NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2009

GEOGRAPHY: PAPER I

Time: 3 hours 300 marks

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

1. This paper consists of 26 pages and an 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:
   - interpretation and explanation; and
   - evidence of personal observation in the field where this is appropriate to the question.

5. You are encouraged to use sketch maps, diagrams and other explanatory drawings to support your answers whenever 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 to present your work neatly.

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

SECTION A GEOGRAPHICAL ISSUES

QUESTION 1 Sustainable Environments

Note: This question is compulsory and must be answered by all candidates.

1.1 **Terminology**

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

Column A		Column B	
1	Ecological footprint	A	A programme that focuses on partnerships between local communities in achieving greater sustainability.
2	Environmental Impact Assessment	B	Pollution released from industrial activity and vehicle fumes.
3	Emission	C	An area in a city where development may not take place. Provides open space for recreation and relaxation.
4	Quaternary Activity	D	The movement of river water from one catchment to another across a watershed.
5	Sustainable	E	Materials which can be naturally replenished, i.e. they are not finite.
6	Agenda 21	F	An economic activity concerned with research and development. Employees in this sector require a high level of skills.
7	Greenbelt	G	Economic activities which are not formally registered with the government.
8	Inter-basin transfer	H	Using natural resources at a steady rate that is not likely to damage the environment or use up the resource.
9	Informal Sector	I	The impact of an urban settlement/individual on the wider environment.
10	Renewable resources	J	An investigation carried out prior to a development ensuring that no damage is done to the environment and surrounding communities.
		K	Focuses on implementing the Millennium Development Goals by 2015.

(10)

1.2 Human Made Climates

Figure 1: A roof garden on top of the Toyota Factory in Japan

Roof gardens are increasingly becoming a focus for reducing the negative environmental impact of cities. Research has indicated that roof gardens will reduce the intensity of the urban heat island effect and promote a more sustainable urban environment.

[Source: <Businessweek.com>]

1.2.1 What is an urban heat island? (2)

1.2.2 **Identify** and **explain** THREE causes of the heat island effect. (3 × 2 = 6)

1.2.3 **Explain** how roof gardens could decrease the heat island effect. (2 × 2 = 4)

1.2.4 **Suggest** THREE other ways of reducing the impact of the urban heat island effect to create a more sustainable urban environment. (3 × 2 = 6)

1.3 Urban Drainage

Refer to Photograph 1 (page i of the Insert).

1.3.1 **Explain** why precipitation is higher in urban areas. (2 × 2 = 4)

1.3.2 With reference to Photograph 1, draw a simple storm hydrograph representative of the discharge into an urban river soon after the storm. (2 × 2 = 4)

1.3.3 **Describe** the shape of the hydrograph drawn in Question 1.3.2. (2 × 2 = 4)

1.3.4 With reference to Photograph 1:

(a) **Explain** why the surface runoff is greater in an urban area. (2 × 2 = 4)
(b) **Describe** TWO problems associated with heavy surface runoff as seen in Photograph 1. (2 × 2 = 4)

1.3.5 **Suggest** THREE sustainable solutions to minimise the risk of excess surface runoff in urban environments. (3 × 2 = 6)

1.3.6 **Provide** TWO examples of relevant information a GIS specialist would use in order to improve the management of drainage systems in the built up urban environment. (2 × 2 = 4)

1.3.7 **Demonstrate** how torrential rainfall in densely populated areas could cause mass movement on slopes. (3 × 2 = 6)

1.4 Sustainable Urban Strategies

Around the world owners of residential and commercial buildings alike are becoming more aware of the need to *go green* and develop eco-friendly sustainable urban environments.

Figure 2: The way cities are

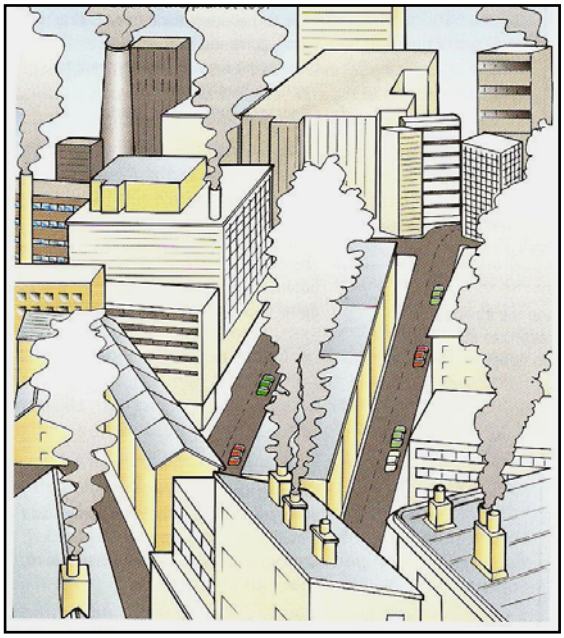
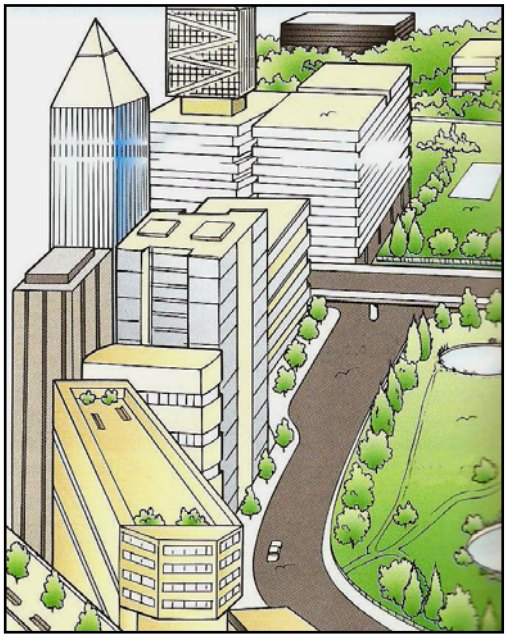


Figure 3: Future Cities



[Source: Adapted from Warn and Naish, *Changing Environments* (2000)]

Refer to the source material above.

1.4.1 **Explain** the meaning of the phrase *go green.* (2)

1.4.2 **Discuss** why increasing numbers of architects and urban designers are realising the importance of *green* urban environments. (3 × 2 = 6)

1.4.3 Using Figures 2 and 3 as a guide, **compile** a FIVE point checklist entitled *How to make cities green and sustainable*. (5 × 2 = 10)

1.5 Economic Activities

The location of industry depends on many factors including:

Transport	Raw materials	Government policies	Labour

1.5.1 Copy the above table into your Answer Book. Place the relevant words in the box below, under the correct column in the table. Use as much space as required.

timber, management, harbour, iron ore, incentives, subsidies, railway, skilled workforce

(8)

1.5.2 Industry within urban areas can negatively impact upon people and the environment.

(a) How does industry affect people who live in close proximity to industrial areas? ($2 \times 2 = 4$)

(b) Should people be compensated if they are negatively affected by industry? **Defend** your answer. ($3 \times 2 = 6$)

