NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2011

GEOGRAPHY: PAPER I

Time: 3 hours 300 marks

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

1. This paper consists of 28 pages and a colour photograph Insert of 4 pages (i – iv). Detach the Insert from the middle of the question paper. Please check that your question paper is complete.

2. Read the questions carefully.

3. **ANSWER THREE QUESTIONS AS FOLLOWS:**
   - **One** from Section A – Compulsory question
   - **One** from Section B
   - **One** from Section C

4. Credit will be given for the following:
   - Interpretation and explanation; and
   - Evidence of personal observations where this is appropriate to the question.

5. You are encouraged to use sketch maps, diagrams and other explanatory drawings to support your answers wherever relevant.

6. Number your answers exactly as the questions are numbered.

7. Please circle the number of each question answered on the back inside flap of your Answer Book.

8. It is in your own interest to write legibly and present your work neatly.

9. There is a GLOSSARY of words on page 2 explaining what the words in **bold** used in the questions mean.

10. Candidates must pay attention to the mark allocation. Unless otherwise indicated, two marks are awarded for a valid response. This means that a question carrying four marks requires two responses.

GLOSSARY

Account for	To explain why, by giving reasons.
Calculate	To work out the value of something using a mathematical method.
Classify	To divide into groups or types.
Compare	To look at the similarities and differences.
Compile	To draw up or put a list together.
Contrast	To look at the differences.
Copy	An imitation or production of the original.
Define	To state the meaning of a word or concept.
Describe	To give an account of something in words.
Discuss	To explain by argument the various aspects of a statement.
Draw	To show by means of a sketch.
Estimate	To form an approximate idea.
Evaluate	To provide an opinion or judgement with supporting evidence.
Explain	To describe something so that it can be understood.
Identify	To give the details or characteristics of something.
Indicate	To point out/show; to state briefly.
List	To write down, to provide a list of facts or reasons.
Match	To connect similar things or things that belong together.
Mind map	Thoughts and ideas brainstormed and linked together.
Name	To state something, to give; to mention.
Outline	A general explanation or description of something.
Predict	To tell something in advance; to foretell of a future event.
Provide	To put forward or give.
Select	To choose.
State	To say something, to write something down.
Suggest	To propose an idea, explanation or solution by way of a plan.

SECTION A GEOGRAPHICAL ISSUES

COMPULSORY QUESTION FOR ALL CANDIDATES

QUESTION 1 Geographical Case Study: Durban, Kwazulu-Natal

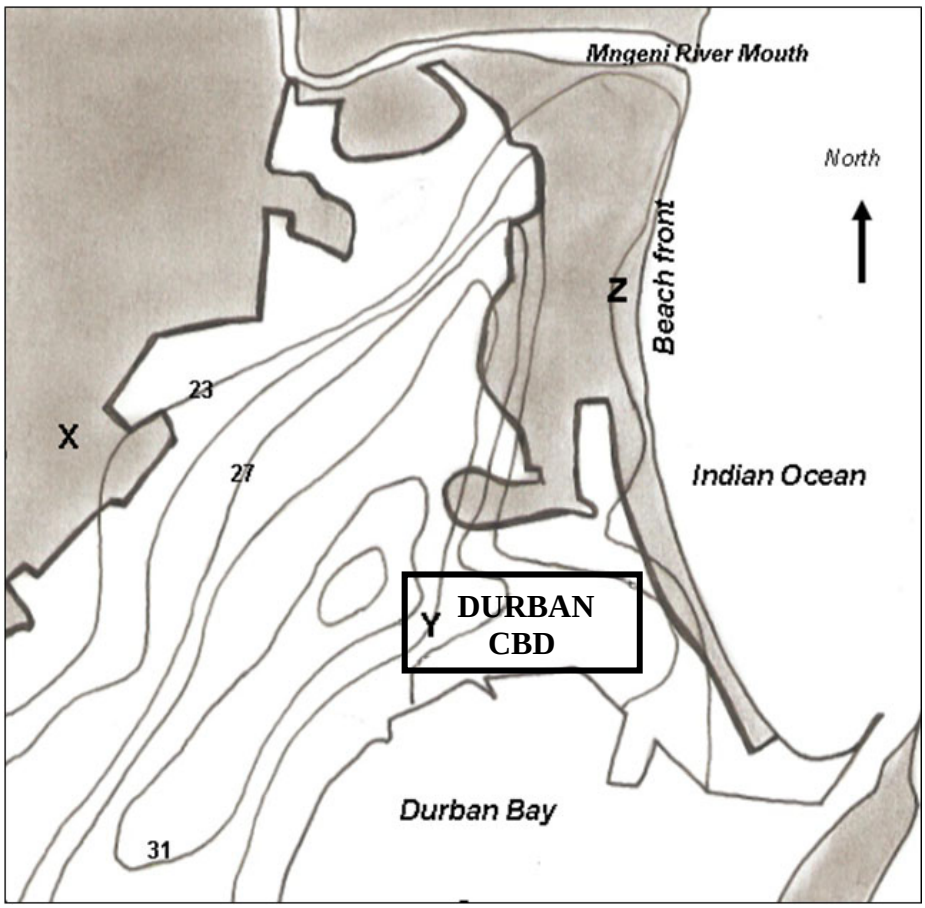
Study the source material below carefully.

FACT FILE: DURBAN

- **Population**: 3.06 million people; 3rd largest city in South Africa.
- **Physiography**: Located on a natural lagoon that formed its harbour with a range of hills inland that are the remains of fossilised sand dunes. Mngeni River flows out into the Indian Ocean, north of Durban.
- **Climate:** Subtropical – hot and humid summers, warm and mild winters.
- **Key economic sectors**: Tourism, agriculture, manufacturing and transport – large and busy harbour.

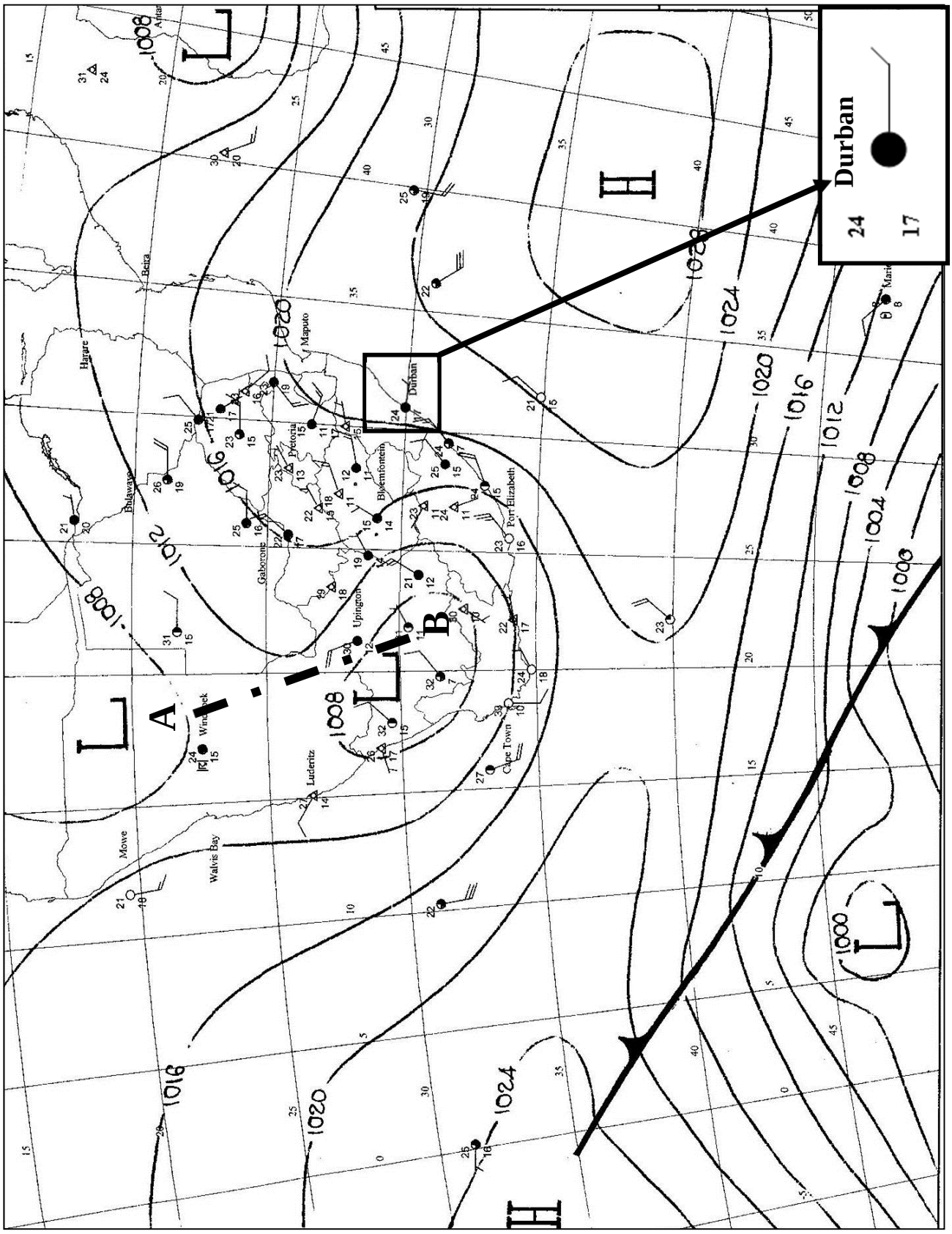
[Adapted from: *2010 FIFA Update Magazine*, January 2010]

Figure 1: Map of Durban, indicating isotherms (°C)



[Adapted from: *Geography for All*, 2007]

Figure 2: Synoptic Weather Map



[Source: WeatherSA]

1.1 Durban's Location and Land-use

Refer to Figure 1 (page 3).

