wind speed: 25knots  
           Weather: Rain (rain is expected) Accepted

(6)

- 2.2.2    A cold front is has just passed over Cape Town. The cold air behind the front undercuts the warm air ahead of the front causing it to rise. The rising air cools and condenses and clouds form. The moist, onshore N. Westerly winds rise as a result of surface friction, cool and condense and clouds from.

**NB** must mention warm air bring uplifted

(2 × 2 = 4)

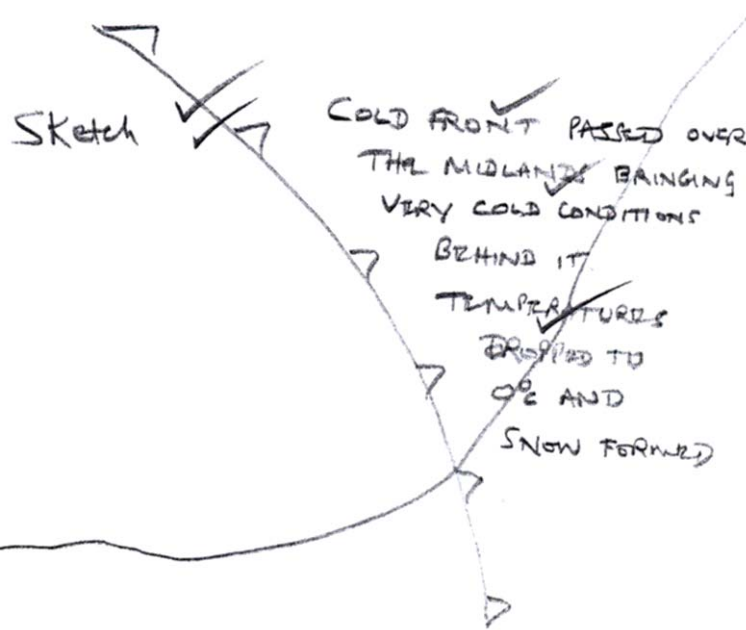
- 2.2.3    North-west wind  
           No cloud cover  
           Very dry (large difference between air temp and Dew point temp)  
           Ahead of cold front  
           Blowing into a Coastal Low  
           High temperatures

(3 × 2 = 6)

- 2.2.4    Strong N.W.    Berg winds, very dry, dry out the vegetation, easily combustible, once fires start they are driven by the strong winds.

(2 × 2 = 4)

2.2.5



**NB:** If candidates just draw a synoptic weather map, then it must be labelled correctly

(5 × 2 = 10)

- 2.2.6 (a) **Winter** months, SA dominated by HP, very dry. Berg winds common at this time of the year. Dry things out even more, especially the vegetation.
- Concentration on this part of the memo { Will get worse because temperature will rise because of global warming. Also negligence of humans. (3 × 2 = 6)
- (b) Because they are an annual event we must prepare for them. Much wider firebreaks, especially in the forested areas. Upgrade the fire-fighting equipment, ground and air. More personnel trained to prevent and to fight fires. Make all residents of the area aware of the potential for fires. Fire drills and evacuation procedures, especially in the informal settlements. Watch the weather reports; give ample warnings to all residents in the area. Any geographically relevant observation. Reduction in global warming. (2 × 2 = 4)
- [40]**

**2.3 Fluvial Action**

2.3.1 (a) A longitudinal profile is a cross section of a river, from its source to its mouth, ignoring all bends. This profile shows the Karkloof river from its source to where it joins the Mngeni River. **(2 for def, 1 for reference to diagram) NB** (3)

(b) A temporary base level is a temporary limit to the erosion by a river, below that level. On the diagram the falls is such a level because the river cannot erode below the level of the falls until they have been removed. (2 for def,1 for reference to diagram) **NB** (3)

2.3.2 In the upper course the river's energy is reduced by friction because the river is narrow and shallow. It thus maintains a steep gradient in order to give it more energy. In the middle and lower courses the rivers channel is wider and it is deeper hence less friction hence less need for a steep gradient. River 'graded'; achieved 'dynamic equilibrium'. (2 × 2 = 4)

(a) A: Radial/ Centrifugal (2)

(b) Rivers flow outwards, like the spokes of a wheel, from a central high point. (2)

Braiding  
laminar flow

2.3.4 This is a meandering channel which forms where the gradient is gentle. The cross profile of the channel is asymmetrical as lateral erosion is greater on the outer bank where the current is stronger. (2 × 2 = 4)