100 marks

SECTION B NATURAL ENVIRONMENTS

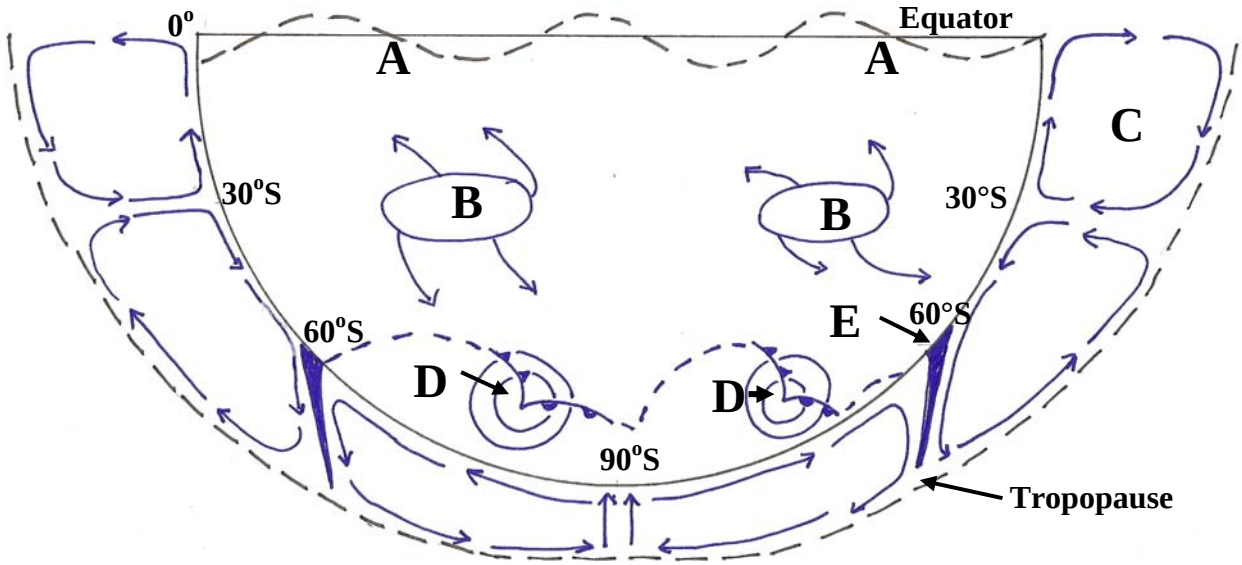
Answer ONE question from this section, **EITHER** Question 2 **OR** Question 3.

QUESTION 2 Primary Circulation, Synoptic Weather Map Analysis, Structural Landscapes and Climatic Hazards

2.1 Primary circulation

Study Figure 4 below which shows primary circulation and the tricellular arrangement in the southern hemisphere.

Figure 4: Primary circulation and the tricellular arrangement in the southern hemisphere



2.1.1 **Identify** the climatological features labelled A to E on Figure 4:

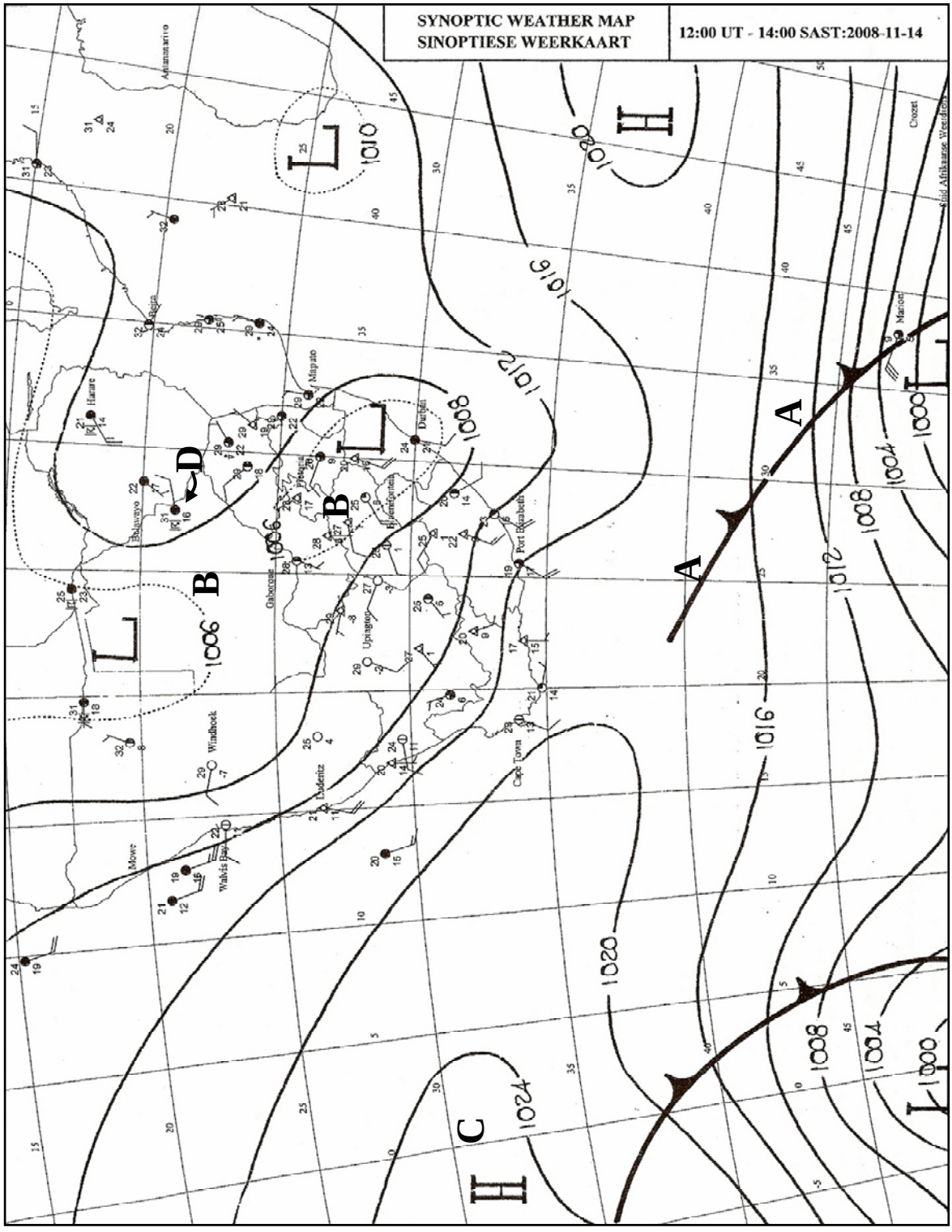
A Pressure belt along the equator.
B Pressure associated with these cells.
C Vertical cell of circulation.
D Weather systems that form in this area.
E Boundary between these two different air masses. (5 × 2 = 10)

2.1.2 Weather systems labelled D generally move from west to east. Give TWO reasons for this path. (2 × 2 = 4)

2.2 South African Synoptic Weather Map

Study Figure 5, a Synoptic Weather Map for 2008-11-14.

Figure 5: Synoptic Weather Map 2008-11-14



[Source: SA Weather Services]

2.2.1 **Identify** the weather features labelled A, B and C on the synoptic weather map. (3 × 2 = 6)

2.2.2 (a) **Describe** the position of the TWO high pressure cells on the synoptic weather map. (2 × 2 = 4)

(b) **Explain** the role these high pressure cells play in determining the summer rainfall pattern over South Africa. (3 × 2 = 6)

2.2.3 Francistown in Botswana (D) is experiencing thunderstorms. With the aid of an annotated diagram, **demonstrate** why thunderstorms are occurring here. (3 × 2 = 6)

2.2.4 Read the following headlines, which appeared in two newspapers on 15 and 17 November 2008 respectively.

'Severe storm' kills eight, rips RDP homes up
It took less than seven minutes for 'tornado-like winds' and heavy rains to devastate the area of Molweni, near Hillcrest, KwaZulu-Natal, on Friday, reducing hundreds of RDP houses to rubble and leaving eight people dead, including three children.