1.1.1 **List** TWO factors that influenced Durban's original site. (4)

1.1.2 **Estimate** the area (km^2) of the Durban CBD (rectangle marked on Figure 1). (2)

1.1.3 With reference to Figure 1, **describe** where you would expect to find Durban's transition zone. (4)

1.1.4 Like many South African cities, Durban's CBD has gone through a period of decay and decline. **Suggest** THREE possible reasons for this urban trend. (6)

1.1.5 The area surrounding the Durban CBD has been targeted for regeneration. **Provide** an alternative urban geographical word for 'regeneration'. (2)

1.1.6 **Provide** THREE examples of what developers may do to regenerate an inner city area such as the Durban CBD region as shown on Figure 1. (6)

1.2 Durban's Climate

Refer to Figures 1 and 2.

1.2.1 Durban's climate is described as being 'sub-tropical'. **Provide** a geographical reason for this fact. (2)

1.2.2 The synoptic weather map (Figure 2) represents summer conditions.

(a) **Provide** TWO forms of evidence from the synoptic weather map to support this statement. (4)

(b) **Provide** a reason for the unusually low temperatures in the interior regions of South Africa on this day. (2)

1.2.3 Use the information provided by the weather station model for Durban to write a weather report for Durban on this particular day. The weather station model has been enlarged to assist you. (4)

1.2.4 (a) **Identify** the synoptic feature (A – B) indicated on the synoptic weather map (Figure 2). (2)

(b) **Indicate** how this synoptic feature (A – B) is influencing the weather conditions over this particular region of the country. (2)

1.2.5 Figure 1 on page 3 represents Durban's micro-climatic information using isotherms. What is an isotherm? (2)

1.2.6 Refer to Figure 1 on page 3. **Provide** the correct temperature reading for the following points indicated on the map:

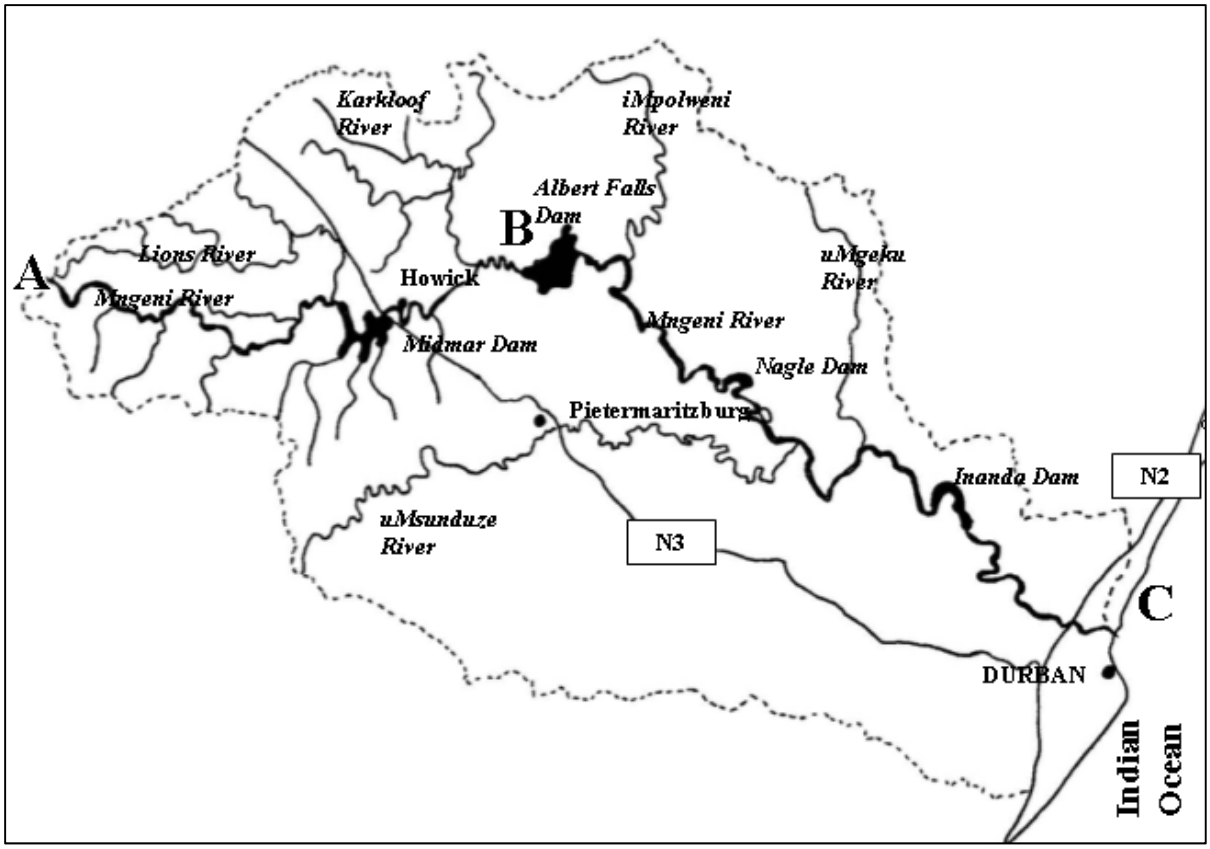
(a) X
(b) Y
(c) Z (6)

1.2.7 **Account for** the differences in temperature observed at X, Y and Z. (4)

1.2.8 **Identify** and **explain** TWO strategies urban designers could implement that would minimise the impacts of warmer temperatures at Y. (4)

1.3 Mngeni River Catchment Area

Figure 3: Mngeni River Catchment Area



Text Box:

From Inanda Dam, the Mngeni River flows with a gentle gradient for 24 km before it enters the sea at Durban. This part of the river is extensively modified, with the vegetation along the banks of the river and the channel significantly altered. River health in the Mngeni River is fair, mainly due to the purification of the water in Inanda Dam. Unfortunately by the time the river enters the sea, water quality is poor.

[Source: *State of Rivers, CSIR*]

1.3.1 Refer to Figure 3. **Draw** a longitudinal profile of the Mngeni River from point A to point C. On your profile label all temporary and permanent base levels of erosion. (6)

1.3.2 **Name** a tributary of the Mngeni River. (2)

1.3.3 **Calculate** the stream order of the Mngeni River and its tributaries from point A to where it enters the Albert Falls Dam (point B). (2)

1.3.4 According to the information in the Text Box, the lower course of the Mngeni River has been significantly altered downstream of the Inanda Dam. The water quality is poor at the river mouth.

Explain the possible factors responsible for:

(a) Changes to the river channel characteristics (4)
(b) Poor quality of the water (4)

1.4 Economic activities, transport and trade

Durban's Aerotropolis*

The Dube TradePort (DTP) and new international airport

The DTP is located about 30 km north of Durban's city centre. Its location capitalises on the fast growing tourism and business travel demand within the region, industrial property demand in the Durban North area, as well as the major **freight corridor** between Gauteng and the ports of Durban and Richards Bay.