**[18]**

**2.4 Mass movements and climatic hazards**

(a) The water lubricates the top layers of soil and rock and the weight of the snow plus the melt-water causes a large mass of land to break loose and to slide downwards. Occurs in jointed rocks or along bedding planes parallel to the slope. (2 × 2 = 4)

(b)

0 – 1	2	3
<ul style="list-style-type: none"> <li>– No understanding of the term 'sustainable'.</li> <li>– Shows very little understanding of the possible long term effects of these fires on the forestry industry.</li> </ul>	<ul style="list-style-type: none"> <li>– Shows an understanding of the term 'sustainable'.</li> <li>– Also shows a reasonable understanding of the impact of the fires on the forestry industry.</li> </ul>	<ul style="list-style-type: none"> <li>– Shows a full understanding of the term 'sustainable'.</li> <li>– Could argue that forestry is sustainable provided proper measures are taken to prevent fires.</li> <li>– <b>ALSO</b> if fires get worse; forestry could become unsustainable.</li> </ul>

(3 × 2 = 6)

**[10]**



**2.5 Managing river catchments**

Too much rainfall. A number of rivers converge

(a) Draining the wetland. A wetland acts like a sponge which absorbs and spreads the flood waters out and they take time to move through the system. The wetland vegetation traps the water and holds it back. (2 × 2 = 4)

(b) Controlling the flood waters by slowing the discharge. Water available for irrigation, fishing, recreational purposes. (2 × 2 = 4)

(c) Floods the farmland reducing the arable land available. Greater erosion downstream. Traps fertile soil and takes it out of the water flowing below the wall. Ecosystems affected both above and below the wall. Weight of the water in the dam may upset the geology in the area causing minor earthquakes.

Less water downstream  
 People have to re-locate  
 Loss of habitat  
 Fish migration interrupted

(2 × 2 = 4)  
**[12]**

**100 marks**

**QUESTION 3      MICROCLIMATES, TROPICAL CYCLONES AND STRUCTURAL LANDSCAPES**

**3.1      Microclimates**

- 3.1.1    True (2)
- 3.1.2    False – They are very common over urban areas/ hotter/ heat island/ convection. (4)
- 3.1.3    False – Katabatic flow is experienced at night in local valleys. Anabatic flow is experienced during the day in local valleys. (4)
- 3.1.4    True (2)
- 3.1.5    False – A temperature inversion occurs when the temperature of the atmosphere increases with altitude. (4)
- 3.1.6    False – Frost pockets are common in the bottom of local valleys in the middle of the night in winter. Only/ variable necessary, but if 2 given both needed to be correct. (4)

**[20]**

**3.2      Tropical cyclones**

- 3.2.1    Develop over the sea, temperatures of the water must be 27 deg C or more, the air must be unstable, it must develop in a LP system, needs a period of calm with variable winds for a few days, upper air divergence, can only develop between 5 deg and 30 deg N and S. High humidity. Late summer, latent heat, convergence on surface. (4 × 2 = 8)
- 3.2.2    (a)    Can see the **spiralling cloud** which is caused by the spiralling winds moving into the LP system. Also see the **Eye** at the centre of the system. **Latitude °S; Madagascar** visible. (2 × 2 = 4)
- (b)    The clouds spiral in a **clockwise direction**. Winds blow clockwise around a tropical cyclone in the southern hemisphere. The **latitude** on the satellite photo is South of the Equator. **Mozambique/ Madagascar** in S.H. (2 × 2 = 4)
- 3.2.3    (a)    Moves from east to west and then directly southwards/ Correct if described movement using places on map. (2 × 2 = 4)
- (b)    Guided by the **Tropical Easterlies** which blow from E to W. **Coriolis effect** causes it to swing southwards (to left in Southern Hemisphere). (2 × 3 = 6)
- 3.2.4    (a)    Evacuate the island because the centre of the cyclone will pass right over the island. This means that the most destructive part, the vortex, will pass over the island. Heavy rains and high seas will flood the whole island and high winds will blow roofs off buildings, uproot trees and will bring down power lines/ storm surge, etc. (3 × 2 = 6)
- (b)    No need to worry because the centre of the cyclone will pass 250 km north of the island and only the edge will affect it. Winds 50 km/hr, some rain and waves about 2-3 m above normal. (2 × 2 = 4)