Freak weather patterns on Friday saw heavy hail in parts of Hillcrest and Pinetown and torrential downpours in Durban, but the few minutes of gale-force winds destroyed the lives of hundreds of families in Molweni.

[*The Cape Argus*]

Promise to rebuild Molweni
Kwazulu-Natal Premier S'bu Ndebele has promised that the houses of Molweni residents destroyed in Friday's storm are to be rebuilt before Christmas. Over 400 houses were destroyed by the storm, which also claimed the lives of eight people.

[*The Witness*]

(a) **Describe** the weather associated with such severe storms referred to in the newspaper articles. (2 × 2 = 4)

(b) **Suggest** precautions the local community could take to prevent a disaster such as this in the future. (3 × 2 = 6)

2.3 Structural landscapes, slopes and fluvial action

Study Photograph 2 (page i of the Insert) which shows a structural landscape.

2.3.1 (a) **Identify** the landform in the middle of Photograph 2. (2)

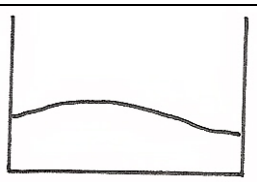
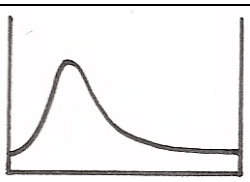
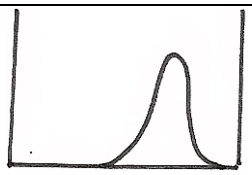
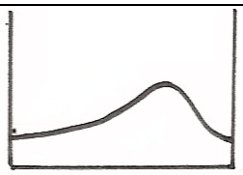
(b) Draw a neat sketch cross-section of this landform (from A to B) as it appears in Photograph 2. Label the following on your sketch:

- the resistant rock strata; and
- the two different slopes. (3 × 2 = 6)

2.3.2 What can you deduce about the climate of the area in Photograph 2? Use evidence from the photograph. (2 × 2 = 4)

2.3.3 The river flow at B (on Photograph 2) is episodic.

(a) **Select** the correct hydrograph below which shows the type of flow of river B after a rainstorm. Write down the correct number in your answer booklet.

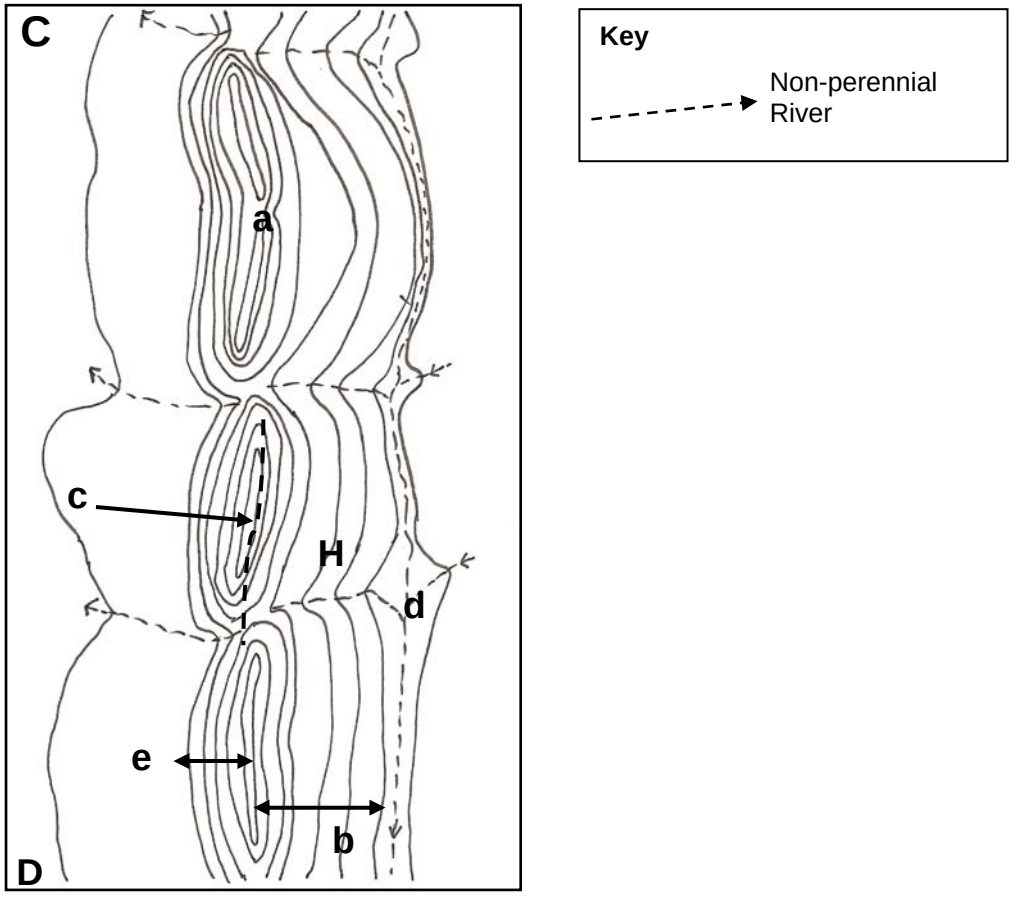
			
1	2	3	4

(2)

(b) **State** ONE reason for your choice of hydrograph. (2)

2.3.4 Study the sketch contour map below (Figure 6) which represents the landform (from C to D) in Photograph 2 (page i of the Insert).

Figure 6: Sketch contour map of landform shown in Photograph 2



Match the list of features labelled **a** to **e** on Figure 6 with the correct description listed below. Write down the letter and the description of the feature next to the letter, e.g. (d) Saddle.

- Watershed
- Non-perennial stream
- Concave slope
- Even slope
- Saddle (5 × 2 = 10)

2.3.5 A farmer is planning to build self-catering huts on a hiking trail at H (Photograph 2 and Figure 6). Give ONE climatic advantage and ONE climatic disadvantage of building at this site. (2 × 2 = 4)

2.4 Climate hazards and human responses

Read the extract below and refer to Table 1, a summary of some of the recent extreme weather associated with mid-latitude cyclones in South Africa.

Bad weather or bad planning?

Human settlement in unsuitable places exacerbates* the consequences of extreme weather

Mike Laing – Weatherman

*exacerbates – worsens [*The Witness*, June 2007]

Table 1: A summary of some of the recent extreme weather associated with mid-latitude cyclones in South Africa

Year and month	Event	Main consequences	Other Comment
June 2007	Severe weather with cold front; berg winds	Devastating fires in KZN, Free State and Mpumalanga; heavy rainfall	Thousands of hectares of timber lost; livestock burned
July 2008	Severe weather with cold front; berg wind conditions	Devastating fires followed by deep snowfalls	People trapped in the Drakensberg
September 2008	Snow blankets the country as winter grips	Snow more than a metre deep in places	Traffic routes closed

Write an essay of 1½ – 2 pages in which you **discuss** the following:

- The recent extreme weather caused by mid-latitude cyclones
- The impact of the bad weather on the economy
- Human response to these hazards (12 × 2 = 24)

100 marks

OR

QUESTION 3 Synoptic Interpretation, Global Air Circulation, Tropical Cyclones, Fluvial Action and Structural Landforms

3.1 Synoptic Weather Map Interpretation

Multiple Choice

Study the synoptic weather map, Figure 7 (page 13). **Select** the most appropriate answer from the list. Write down only the question number and correct letter, e.g. 3.1.1 – A.