The DTP is made up of three key elements:

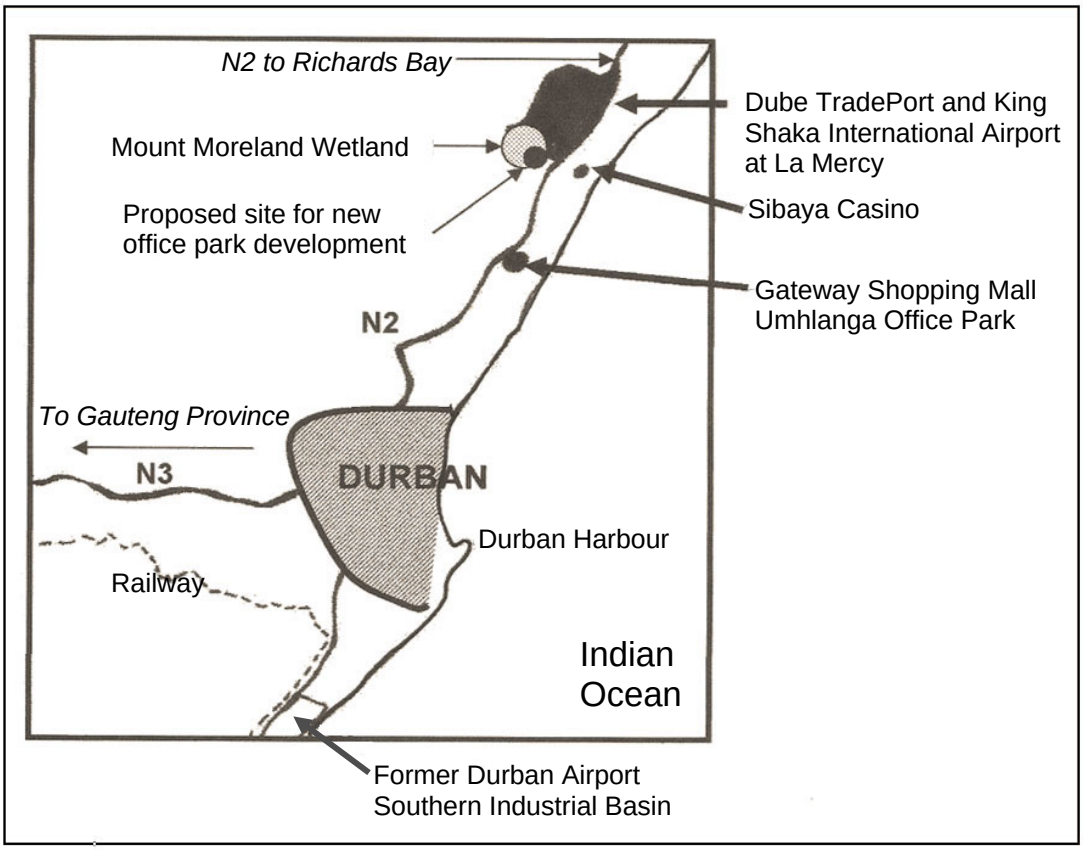
(a) King Shaka International Airport (KSIA), including a 3 700 m runway, a passenger terminal with initial capacity to handle four million passengers, and a number of retail and other related services.
(b) **Trade Zone,** including Cargo Terminal (warehousing and handling for a variety of economic sectors).
(c) Cyberport providing leading edge ICT (information, communication and technology) infrastructure and value-added services.

Environmentalists have expressed concern around the Dube TradePort development in that it is likely to cause an increase in noise pollution in the surrounding residential areas and affect the colony of over 2 million barn swallows which roost in the local area of Mount Moreland. The swallow flocks present huge safety concerns for the aircraft.

*__Aerotropolis__ = *Economic and infrastructural development around a major airport, providing economic and investment opportunities to the surrounding region.*

[Source:<www.dubetradeport.co.za>]

Figure 4: Dube TradePort Location



[Adapted from <www.dubetradeport.co.za>]

1.4.1 **Terminology**

Match the words in column A with the statement in column B. Write ONLY the number and the correct letter, e.g. 1 – A.

Use the source material to assist you.

Number	Column A	Letter	Column B
1	Secondary economic activity	A	Activities which have capitalised on fast growing tourism and business travel, providing people with opportunities and facilities to purchase goods, e.g. clothing, food, etc.
2	Freight corridor	B	The difference between the value of a country's visible exports and visible imports.
3	Retail services	C	Primary sector development opportunities.
4	Trade zone	D	Zone which separates various land-use zones or residential areas.
5	Balance of trade	E	Services that meet the basic needs of urban people, including water and shelter.
		F	A transport network, normally road and rail along which goods are transported between two places.
		G	Associated with the production and processing of products from raw materials.
		H	Zone specifically designed to handle the export and importing of goods. This includes warehousing and handling of various sectors.

(10)

1.4.2 Write a short essay of approximately 1 page in which you **predict** the impact of the Dube TradePort on future developments of this area. Refer to the source material and Figure 4. Reference must be made to the following factors:

- Economy of the area
- Local environment
- Transport infrastructure

Marks will be awarded for structure and planning. (16)

100 marks

END OF COMPULSORY QUESTION

SECTION B NATURAL ENVIRONMENTS

Answer ONE question from this section, **EITHER** Question 2 **OR** Question 3.

QUESTION 2 General circulation, synoptic weather map analysis, fluvial processes and mass wasting

2.1 General circulation

Study Photograph 1, a satellite image showing cloud conditions over Africa and surrounding areas on 15/01/2011 (page (i) of the Insert).

Multiple choice

Various options are given as possible answers to the following questions. **Select** the most appropriate answer from the list. Write down only the question number and the correct answer. For example: 2.1.1 – A.

2.1.1 The line of latitude labelled A is the …

A Tropic of Capricorn.
B Tropic of Cancer.
C Greenwich Meridian.
D Equator. (2)

2.1.2 Two air masses meet along the dashed line marked B. This is …

A the South Atlantic high pressure system.
B the Coriolis force.
C the Inter-Tropical Convergence Zone.
D a Tropical Cyclone. (2)

2.1.3 The atmospheric pressure along line B is …

A the equatorial high.
B low.
C high.
D the sub-tropical high. (2)

2.1.4 The high-pressure cell labelled C is found …

A in the Inter-Tropical Convergence Zone.
B in the sub-tropical high-pressure belt.
C in the Polar easterly belt.
D along the Polar front. (2)

2.1.5 The air movement associated with the high-pressure cell labelled C is …

A subsiding, diverging and rotating in a clockwise direction.
B rising, diverging and rotating in an anticlockwise direction.
C rising, converging and rotating in a clockwise direction.
D subsiding, diverging and rotating in an anticlockwise direction. (2)

2.1.6 The weather system labelled D is a …

A Tropical cyclone
B Willy-willy
C Typhoon
D Mid-latitude cyclone (2)

2.1.7 (a) **Identify** the weather system E situated over the east coast of Madagascar. (2)

(b) **Predict** the future movement of this weather system. (2)

(c) **Outline** the possible climatic impact this weather system will have on the north-east coast of Madagascar. (4)

2.2 South African synoptic weather map

Read the extract and study Figure 5, a synoptic weather map, dated 2010-06-14 (page 11).

Significant cold snap 14 – 15 June 2010

Weather advisory

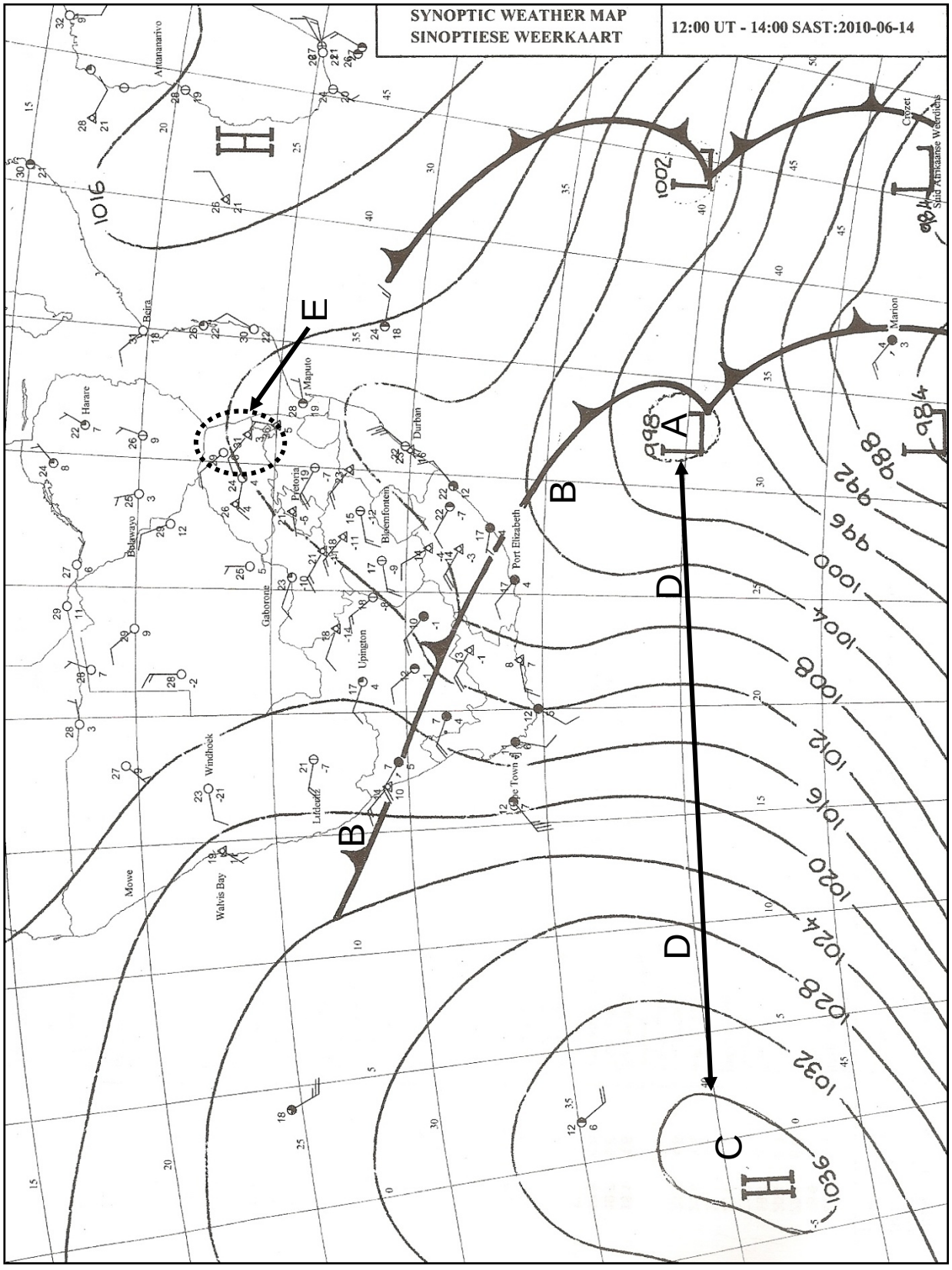
An intense cold front has made land fall in the Western Cape today 14 June 2010 and will be making its way across the country during the following 48 hours. Heavy snowfalls are expected overnight and tomorrow, over the higher lying areas of the country. By 16 June very low minimum temperatures are of concern as widespread frost and possible black frost is expected over the interior.