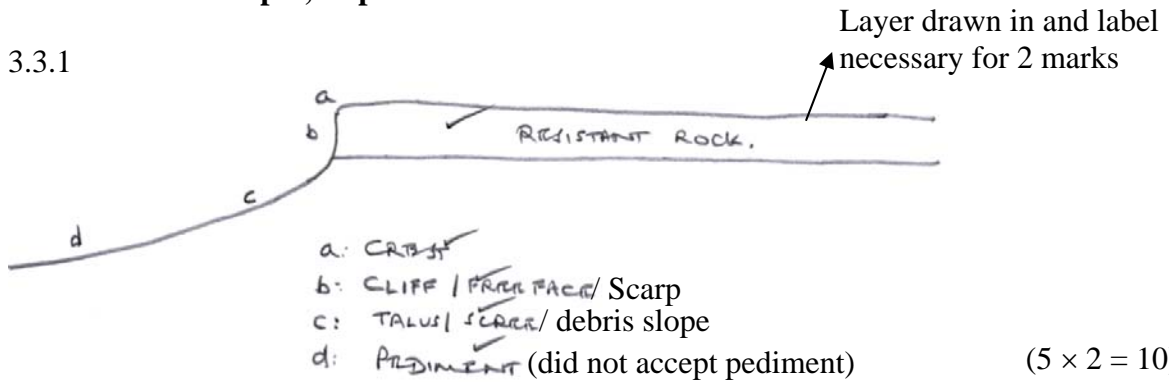
Announcement for evacuation in path of cyclone. An effect/ consequence.

If no indication of 'far' – then only 1 mark. Support with a consequence (minor effect).

- 3.2.5 (a) The power of the waves erodes the beaches and undermines the properties which have been built close to the water's edge. Roads and beachfront amenities are also eroded away. (2 × 2 = 4)
- Many others accepted, e.g. drowning, beaches destroyed, environmental damage, etc. (b) No building should be permitted below the 50 m above sea level mark. Sea walls built to withstand the waves  
Re-introduce natural tidal barriers which were removed to develop properties close to the sea. Also practise evacuation drills, monitoring systems, mobilising/ putting in place emergency service and other relevant factors. (2 × 2 = 4)
- [44]**

**3.3 Structural landscapes, slopes and fluvial action**

3.3.1



3.3.2 The pediment (or talus) slope. In the photograph settlements are sited and farming activities take place on this slope. The other slopes are largely undeveloped. Any other logical reference to photo, e.g. lots of vegetation – good farming, river – access to water. Graduals/ relatively flat. (3 × 2 = 6)

3.3.3 The underlying rock structure is **homogeneous** and the rivers take on the pattern of the veins of a leaf because their pattern is determined by the gradient as they seek the quickest route to the lowest point of the basin. (2 × 2 = 4) [20]

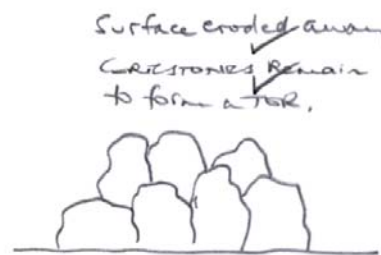
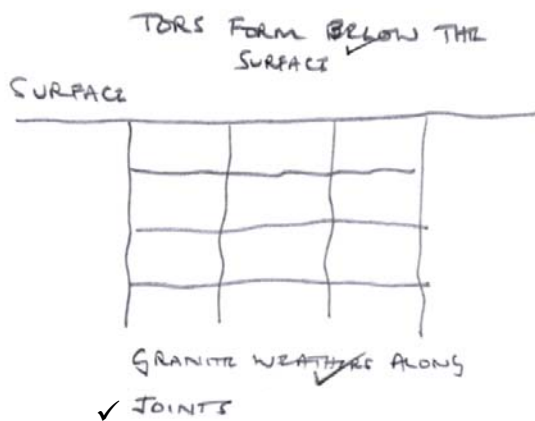
Also uniform

Gradient – rock equally resistant to erosion

**3.4 Tors**

3.4.1 Granite/ Igneous rock (2)

3.4.2 **Before** **After**



NOTE: The other theory of exposure then decay is also acceptable. We also accepted other theories (5 × 2 = 10)

**NB:** Accept any model/ theory, e.g. Linton/ Thomas/ other

3.4.3 Granite may be mined and used for buildings or for interior finishes. Certain tors have become tourist attractions. Examples: Hay Tor on Dartmoor and the tors of the Zimbabwe Lowveld area. Export – earns foreign exchange. (2 × 2 = 4) [16]

**100 marks**

**SECTION C HUMAN ENVIRONMENTS**

Answer ONE question from this section, **EITHER** Question 4 **OR** Question 5.