3.1.1 This synoptic chart is representative of summer conditions because …

A there is a cold front approaching Cape Town.
B temperatures are higher over the interior of South Africa.
C the Kalahari high pressure is located over the interior.
D berg wind conditions are expected in Durban. (2)

3.1.2 Select the most appropriate weather forecast for Port Elizabeth (weather station has been enlarged to assist you).

A Cloudy, with a maximum temperature of 23 °C and a minimum temperature of 18 °C.
B Cloudy with a south-south easterly wind blowing at 50 knots.
C Partly cloudy with a warm midday temperature of 23 °C.
D Cloudy, with an air temperature of 23 °C and a dew point temperature of 18 °C. A 10 knot wind is expected to blow. (2)

3.1.3 The low pressure system located over the interior of South Africa is likely to bring the following conditions …

A Stable air with a strong chance of cyclonic rain.
B Unstable air with a likelihood of thunderstorms.
C Warm, dry conditions.
D Cold conditions with a chance of light snowfalls. (2)

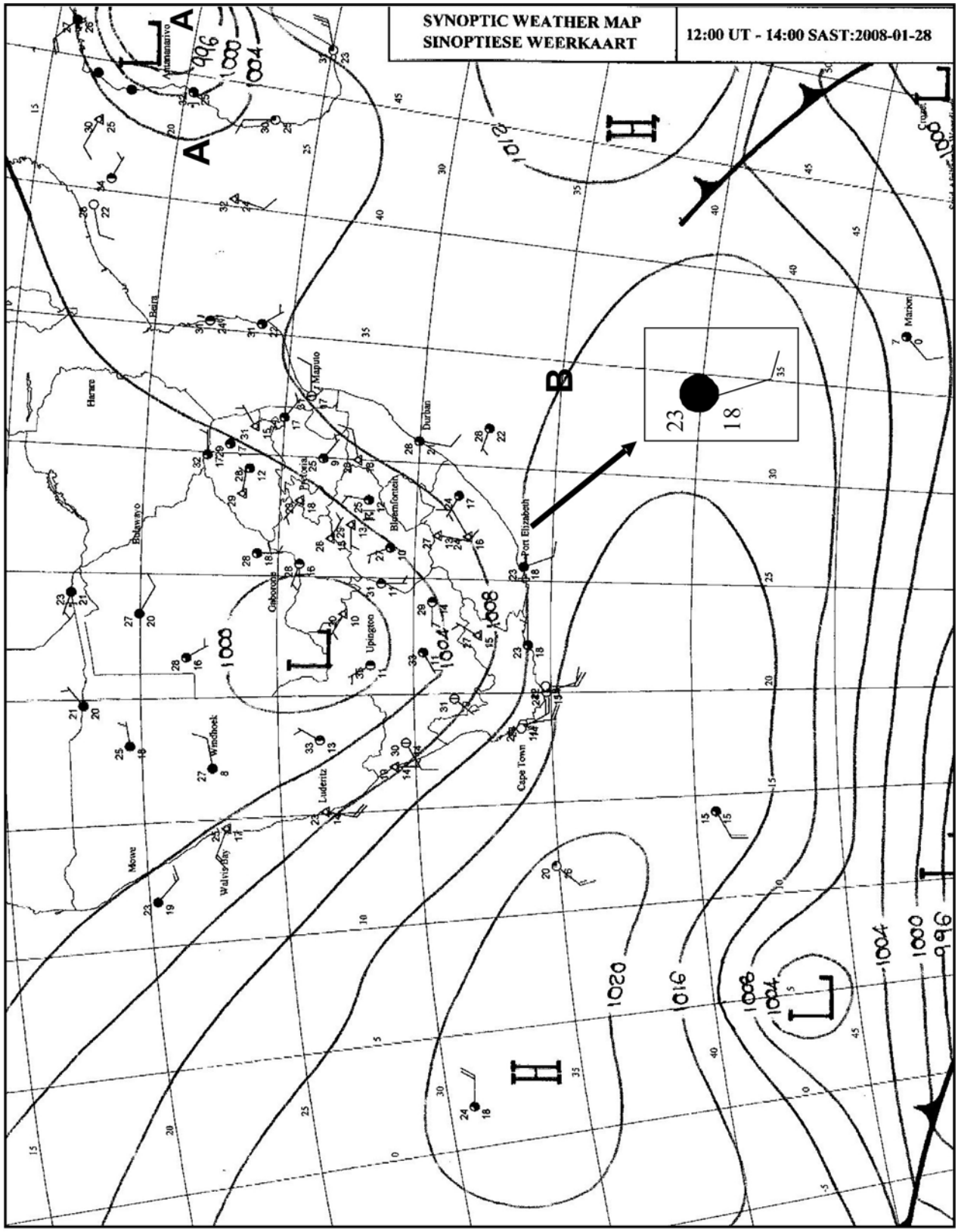
3.1.4 The system indicated at **A** on the weather map could mature into a …

A coastal low pressure system.
B high pressure trough.
C cut-off low.
D tropical cyclone. (2)

3.1.5 The air pressure at point **B** on the weather map is …

A 1012hPa.
B 1010hPa.
C 1014hPa.
D 1006hPa. (2)

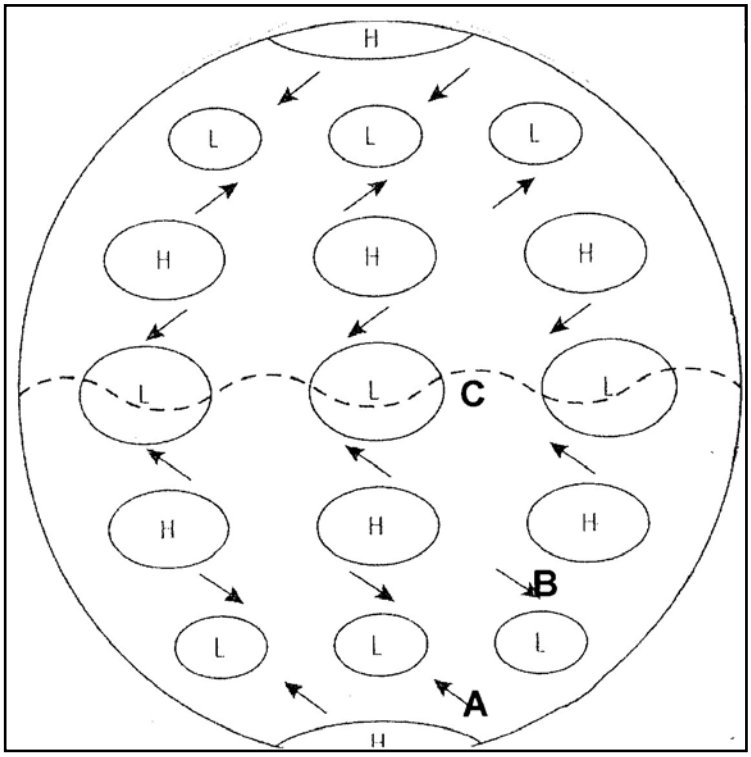
Figure 7: Synoptic Weather Map



[Source: SA Weather Services]