In addition rough seas may be experienced along the southern Cape coast and further up gale force winds are expected along the Eastern Cape and South Coast coastline (as far as Durban).

Conditions favouring the development of runaway fires are expected in the Lowveld of Limpopo Province today.

[Adapted from <weathersa.co.za>]

Figure 5: Synoptic weather chart, 2010-06-14



[Source: SA Weather Service]

2.2.1 Apart from the date of Figure 5, give TWO pieces of evidence that suggest it is winter. (4)

2.2.2 **Name** the following on Figure 5:

(a) weather system A (2)
(b) weather feature labelled B (2)
(c) the pressure cell labelled C (2)

2.2.3 **Suggest** why winds are strong along the line labelled D on Figure 5. (4)

2.2.4 **Explain** how the pressure cell C will impact on the weather associated with weather system A within the next 24 hours (Figure 5). (4)

2.2.5 Area labelled E (on Figure 5) could be experiencing berg winds.

(a) **Identify** TWO pieces of map evidence to prove that berg winds could be blowing in the area labelled E. (4)

(b) **Explain** the link between these winds and runaway fires. (4)

2.2.6 Study some headlines which appeared in local newspapers on 16 June 2010.

Cold kills 500 penguin chicks

Snow causes road chaos

Stock farmers face frosty conditions

Refer to the weather advisory (page 10) and the headlines above. Using a **mind map**, **evaluate** the impact that the passage of this cold front has had on the people and the environment. Your mind map must show the impact on the following:

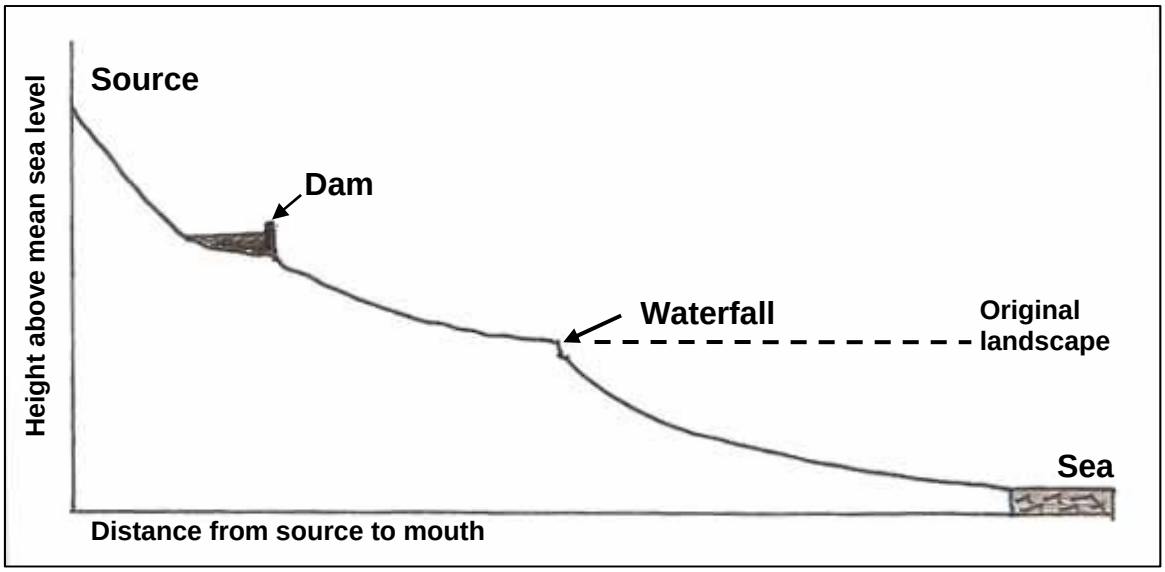
- Farming
- Weather conditions in high lying areas such as the Drakensberg and Lesotho
- Tourism (16)

Marks will be awarded for the structure of the mindmap and adherence to the suggested sub-headings.

2.3 Fluvial processes

Study Photograph 2 (page i in the Insert) and refer to Figure 6, a longitudinal profile of the river in Photograph 2.

Figure 6: A longitudinal profile of a river valley in the Eastern Cape



2.3.1 **Draw** a cross-section of the river channel from P to Q (Photograph 2). Label the main channel and the river features. (6)

2.3.2 Refer to Photograph 2 and Figure 6.
Read the following statements. In your answer book write the correct answer selected from the underlined words next to the correct question letter.

(a) This river shows a graded/ungraded profile.
(b) The waterfall represents a permanent/temporary base level of erosion.
(c) The longitudinal river profile shows that the sea level has dropped/ risen as a result of tectonic activity.
(d) Rejuvenation/degradation has occurred in the lower course of the river.
(e) The dam will increase/decrease the runoff below the dam wall. (10)

2.4 Mass wasting

Study Photograph 3 and Photograph 4 which are images of Chapman's Peak Drive near Cape Town, page (ii) of the Insert.

2.4.1 Study Photograph 3 carefully. With reference to the physical environment and topography of the area, **describe** and **explain** FOUR reasons why Chapman's Peak Drive experiences frequent mass movements, e.g. rockfalls. (8)

2.4.2 Chapman's Peak Drive was originally constructed between 1915 and 1922 and at the time this was regarded as an engineering achievement. With reference to Photograph 3, in your opinion, do you think the original road engineers planned and constructed is in the most suitable position? **Provide** TWO reasons for your opinion. (6)

2.4.3 Refer to Photograph 4.

(a) **Identify** TWO mass movement control measures put in place to prevent frequent rockfalls along this drive. (4)

(b) **Evaluate** the effectiveness of ONE of the above control measures. (4)

100 marks

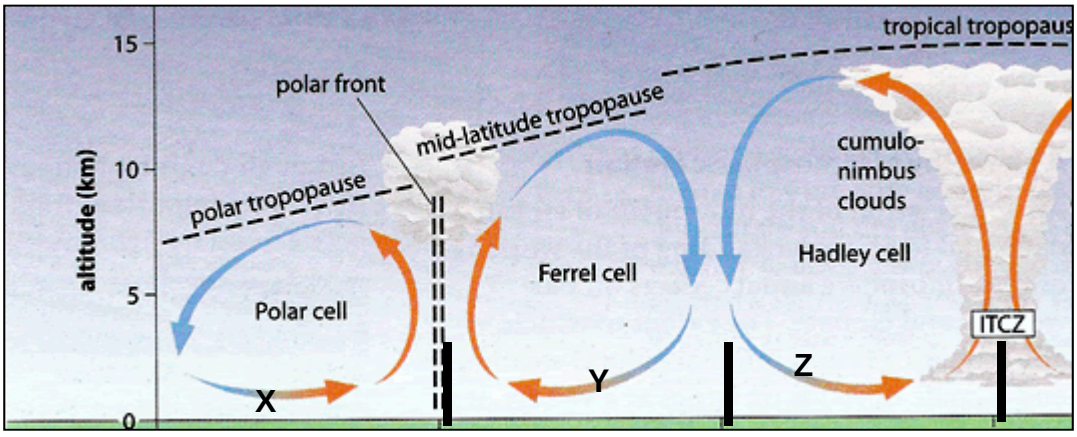
OR QUESTION 3

SECTION B NATURAL ENVIRONMENTS

QUESTION 3 Climate and weather, fluvial processes and landforms

3.1 Global Circulation

Figure 7: Tri-cellular model of atmospheric circulation



[Source: <www.geogonline.org>]

Note: Questions 3.1.1 to 3.1.5 refer to Figure 7 above.