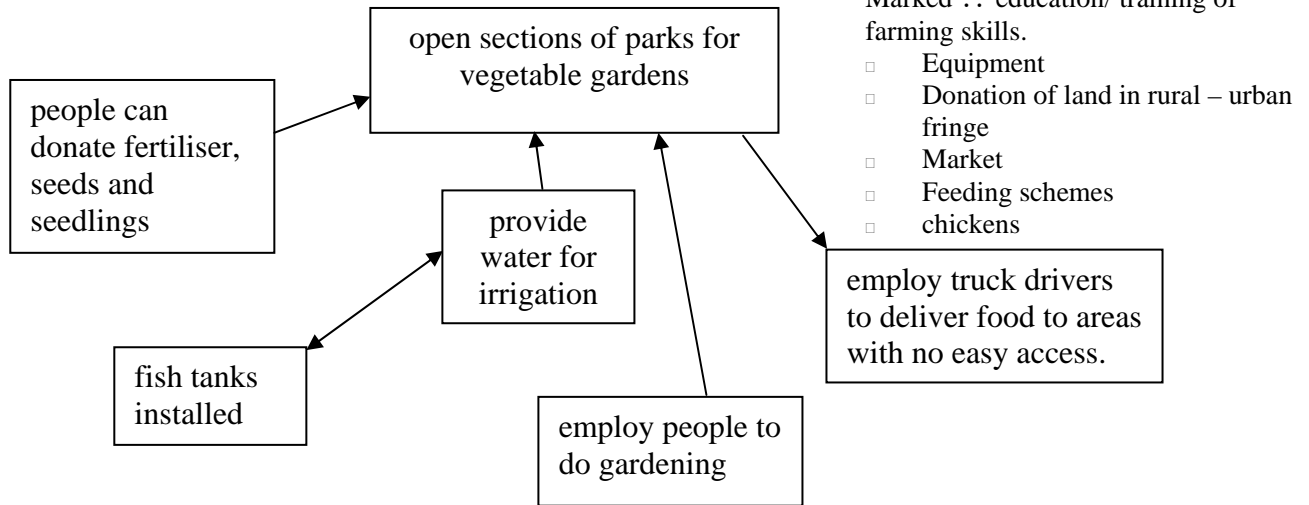
**QUESTION 4**

**4.1 Food security and agriculture**

- 4.1.1 (a) (Gross Domestic Product) the value of goods and services that are produced by a country in one year. (2)
- (b) People have access to food in urban areas. (enough food) (2)
- (c) Land is now changed hands from white farmers to black farmers, could be land restitution or land redistribution, but many did not have the skills to succeed, thus the land is not productive. (2)  
Change of land ownership.

4.1.2 People do not want a place to 'farm, but a place to stay'. Rural areas are exposed to drought, mechanisation, consolidation therefore people are attracted to regular income, schools, hospitals in the cities. Jobs do not want to farm – want services. (2 × 2 = 4)

4.1.3 In the form of a detailed mind map. (Discuss four points). (Most candidates focused on 'general' food security and were marked accordingly)  
Marked ∴ education/ training of farming skills.



(4 × 2 = 8)

4.1.4 An example could be Sekhukhune land north east of Pretoria. People have been neglected because of this area being part of an old 'homeland'. In July 2002, the Integrated Food Security and Nutrition Programme started supplying support packages. These packages included day old chicks, point-of-lay hens and heifers as well as milk powder and peanut butter. (3 × 2 = 6)

**[24]**

Virtually no case studies.

- Again general: Training  
Mechanisation  
Loans  
Irrigation  
Encourage commercial