3.2 Global Air Circulation

Figure 8: A sketch representative of global air circulation patterns



3.2.1 **Name** TWO important factors influencing global air circulation. (2)

3.2.2 Refer to Figure 8. **Identify** the wind systems at:

- A
- B (2)

3.2.3 Briefly **describe** the formation of the ITCZ as illustrated at point C on Figure 8. (2 × 2 = 4)

3.2.4 Briefly **discuss** how global warming could influence global air circulation. (2 × 2 = 4)

3.3 Tropical Cyclones

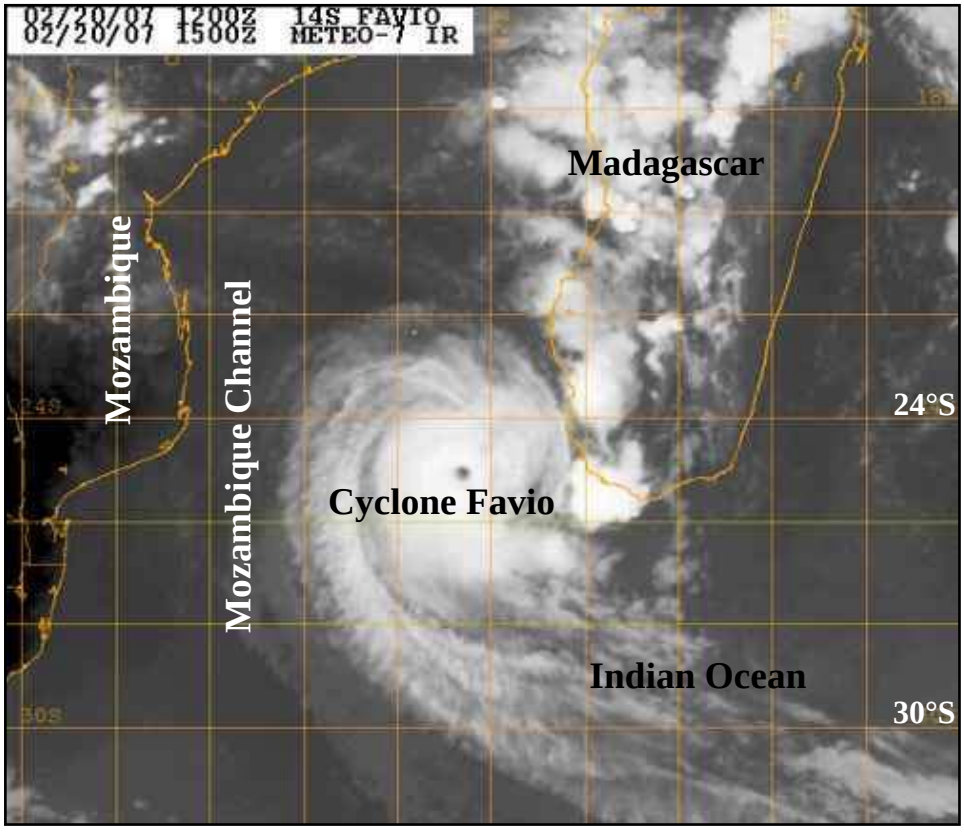
Read the information below and study the satellite photograph (Figure 9) carefully.

Tropical cyclone Favio, an *intense tropical cylone* developed in the Indian Ocean, about 1 200 kilometers from Madagascar on 14 February 2007. It gradually moved southwest, passing off-shore of Reunion and Mauritius (east of Madagascar). By February 20, it was just off the southern shore of Madagascar as a mature storm.

Forecasters were concerned about its behaviour when it entered the warmer water of the Mozambique Channel. The storm was forecast to reach Category four strength before coming on shore and tracking inland through Zimbabwe, bringing heavy rains to already flooded areas. The storm was turning around the southern end of Madagascar, headed for the Mozambique Channel.

[Source: SA Weather Services]

Figure 9: Satellite Image of Cyclone Favio



[Source: Naval Research Laboratory]

3.3.1 Using Figure 9, how is one able to determine that the large weather system visible is a tropical cyclone? (2 × 2 = 4)

3.3.2 Using the information available, draw a synoptic sketch map in which you illustrate Cyclone Favio. Clearly indicate the path taken by cyclone Favio from 14 – 20 February 2007. Ensure your map is carefully labelled. (3 × 2 = 6)

3.3.3 According to the article, forecasters were concerned about the behaviour of Cyclone Favio as it entered the Mozambique Channel. **Provide** TWO reasons why the forecasters were worried. (2 × 2 = 4)

3.3.4 The following *Emergency Management Plan* has been put together for a MEDC* nation to help assist their citizens when a tropical cyclone warning is issued.

Write an essay of 1 – 1½ pages in which you:

- **Identify** and **discuss** which of the points mentioned below would not be suitable for residents of rural Mozambique.
- **Suggest** more appropriate strategies rural communities of Mozambique could adopt to better prepare for a tropical cyclone. (10 × 2 = 20)

(* MEDC = *more economically developed country*)