3.1.1 **Provide** the correct latitudes at points A, B and C. (6)

3.1.2 **Identify** the typical air pressure expected at A, B and C. (6)

3.1.3 **Account for** the towering cumulonimbus clouds at the ITCZ. (4)

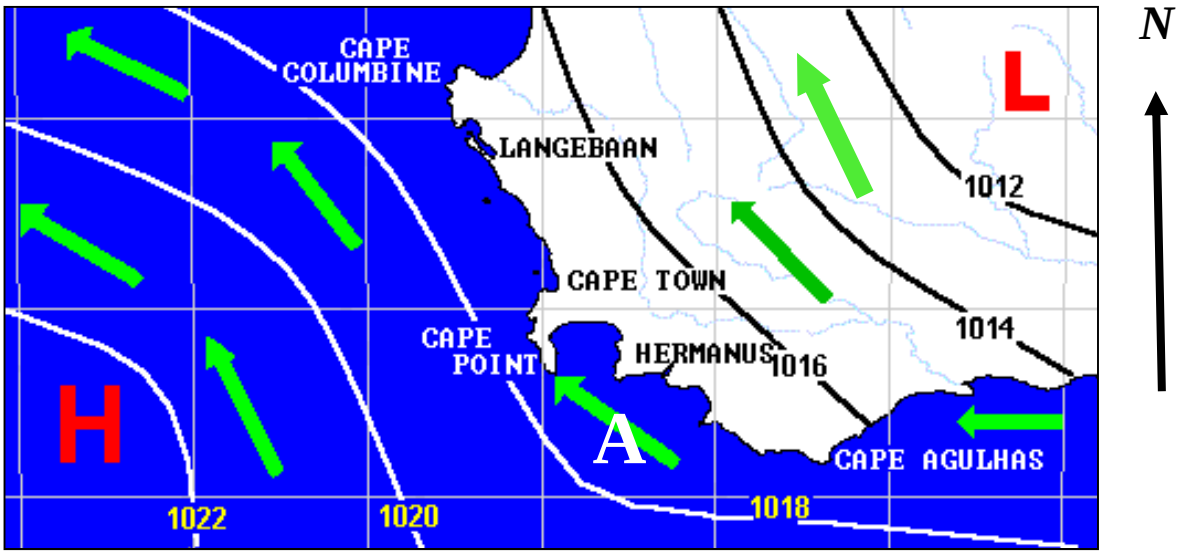
3.1.4 **Identify** the surface winds at X, Y and Z. (6)

3.1.5 **Account for** the development of the polar front at A. (4)

3.1.6 Scientists predict that global warming will influence the global circulation pattern. **Explain** THREE ways in which global warming may influence global circulation. (6)

3.2 Regional weather

Figure 8: Typical summer air pressure pattern over Cape Town



[Source: <http://www.1stweather.com/regional>]

Refer to Figure 8 above.

3.2.1 **Name** the wind identified by the letter A. (2)

3.2.2 **Account for** the direction of the wind marked A. (2)

3.2.3 The wind identified at A is frequently referred to as the 'Cape Doctor'. **Explain** why this is a suitable name. (2)

3.2.4 Redraw Figure 8, such that it reflects a typical winter pattern. Label your sketch weather map carefully. (6)

3.2.5 **Account for** the changes observed on the winter weather map you sketched (Question 3.2.4) as compared to the summer pattern reflected in Figure 8. (4)

3.3 Tropical Cyclone Yasi

Study the information below.

Australia evacuated thousands of people from its northeast coast on Tuesday as tropical cyclone Yasi bore down on tourism towns and rural communities, with officials saying it could even threaten areas deep inland that were ruined by floods last month.

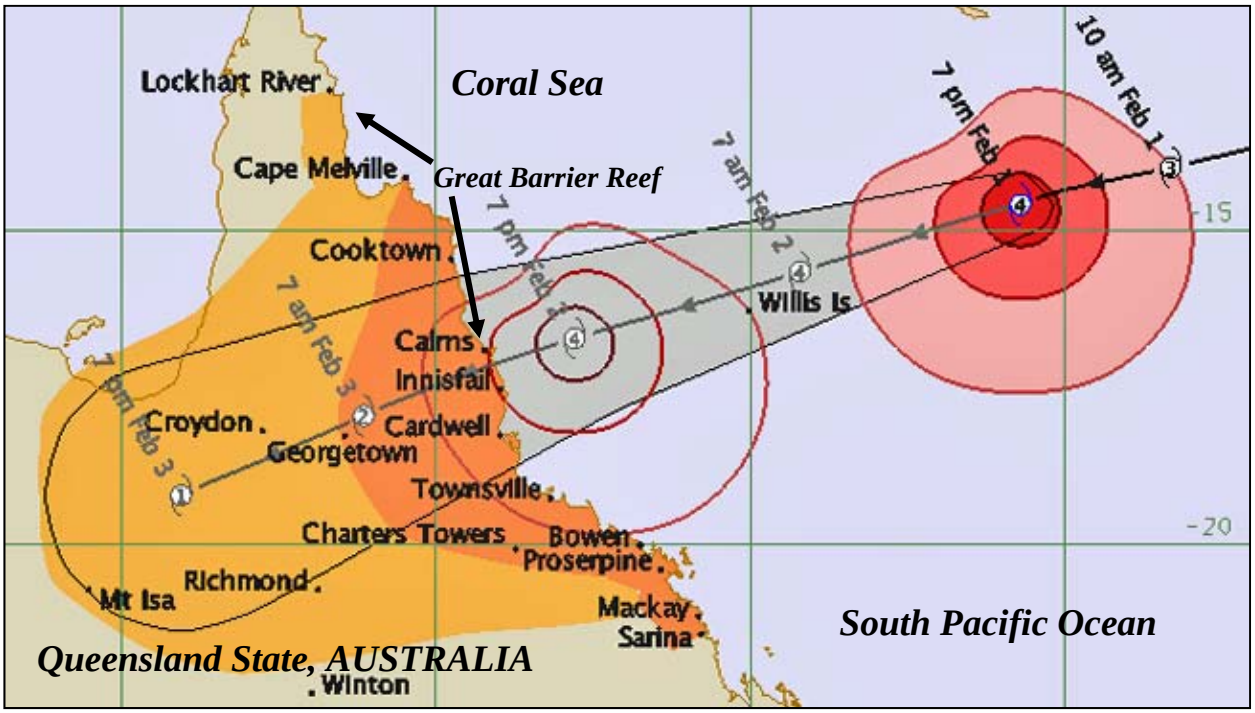
The Bureau of Meteorology upgraded Yasi to a category four storm and said its very destructive winds would pose a serious threat. Sea levels would rise significantly as it crossed the coast, the Bureau said.

More than 400 000 people live in the cyclone's expected path, which includes the cities of Cairns, Townsville and Mackay, which are also main tourist areas and take in Australia's Great Barrier Reef.

The military was evacuating nearly 40 000 people from low-lying coastal areas overnight officials said.

[Source: <www.cartoonstock.com>] [Source: *Reuters*, 1 February 2011]

Cyclone Yasi's projected path: 1 February 2011



[Adapted from: *Courier Mail Australia*, 3 February 2011]

3.3.1 Refer to the source material on Cyclone Yasi (page 17). **Compile** a **mind map** to assist tourists visiting Australia's Queensland coastline with important and relevant information about tropical cyclones. Make reference to the following aspects in your mind map:

- When to expect tropical cyclones in Australia
- Why Queensland (Australia) is prone to tropical cyclones along its coastline
- Expected weather conditions during a tropical cyclone
- What to do in the event of a tropical cyclone. (16)

3.4 Fluvial Geomorphology Terminology

Multiple choice. Select the correct answer from the options below. Write only the question number and correct letter down, e.g. 3.4.1 A.