**4.2 Urban settlement, land use, economic activities and water**

- 4.2.1 Original settlers were first attracted to the area because of the **water** of the Bakens River and the good **fertile soil** available for agriculture. The area was **flat** and was spacious as it was at the head of Algoa Bay and the area was also **protected from the winds**. The climate is moderate.  
 Natural bay, defence, site for a harbour (3 × 2 = 6)
- 4.2.2 Apartheid model: African residential areas/ Coloured/ Indian all had to be located out of town because of the Group Areas Act. They were located on a railway line to give access to work in the city and industrial area. This formed a buffer zone, reinforcing segregation.  
 The model then follows the traditional sector model: CBD – in the centre and land-uses radiating outwards along road and rail, in wedges or sectors, e.g. North End Industrial area. (4 × 2 = 8)
- Division of race groups
  - Buffer
  - Townships out of town
  - White – better areas
- 4.2.3 **One advantage:** Close to customers and corporate companies in the CBD – accessible space to expand.  
**One disadvantage:** Close to residential areas a problem with noise.  
 Far from the Industrial areas – transport problem. Land value drops. (2 × 2 = 4)
- 4.2.4 (a) Secondary/ Industrial (1) Manufacturing (1). (2)  
 (b) Continental tyres, batteries, leather upholstery, windscreens, steel, fuel, textiles, panel beaters. (any e.g.) (2)
- 4.2.5 **North End:** Little space, infrastructure too close to residential area, on railway line, close to Port Elizabeth harbour.  
**Coega:** Plenty of space, deep water port – access to easy loading and unloading. Away from residential area. Many possible answers. (4 × 2 = 8)
- 4.2.6 The Orange River has its source in a well watered area - in Drakensberg Mts. The Gariep Dam distributes water down Orange Fish tunnel to Fish River, then via the Cookhouse tunnel to Sundays River. This **basin transfer** will ensure the sustainable supply of water to the area. People should also **recycle water** and use **computerised irrigation** to assist in the focused watering of crops. The basin should be well managed. Laws restricting use. (3 × 2 = 6)
- Education on water usage
  - Pollution
  - Dams
- 4.2.7 The Addo N. P. requires people to work in the: kitchens, cleaning chalets, maintenance, as guides, curio shops as assistants and they also encourage local people to make curios to sell to tourists, which in turn brings in an income to the people in the area. Close to PE – more tourists, more money spent.  
 □ Awareness  
 □ Protection of elephants  
 □ Draw card (3 × 2 = 6)
- 4.2.8 (a) 3.5 cm = 5 km (using the key)  
 11,5 cm = 16.4 km 15 – 20 (2) 14 (1) 21 (1) (2)  
 (b) Sakhasonke and Motherwell have the same area Yet:  
 Sakhasonke has 337 more houses, they are bigger 46 m<sup>2</sup> houses and the population potential is high, 1 658 people living in the area.  
 Motherwell has 216 less houses, the houses are smaller 35 m<sup>2</sup> and the population potential is small 630.  
 However plot size is smaller in Sakhasonke 73 m<sup>2</sup> as opposed to 216 m<sup>2</sup> in Motherwell. No need for statistics. (2 × 2 = 4)

- (c) Cities will remain compact, as urban sprawl is reduced and people will not spend hours travelling to work. The land use is mixed, thus commercial, retail and residential areas are all together and easily accessible. (2 x 2 = 4)  
 Close to work, save transport costs  
 Have more services close by [52]

**4.3 Terminology and concepts**

- 4.3.1 land redistribution (2)  
 4.3.2 Koeberg (2)  
 4.3.3 balance of trade (2)  
 4.3.4 primary (2)  
 4.3.5 aquifer (2)  
[10]

**4.4 Rural settlement**

LO 2/ AS 2	Site	Appearance (2x2=4)
LO 3/ AS 1	Comment Suggestion	(2x2=4)
LO 3/ AS 1	Explore	(3x2=6)

**Site and Appearance:**

Thermal belt on a slope shows grassland and there are a few trees perhaps along a river course. There is also erosion in the background. The houses and huts are a mixture of traditional rondawels and informal dwellings. There appears to be a house perhaps this was the original farmer's home. Cluster of houses and a field

**Economy:**

**Subsistence** agriculture – evidence of crop in foreground – maize, vegetables and probably poultry.

**Rural depopulation:** most men and some of the adult women move to towns to find work. Agriculture might be neglected - but some money may be sent home. AIDS could also have impacted – less productivity. Social problems – school close down – general trend, economy suffers

**Explore:**

- Solar heating – no chopping down of trees
- Make compost from cuttings, peels
- Water used for cooking and cleaning then used to water plants
- No unnecessary removal of vegetation/overgrazing, to prevent soil erosion.
- All stakeholders on the land participate in decision making. Try some selling

Credit for any geographically relevant observation.