Emergency Management Plan for MEDC* Nations:
When a cyclone warning is issued

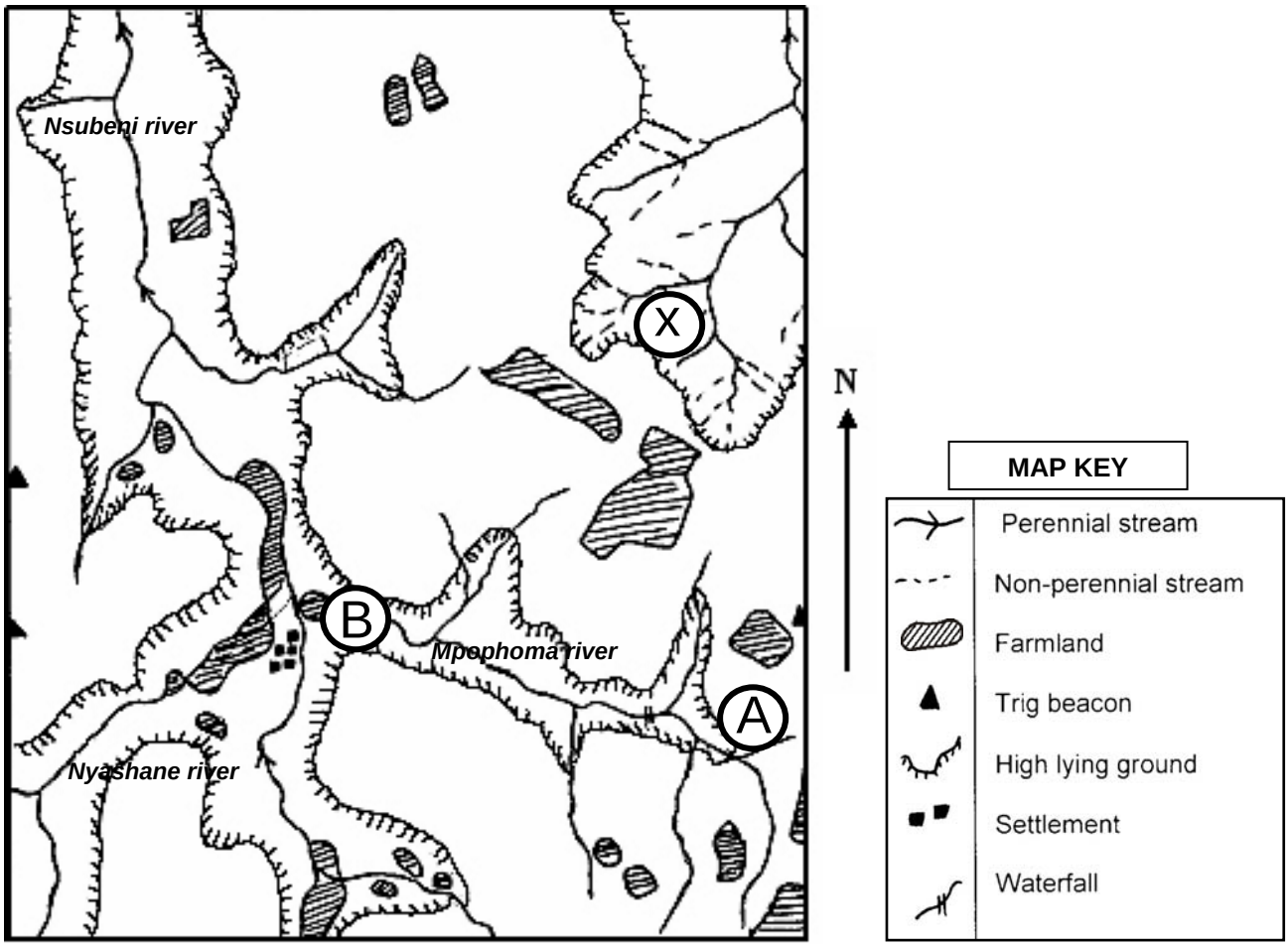
- If requested by local authorities, collect children from school or childcare centre and go home.
- Park vehicles under solid shelter (hand brake on and in gear).
- Put wooden or plastic outdoor furniture inside with other loose items.
- Close shutters or board-up or heavily tape all windows. Draw curtains and lock doors.
- Pack an evacuation kit of warm clothes, essential medications, baby formula, nappies, valuables, important papers, photos and mementos in waterproof bags to be taken with your emergency kit.
- Large/heavy valuables could be protected in a strong cupboard.
- Remain indoors (with your pets).
- Stay tuned to your local radio/TV for further information.

[Source: Adapted from: <http://www.disaster.qld.gov.au/disasters>]

3.4 Fluvial Action

Study Figure 10 which shows the Nsubeni River basin, which is situated in close proximity to the Battlefields area of northern KwaZulu-Natal.

Figure 10: The Nsubeni River Basin



3.4.1 **Name** TWO tributaries of the Nsubeni River. (2)

3.4.2 **Calculate** the stream order of the Nsubeni River at point B on the map. (2)

3.4.3 Draw a longitudinal river profile of the Mpophoma river from A – B. On your profile indicate:

- Knick point/temporary base level ($3 \times 2 = 6$)

3.4.4 **Comment** on the distribution of subsistence agriculture as represented in Figure 10. ($2 \times 2 = 4$)

3.4.5 The Nsubeni rural farming community is regularly affected by run-away bush fires. Community members have noticed fires occur more regularly during the winter. Draw a flow chart in which you assist the community by **explaining** the following:

- Possible causes of these fires ($2 \times 2 = 4$)
- Preventative measures ($2 \times 2 = 4$)

3.4.6 Many small rural settlements are located within the river valley illustrated in Figure 10.

(a) How might these communities negatively impact upon the water quality of the rivers in this area? (2 × 2 = 4)

(b) **Suggest** THREE appropriate catchment management strategies communities could adopt to preserve water quality in the area. (3 × 2 = 6)

3.5 Structural Landform, slopes and mass movement

Study the photograph, Photograph 3 (page ii of the Insert) which shows a landform in the historic Battlefields area of KwaZulu-Natal.

3.5.1 **Identify** the landform in Photograph 3 labelled X. (2)

3.5.2 Refer to the landform visible in Photograph 3. **Identify** the 3 slope elements, labelled A, B and C. (3 × 2 = 6)

3.5.3 The Battlefields is a popular destination for local and international tourists. **Predict** the impact of this activity on the surrounding natural landscape. (2 × 2 = 4)

100 marks

SECTION C HUMAN ENVIRONMENTS

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

QUESTION 4 Rural settlement, urban renewal and trade

4.1 Study Photograph 5 (page iii of the Insert). The photograph shows a farming community in the Little Karoo, Western Cape. Read the Fact File below.

FACT FILE: Little Karoo

- A long valley bordered by the Swartberg and the Langeberg Mountains in the Western Cape.
- An area of fold mountains, clear streams and a unique biome.
- Semi-arid climate with a winter rainfall which gives rise to various microclimates.
- Little Karoo winemakers produce a wide variety of quality wines from vines grown along the fertile river banks.
- Little villages and hamlets dot the landscape.

[Adapted from: <http://www.sa-venues.com/attractionswc/karoo-attractions.htm>]

4.1.1 **Describe** the farming settlements in Photograph 5 by selecting THREE correct words from the box below.

rural, urban, subsistence, arable, commercial, radial

(3 × 2 = 6)

4.1.2 **Describe** the site of the settlement at Y, using evidence from Photograph 5. (2 × 2 = 4)

4.1.3 **Describe** the situation of this settlement (Y). (2 x 2 = 4)

4.1.4 Using evidence from Photograph 5, **suggest** TWO problems the farmers in this area could face. (2 × 2 = 4)

4.1.5 Worker housing sites are located at W on Photograph 5. The farmers in the area are involved in community upliftment. **Elaborate** on the services and basic needs the worker families living here could require. (5 × 2 =10)

4.1.6 Study Photograph 4 (page ii of the Insert), an abandoned farmstead in the Karoo.

(a) What causes people to leave an area such as this? (2 × 2 = 4)

(b) This farm has recently been bought as part of a land reform programme. **Discuss** how the new owners could redevelop this farm using the principles of Agenda 21 (for rural areas). (3 × 2 = 6)

4.2 Urban renewal processes

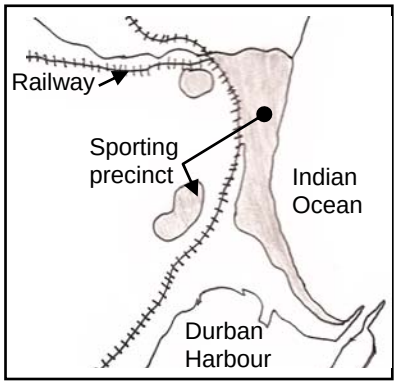
Improving facilities and infrastructure for 2010

Study Photograph 6 (page iv of the Insert) which shows the Moses Mabhida Stadium under construction in Durban. Many South African cities are building large Soccer Stadia for the Fifa World Cup Soccer tournament to be held in 2010.

Read the Fact File and refer to the location map of the stadium.