3.4.1 A non-perennial river which only flows for a short period of time after rainfall is known as an/a …

A perennial river.
B episodic river.
C aquifer.
D exotic river. (2)

3.4.2 A drainage pattern which typically moves outward from a central highland area would be described as …

A angular.
B irregular.
C radial.
D centripetal. (2)

3.4.3 A knickpoint indicates the following on a longitudinal river profile:

A A change in the profile marked by a change in gradient normally due to a temporary base level.
B No change in gradient in the river profile.
C A change in the profile marked by the river reaching sea level.
D A change in the profile marked by little change in surface gradient. (2)

3.4.4 The process of river transportation involving the movement of large boulders along a river bed is known as …

A traction.
B abrasion.
C saltation.
D corrosion. (2)

3.4.5 When a river undergoes a new lease of life in terms of having greater erosive power, the river can be described as …

A a misfit stream.
B rejuvenated.
C meandered.
D deranged. (2)

3.5 The Upper Senqu River, Lesotho

Refer to Photograph 5 (page (iii) in the Insert).

3.5.1 **Identify** the fluvial features labelled A and B. (4)

3.5.2 **Describe** THREE erosion processes that have shaped this river channel. (6)

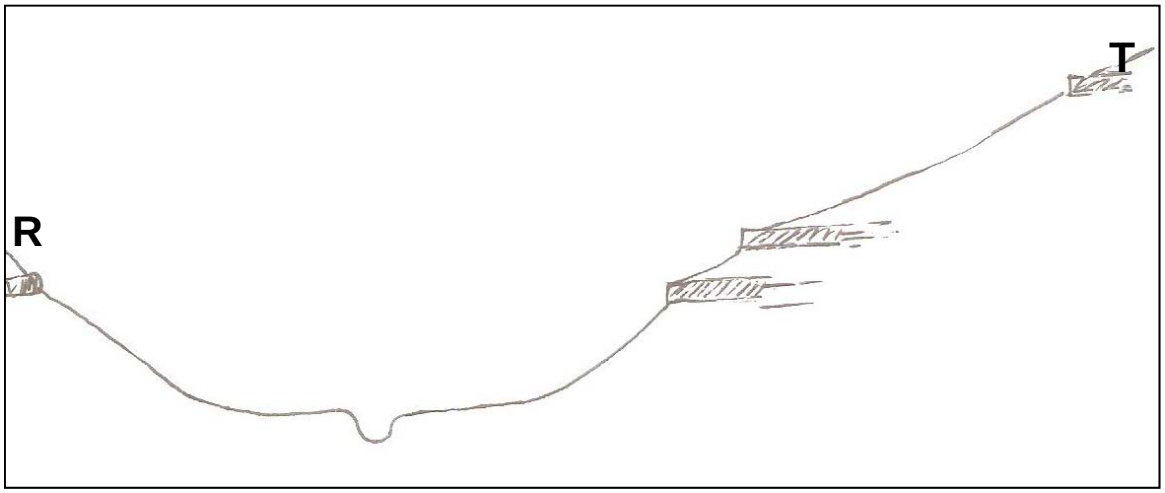
3.5.3 **Explain** why the farmers in area A (Photograph 5) experience frost in winter. (4)

3.5.4 A cross-section of the Upper Senqu River, from R to T, has been drawn below.

(a) **Copy** the cross section [R – T] of the Upper Senqu River into your answer book and label the following features on your cross section:

- terraced slope
- crest
- talus slope
- floodplain (4)

(b) **Indicate** on your diagram where gully erosion is mostly likely to occur. (2)



3.5.5 There is evidence of agriculture along the slopes of the Upper Senqu River valley. **Suggest** THREE hazards or problems farmers in this area may face. (6)

100 marks

SECTION C HUMAN ENVIRONMENTS

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

QUESTION 4 Urban settlement terminology, housing in settlements, agriculture and trade and water management

4.1 Terminology: Urban Settlement

Match the word(s) in column A with the statement in column B. Write ONLY the number and correct letter, e.g. 1 – A.

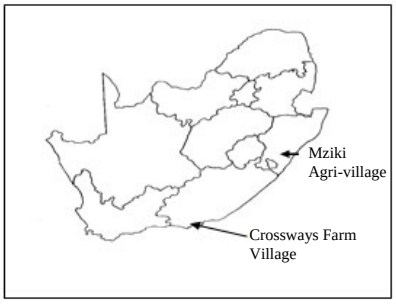
Column A		Column B	
1	Functional magnetism	A	A town that has grown initially due to only one dominant function such as mining.
2	Informal sector	B	The conscious choice by people to move out of an urban area and live in a rural area.
3	Urbanisation	C	When towns expand and merge to form a continuous built-up area.
4	Specialised town	D	Keeping the street front of an old building and modernising or rebuilding the interior.
5	Rural-urban fringe	E	Spacious upmarket apartments in old warehouses, close to the CBD.
6	Facadism	F	When old homes in residential areas close to the CBD are modernised and renovated.
7	Counterurbanisation	G	When similar activities group together in a certain area.
8	Urban blight	H	A zone surrounding the CBD usually of mixed land-use and where invasion and succession takes place.
9	Zone of transition	I	Everyday necessities such as bread and milk.
10	Gentrification	J	The growth of an urban area due to the movement of people from rural areas.
		K	When old buildings in an area are rundown and in a state of disrepair.
		L	The unregulated sector of the economy.
		M	A zone of mixed land-use on the outer edge or periphery of an urban area.

(20)

4.2 Newly planned farm villages

Read the Fact File below on the Crossways Farm Village (Eastern Cape) and the Mziki Agri-village (KwaZulu-Natal).

Fact File on the Crossways Farm Village and the Mziki Agri-village, both examples of newly planned farm villages



Crossways Farm Village, Eastern Cape

- Located near the Van Stadens River Gorge, west of Port Elizabeth.
- A new development costing about R3,4 billion.
- A global trend where people opt to live in a rural, agricultural environment.
- Crossways Farm Village will form part of an existing dairy enterprise, comprising 780 residential units to accommodate the entire income and housing range.
- Extensive sporting and outdoor recreational facilities will be provided.
- Cottage incentives for industry, retail, commercial and office components will be developed.
- Wireless and fibre optic technology will allow for security services and communication networks to operate efficiently.

Mziki Agri-village, KwaZulu-Natal

- Located in the rural area of Springvale, near Ixopo, Midlands region of KwaZulu-Natal.
- Covers an area of 190 ha and will eventually provide 385 homes on 200 m^2 plots.
- Homeowners will engage in subsistence farming and thus become self-sustaining.
- Commercially owned land will be used for commercial purposes.
- Department of Housing has funded the building of the houses and an international NGO has funded extras such as training in business, tools, skills and permaculture farming.
- Project includes a school, place of worship and clinic facilities.
- Land will be set aside for the development of small industries such as block making and craftware.

4.2.1 **State** ONE primary purpose for <u>each</u> of these planned farm village developments:

(a) Crossways
(b) Mziki (4)

4.2.2 **Describe** the farming activities which will take place in each farm village:

(a) Crossways
(b) Mziki (4)

4.2.3 The Crossways Farm Village is an example of global counterurbanisation trends. **Suggest** THREE reasons why counterurbanisation is a popular trend worldwide. (6)

4.2.4 The Mziki Agri-village is a rural development scheme. **Explain** THREE strategies that make this venture sustainable. (6)

4.3 Urban land-use

4.3.1 **Explain** the term 'urban sprawl'. (2)

4.3.2 **Suggest** TWO reasons why industry relocates from inner city areas to the outskirts of the city. (4)

Study Photographs 6 and 7 (page iii of the Insert).

4.3.3 Redraw the table below in your Answer Book. **Compare** and **contrast** the two housing developments shown in Photographs 6 and 7.