(7 × 2 = 14)  
**[14]**

**100 marks**

**QUESTION 5****5.1 Urban land use**

5.1.1 Define what you understand by:

- (a) These were perhaps planned (industrial) towns, built outside of large cities, e.g. London to accommodate workers and their families, so that they did not all converge on the major centres. They were **planned** on main access roads to big towns to make **commuting** easier if it was necessary. (2)
- (b) A 'green lung' is an area which has **open spaces**, trees, shrubs which can provide extra oxygen for the surrounding urban area. (2)

5.1.2 'Edge city' developments are found on the edge of a major urban areas, e.g. **Midrand** on the northern edge of a sprawling JHB and Sandton. An 'edge city' is a **well planned**, self contained **mixed used settlement** which is accessible to the main urban area, e.g. Umhlanga. (2 × 2 = 4)

5.1.3 **Advantages:** secure, lock-up and go.

Less maintenance, social and golf is readily accessible. (any two) close to work.

**Disadvantages:** close to neighbours, noisy, adhere to body corporate rules and golf-balls breaking windows. (any two) crime, traffic. (4 × 2 = 8)

- 5.1.4 (a) **Sphere of influence** of Gateway is large (this is an area from which the customers of the central place come)  
It is close to Mount Edgecombe Estate/ Umhlanga.  
**Location** next to N12 up the north coast; readily accessible. In a good space close to La Lucia Ridge Office Park and hotels along the coast; attracts tourists. (3 × 2 = 6)
- (b) **Similarity** – provides large variety of goods for sale, brings in large profits. Structural.  
**Difference** – infrastructure, buildings, electricity, water available at Gateway while an informal trading area has no services and is usually open to the elements. Rental low. (2 × 2 = 4)

5.1.5 **New Airport: more space** to build all the infrastructure, **far away from industry**, (less smoke which might interfere with visibility), **accessible** to a major highway to get passengers to their destination quickly and it should **not be too near to a residential area**, as it will be very noisy. It should not impact on a wetland or forest. (Zimbali Estate is on the proposed flight path, which is a problem!) Euro problems (4 × 2 = 8)

flat

[34]



**5.2 River systems, agriculture and settlement**

- 5.2.1 (a) This is a drainage basin, surrounded by a watershed, where all the run-off (direct/indirect flow) flows through the basin in a network of streams to join the trunk stream. (2)
  - (b) Environmental Impact Assessment. A formal process used to predict the environmental consequences of any development project. (2)
  - (c) A type of farming where basic farming methods are used to produce only food for the family's needs. (2)
- 5.2.2 This dam may take land away from the local farmers – they would have to **relocate** and it will disrupt the natural flow of the river, which these farmers might be dependent on. They may not benefit from the water in the dam, as it will be directed to the mines, etc. Production. (2 × 2 = 4)

5.2.3 Rubric

<b>LO 3/ AS 2</b>	Elite development – land for used agriculture and low cost housing more useful, too many golf estates already!
<b>LO 3/ AS 1</b>	It is not sustainable – Too much water used, disruption of ecosystem, destruction of habitats.

(4 × 2 = 8)

- 5.2.4 **Large dams:** Not sustainable as they drown valuable land, dams silt up, disrupt natural flow of water, destroy ecosystems in the building process and they are expensive to build.  
**Small irrigation systems:** less expensive, can build many along a river for local communities, this does not disrupt ecosystems. Pro/ con. (4 × 2 = 8)  
**[26]**

**5.3 True and False**

- 5.3.1 False – primary economic sector is far less, about 8% as opposed to 22% secondary. (4)
  - 5.3.2 True – Bonus (F) Gauteng. (2)
  - 5.3.3 True (2)
  - 5.3.4 False – Coal is exported through Richards Bay. (4)
  - 5.3.5 False – Most is produced by thermal/ coal fired power stations. (4)
- [16]**

## 5.4 Urban and rural settlements

### 5.4.1

- 80% of people are below household subsistence level. poor
- 80% have no water and electricity in their homes.
- Half the adults have had no schooling - need skills development.
- People have a pension of R940 and child grants of R220 - they need an additional income.
- No medical facilities in these areas and very few schools for children.
- Quality of life/ AIDS/ Transport. (4 × 2 = 8)

### 5.4.2 **Agenda 21** – A product of the conference in Rio de Janeiro in 1992. It encompasses

'Think Global, act Local'. Focus on sustainable approach, both in urban and rural areas and make aims transparent and involve locals in decision making. Quality of life/ environmental concerns. (2 × 2 = 4)

### 5.4.3 **Rural** – in the form of a mind map:

Footloose industry, piped water, electricity supply – perhaps solar, school, clinic, festival in country (cherries in Ficksburg) to encourage tourism for additional income, field officers to train farmers, ecotourism ventures (trout farms, game farms). (6 × 2 = 12)

[24]

<b>100 marks</b>
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**Total: 300 marks**