FACT FILE: Durban's new soccer stadium

- Multipurpose 70 000 seating stadium for sports events (including football, rugby and athletics), as well as for recreational and cultural events.
- A new Kings Park Railway Station is being developed next to the stadium. A broader public transport system in the inner city, with large sections of travel in dedicated busway lanes will be developed.
- Development of Sporting precinct* which includes social, cultural, sporting and commercial outlets for the public.



- Public transport ranks and pedestrian facilities will be enhanced.
- New retail areas are being incorporated, accommodating the area's more than 12 000 traders.
- A centre arch, 106 m high will become a world first tourist attraction.

(*precinct – area or zone of the city with a specialised function)

Key:
● = Position of the new Moses Mabhida Soccer Stadium

[Adapted from: <www.durban.gov.za/durban/discover-durban/2010/moses>]

4.2.1 **List** THREE locational factors which determined the site of this stadium in Durban. $(3 \times 2 = 6)$

4.2.2 **Predict** how the new commercial and retail developments in this area will impact on the informal sector. $(4 \times 2 = 8)$

4.2.3 Write a report for a local newspaper where you **explain** and highlight the following:

- How the local formal economy will benefit from this stadium development.
- Some of the inner city problems which need to be addressed before 2010.
- Importance of the new infrastructure developments in this area of the city (refer to the Fact File).
- Importance of a recreational and sporting precinct in a city.

Your report should be 1½ – 2 pages in length. Use subheadings to structure your report. $(12 \times 2 = 24)$

4.3 Trade

4.3.1 A number of trade concepts are listed in Column A and various explanations of these concepts are listed in Column B. **Match** the correct explanation with the concept. Write only the correct letter and number, e.g. A – 2.

	Column A		Column B
A	Balance of trade	1	Trading between countries without having to pay tariffs, such as within the EU.
B	Trade blocs	2	Goods transported out of a country to another part of the world.
C	Exports	3	Growing interconnectivity of the world's economy.
D	Globalisation	4	Goods transported into a country from another part of the world.
E	Free market	5	Refers to the payment obligations that arise when a country exports or imports goods.
		6	Groups of countries with common favourable trade agreements.

(5 × 2 = 10)

4.3.2 **South African Trade**

Study Table 2.

Table 2: South African trade

Imports (Rbn): Rbillion: To South Africa from:

	Germany	China	United States	Japan	United Kingdom
2006	24 456	12 046	37 660	38 916	28 624

Exports (Rbn): Rbillion: From South Africa to:

	Japan	United States	United Kingdom	Germany	China
2006	28 233	32 132	21 120	54 335	42 642

[Adapted from Customs and Excise Jan – Nov 2006]

(a) **List** South Africa's top trading partner (2006) with respect to:
(i) Imports
(ii) Exports (2)

(b) **Calculate** South Africa's balance of trade with China for 2006. (2)

(c) Why is this balance of trade with China in South Africa's favour? **Explain** your answer. (2 × 2 = 4)

(d) In 2008 – 2009 the global economy experienced a global recession. **Elaborate** on how this economic change has impacted on South Africa's trade relations with countries mentioned in Table 2. (3 × 2 = 6)

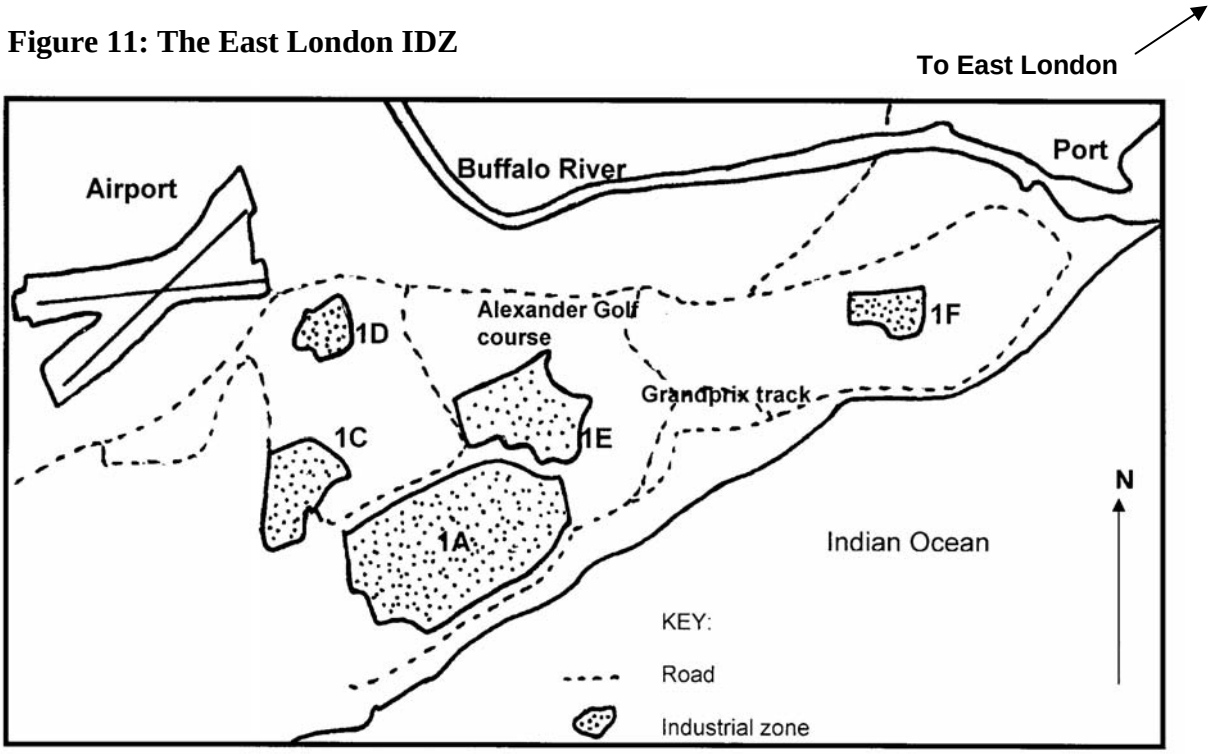
100 marks

OR

QUESTION 5 Economic Activities, Settlement, Transport and Water

5.1 Economic Activities

Figure 11: The East London IDZ



[Source: Adapted from <elidz.co.za>]

Using Figure 11 above and the list of words below complete the paragraph below by filling in the missing information. You need only write down the question number and corresponding answer, e.g. 5.1.1 East London.

Eastern Cape, primary, five, port, vehicles, airport, Buffalo, golf, Western Cape, grandprix racing, employment, secondary, four

The East London Industrial Development Zone (IDZ) is located in the (5.1.1) _____ Province. The development of this industrial region commenced in 2002. It consists of (5.1.2) _____ major zones according to the map. The East London (5.1.3) _____ at the mouth of the (5.1.4) _____ river is an important break-of bulk point in this region. (5.1.5) _____ and (5.1.6) _____ are two key recreational activities in the area. The IDZ aims to uplift the local economy and provide (5.1.7) _____ to many residents in the nearby city. The Mercedes-Benz automative assembly factory in located in the region and is an example of a (5.1.8) _____ economic activity.

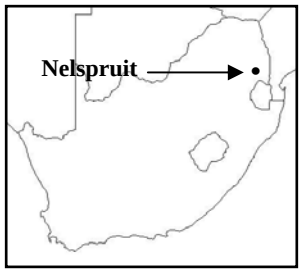
(8)

5.2 Settlement and Transport

Read the information below.