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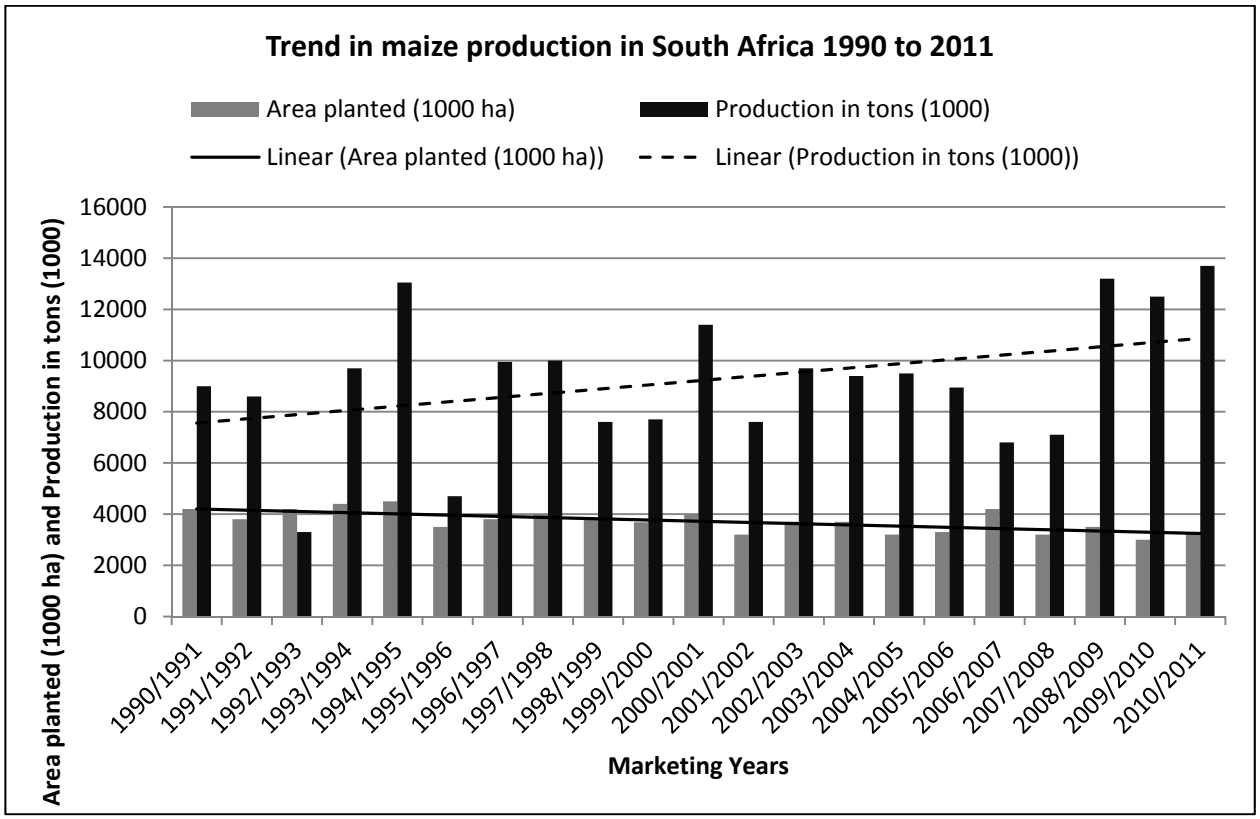
Type of housing	**Photograph 6**	**Photograph 7**
Where this type of housing development occurs in an urban area	(2)	(2)
Reasons why these housing developments have been constructed	1. 2. (4)	1. 2. (4)

4.4 Agriculture and trade in South Africa

Refer to Figure 9 below and the extract from an article on page 23.

Figure 9: Trend in the maize production in South Africa 1990 to 2011



Bumper maize crop depresses growers

- Favourable weather, with a La Niña, bringing cool, wet weather.
- Genetically modified (GM) seeds have given South Africa's maize farmers their biggest harvest since 1982.
- Old and worn rail lines and a strong Rand are keeping a record maize surplus within the country's borders.
- Although maize prices on international markets have rocketed, the rising Rand has eroded some of the benefits.
- Local farmers have created difficulties by using GM seeds, disliked across much of Africa.
- Over half the land farmed is allocated to the white variety of maize, popular on the African continent, but not in Europe or Asia.
- Some countries import GM crops for feedstock.
- The rail system is expensive and inefficient.
- Harbours are also among the most expensive in the world.

[Adapted from *Business Report* 26 November 2010]

4.4.1 Referring to Figure 9, **describe** the linear trend of area planted with maize for the period 1990 – 2011. (2)

4.4.2 **Describe** the linear trend in maize production in tons for the period 1990 – 2011. (2)

4.4.3 **Suggest** ONE factor which has contributed to the trend observed in Question 4.4.2. (2)

4.4.4 **Outline** TWO factors which have affected maize production for 2010 /2011. (4)

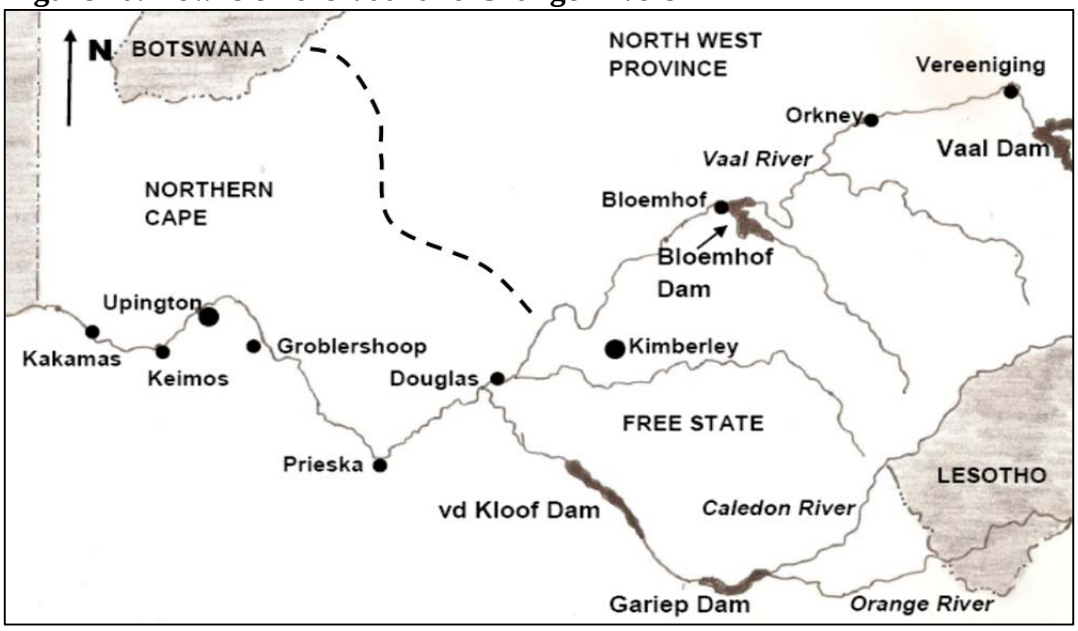
4.4.5 Refer to the source material above. **Explain** why trade and transport are problem areas for South African maize farmers. (6)

4.4.6 **Discuss** TWO possible solutions that will assist South African maize farmers with their current problems. (4)

4.5 Water management – Are flooding disasters human related or natural?

Refer to Figure 10 and the extract below.

Figure 10: Towns on the Vaal and Orange Rivers



[Adapted from: <www.timeslive.co.za>]

Who is to blame for the flash floods?

Farmers along the lower Orange River feel the recent floods in their region, which they see as human related, could have been prevented by better management of the release of water from the Vaal, Van der Kloof and Gariep dams.

A spokesperson for the Department of Water and Environmental Affairs said dams were built to service communities and not to save certain areas from floods. He denied that the flood was man-made and labelled it a natural disaster after heavy rain because of the La Nina weather pattern, like the floods in Australia and Brazil this year.

[*Business Times,* 22 January 2011]

4.5.1 What is a flash flood? (2)

4.5.2 **Describe** TWO main functions of dams. (4)

4.5.3 Write an essay of 1 – 1½ pages to examine whether the flooding disasters in January 2011 were of human-related or natural causes. Use (a) and (b) below as sub-headings:

(a) **Evaluate** the 2011 flooding along the lower Orange River from the following perspectives:
- the farmers
- the Department of Water and Environmental Affairs

(b) **Suggest** measures which could be implemented to lessen flood damage in the future. (16)

Marks will be awarded for the structure of the essay and adherence to the suggested sub-sections.

100 marks

OR QUESTION 5

SECTION C HUMAN ENVIRONMENTS

QUESTION 5 People and places: rural and urban settlement; people and their needs

5.1 Terminology: Rural Settlement

Match the correct term in Column A with the correct explanation in Column B. Write down the correct number and letter only, for example 1 – B.

Column A		Column B	
1	Dispersed settlement pattern	A	Landownership which hampers development in that people are not free to make decisions as land does not belong to them individually.
2	Local service centre	B	The minimum number of people required in order for a service to remain profitable.
3	Dry point settlement	C	The movement of people from a rural to an urban area.
4	Permaculture	D	Factors which drive people out towards the periphery.
5	Intensive farming	E	Agriculture that meets the needs of a farmer and his/her family.
6	Communal tenure system	F	Relates to rural governance and land ownership in rural areas.
7	Threshold population	G	A central place supplying the surrounding area with goods and services.
8	Unifunctional settlement	H	Every available area is used for cultivation.
9	Centrifugal forces	I	Located on higher ground, away from a flood plain.
10	Subsistence farming	J	Farmsteads situated some distance from one another.
		K	An agricultural system that is modelled on the relationships found in natural ecologies.
		L	The area or region served by a settlement.
		M	Having one major land-use or economic activity in the area.

(20)

5.2 Land claim issue

State prevents sugar industry from reaching land reform target

Because of the South African Sugar industry's uncertainty about the stalled **land reform** process, many sugar cane growers are putting on the brakes on capital expenditure. This is negatively impacting the national supply of cane for milling. Ironically, the local sugar industry has been a leader in transferring previously white-owned sugarcane land back to black beneficiaries. SA Sugar Association (SASA) pointed out that 19% of commercial sugarcane farms have already been successfully transferred to new black owners. Just over 10% of the currently white-owned farms need to be transferred to black owners by 2014 for the country's sugar industry to meet the government's 30% target. However, 52% of the area under sugar cane is currently under claim. The slow pace of **land reform**, in particular the **land restitution** process, continues to impact on the sustainability of South Africa's cane industry. This is evident in the disinvestment in farming activities.

[Adapted from: *Farmer's Weekly*, 28 May 2010]

5.2.1 **Provide** a brief explanation for each of the terms highlighted in bold in the above text:

(a) Land reform
(b) Land restitution (4)

5.2.2 **Classify** the sugarcane farms under claim as commercial or subsistence farms, giving a reason for your answer. (4)

5.2.3 Where are most of South Africa's sugar cane farms located and why? (4)

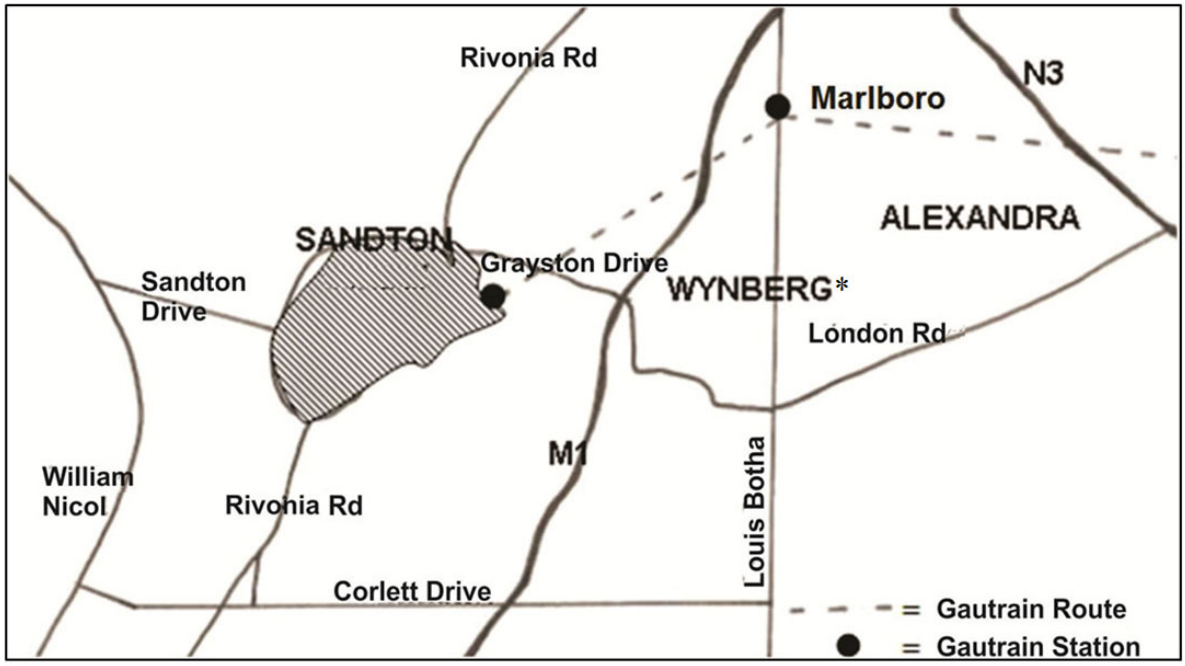
5.2.4 **Discuss** TWO reasons why the sugar cane industry is important to the South African economy. (4)

5.2.5 **Provide** THREE reasons justifying the land reform process in South Africa in 2011 and beyond. (6)

5.3 Contrasting land-use in Johannesburg

Study Photograph 8 and Photograph 9 in the Insert (page iv).

Figure 11: Sketch map indicating the location of Sandton and Alexandra, Johannesburg, Gauteng



*(*Wynberg is a light industrial area, east of Sandton.)*

5.3.1 Refer to Photograph 8 in the Insert (page iv). **Identify** the land-use zone marked A. **Provide** a reason for your answer. (4)

5.3.2 Decentralisation from the Johannesburg city centre to the northern suburbs of Sandton began in the 1980s.

(a) **Define** the urban process of 'decentralisation'. (2)

(b) **Describe** TWO factors that lead to the decentralisation of Johannesburg. (4)

5.3.3 Study Figure 11 carefully. **Identify** TWO factors that make Wynberg suited to a light industrial site. (4)

5.3.4 Study Photograph 9 in the Insert. **Suggest** TWO possible urban problems the residents of Alexandra deal with daily. (4)

5.3.5 Refer to Photographs 8 and 9 in the Insert.

Alexandra township is located about 10 minutes away from Sandton Central. Write an essay of 1 – 2 pages in which you **compare and contrast** these two regions of Johannesburg. Reference must be made to the following:

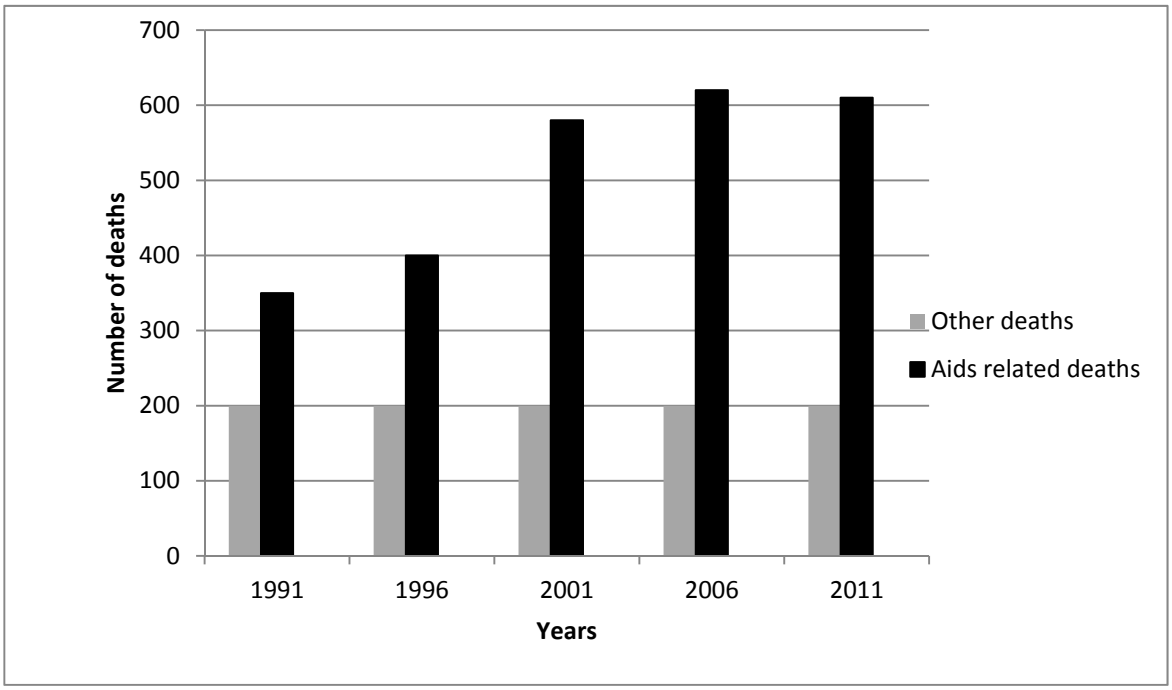
- Land-use
- Infrastructure
- Economic opportunities
- Sustainable strategies for efficient functioning of these areas to manage expanding centres and informal settlements (16)

Marks will be awarded for essay structure and planning of your essay.

5.4 The impact of HIV/AIDS on rural settlements

Study Figure 12 carefully.

Figure 12: Daily burials in KwaZulu-Natal, South Africa



[Source: Whiteside, A. *et al*. *The Impact of HIV/AIDS on Planning Issues in KwaZulu-Natal*]

5.4.1 **Describe** the trend illustrated by Figure 12 for AIDS related deaths. (4)

5.4.2 (a) **Predict** what may happen to the number of AIDS related deaths in 2015, based on the trend illustrated by the graph. (2)

(b) **Provide** TWO reasons for your prediction (a) above. (4)

5.4.3 According to research a large number of AIDS related deaths and burials are occurring in rural settlement areas of KwaZulu-Natal. **Draw** a **mind map** to illustrate the impacts of AIDS related deaths on rural settlements.

Consider the following points in your mindmap:

- Impact on the local economy of the region
- Impact on social and family circumstances
- Impact on rural settlement patterns (14)

100 marks

Total: 300 marks