Surrounded by wide open spaces,
Nelspruit struggles to manage its rapid growth.

Position of Nelspruit in South Africa



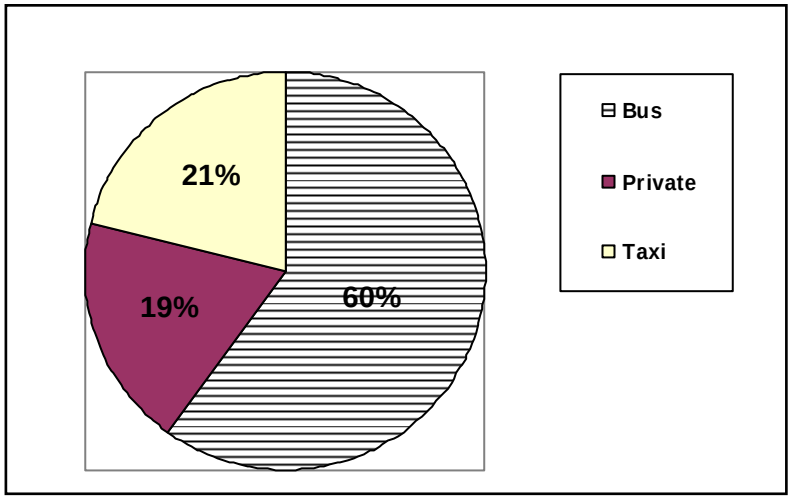
Nelspruit lies between Witbank and Komatiepoort on the N4 highway. Agriculture remains the main activity in the area, subsequently many agricultural related businesses and link industries have opened. It became a provincial capital in 1994, and has undergone a period of **rapid urbanisation** since then. Nelspruit and its surrounding agricultural areas form a part of the Mbombela Municipality.

[Adapted from: *Urban Greenfile*, December 2007]

Key challenges Nelspruit currently faces:

- Limited land space due to surrounding high quality agricultural land.
- High cost of housing.
- Former homeland and township regions are up to 50 km away from the town.
- Rapid growth has lead to **haphazard development** with little regard to infrastructural and social needs.
- Little strategic planning to make provision for conservation of the natural environment.

Figure 12: 52 000 people commute to Nelspruit daily



[Source: *Urban Greenfile*, December 2007]

5.2.1 Nelspruit is the capital city of which South African province? (2)

5.2.2 **Explain** the term '*rapid urbanisation*' which appears in bold in the source material (page 23). (2)

5.2.3 What factor was responsible for the original development and growth of Nelspruit? (2)

5.2.4 **Provide** THREE reasons for the rapid expansion and development of Nelspruit in recent years. (3 × 2 = 6)

5.2.5 According to Figure 12, which mode of transport is used by the largest majority of commuters? **Provide** a reason as to why this mode of transport may be favoured over others. (2 × 2 = 4)

5.2.6 With reference to the source material, **account for** the huge number of commuters that enter Nelspruit on a daily basis. (2 × 2 = 4)

5.2.7 **Suggest** TWO challenges commuters to Nelspruit may face. (2 × 2 = 4)

5.2.8 **Propose** TWO possible solutions the Mbombela Municipality could adopt to reduce the large number of commuters. (2 × 2 = 4)

5.2.9 Many immigrant people are living in the surrounding areas of Nelspruit.

(a) **Name** TWO neighbouring African countries in close proximity to Nelspruit, from which these immigrants may originate. (2)
(b) Why might these foreigners seek refuge in the Nelspruit area? (2 × 2 = 4)
(c) How might foreigners benefit the surrounding communities? (2 × 2 = 4)

5.2.10 Refer to the source material. Study the key challenges Nelspruit faces. In an essay of 1 – 1½ pages **comment** on and **explain**:

- Why Nelspruit faces each of the challenges that it does.
- **Formulate** possible solutions to solve the challenges mentioned.

(12 × 2 = 24)

5.3 A rural development project and water management

Read the information below.

The Cloud Catchers: Netting Water from Mist

When the rock phosphate mine in Vredenberg situated on the West Coast closed down in 1999, residents of the nearby village community were left unemployed. A number of residents of this impoverished community are hard at work creating a vegetable garden that will generate money, create future employment and guarantee **food security**. The garden uses water that is collected with mist nets. As the West Coast is known for extreme summer heat, lots of mist and **water scarcity**, the Agricultural Research Council have set up the mist nets as an experiment in collecting mist as a source of water for human and animal use. Mist nets are mounted in an elevated position, as the mist rises, condensation forms bigger drops which collide with the net and feed into a collection pipe that runs into a storage tank.

[Source: *Farmer's Weekly*, 31 October 2008]

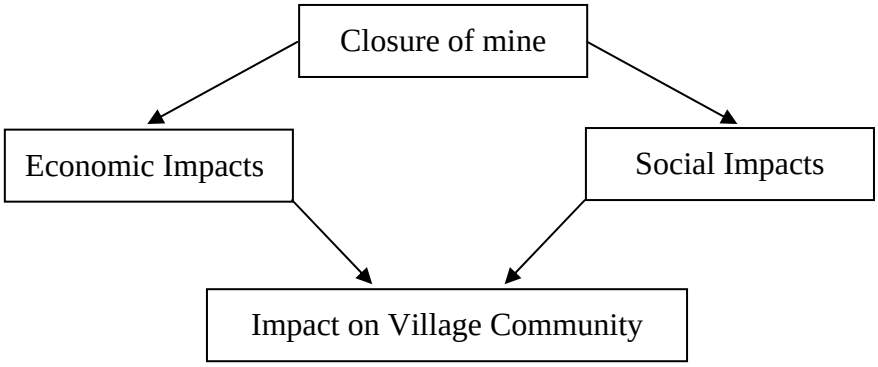
5.3.1 **Classify** mining as an economic activity. (2)

5.3.2 **Explain** what the terms in bold mean:

(a) Food security (2)
(b) Water scarcity (2)

5.3.3 **Explain** why the community vegetable gardens are a form of intensive agriculture. (2 × 2 = 4)

5.3.4 Draw a flow chart in which you indicate the impact the closure of the rock phosphate mine has had on the rural community village.
Use the following structure for your chart. Give points for each sub-section.



(4 × 2 = 8)

5.3.5 **Explain** why the *Cloud Catchers* project fulfils the aims of Agenda 21. (3 × 2 = 6)

5.3.6 In your opinion is the *Cloud Catchers* project a good example of the sustainable use and management of water? **Motivate** your answer. (3 × 2 = 6)

100 marks

Total: 300 marks

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.
Comment	To give your opinion or make a statement about something.
Compile	To draw up or put a list together.
Defend	To argue in support of something.
Demonstrate	To show that you understand something.
Describe	To explain something and provide reasons.
Discuss	To explain by argument the various aspects of a statement.
Elaborate	To give details about something.
Explain	To describe something so that it can be understood.
Formulate	To put forward, to suggest.
Identify	To give the details or characteristics of something.
List	To write down, to provide a list of facts or reasons.
Match	To connect similar things or things that belong together.
Motivate	To provide valid reasons.
Name	To state something, to give; to mention.
Predict	To tell something in advance; to foretell of a future event.
Propose	To make a suggestion, to offer your solution to a problem.
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.