



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

GEOGRAPHY P1

FEBRUARY/MARCH 2016

MARKS: 225

TIME: 3 hours

This question paper consists of 12 pages and an 11-page annexure.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of four questions.
2. Answer ANY THREE questions of 75 marks each.
3. All diagrams are included in the ANNEXURE.
4. Leave a line between subsections of questions answered.
5. Start EACH question at the top of a NEW page.
6. Number the answers correctly according to the numbering system used in this question paper.
7. Number the answers in the centre of the line.
8. ENCIRCLE the question numbers that you have answered on the front cover of the ANSWER BOOK.
9. Do NOT write in the margins of the ANSWER BOOK.
10. Illustrate your answers with labelled diagrams, where possible.
11. Write neatly and legibly.

SECTION A: CLIMATE, WEATHER AND GEOMORPHOLOGY

Answer at least ONE question in this section. If you answer ONE question in SECTION A, you must answer TWO questions in SECTION B.

QUESTION 1

1.1 Use FIGURE 1.1, a satellite image of a tropical storm, and answer the questions that follow.

1.1.1 Identify the type of cyclone represented in the satellite image.

1.1.2 Is this a high- or low-pressure system?

1.1.3 In which season does this weather system occur?

1.1.4 Name the prevailing winds that drive this cyclone.

1.1.5 Name the global air circulation cell in which this system occurs.

1.1.6 Which ONE, Réunion or Mauritius, will experience less severe weather?

1.1.7 What does the name Edilson reveal about the number of cyclones experienced in this season?

1.1.8 Name the cloud that is found around the eye of this cyclone.

(8 x 1) (8)

1.2 Refer to FIGURE 1.2 and label the diagram by completing the statements below. Write only the answer next to the question number (1.2.1–1.2.7) in the ANSWER BOOK.

1.2.1 **A** is a/an ..., which is a mountain range that separates one catchment area from another catchment area.

1.2.2 **B** is a/an ..., which is a high-lying area within a catchment area, which separates tributaries.

1.2.3 **C** is the ..., which shows the origin of a river system in mountainous high-lying areas.

1.2.4 **D** is the ... where two or more streams join.

1.2.5 **E** is a/an ..., which provides water to the main river.

1.2.6 **F** is in the ... course of the river.

1.2.7 **G** is the ... where the river flows into the sea.

(7 x 1) (7)

- 1.3 FIGURE 1.3 shows the mature (warm sector) stage of development of a mid-latitude cyclone.
- 1.3.1 Give another name for this weather system. (1 x 1) (1)
- 1.3.2 Give reasons for the low air temperature at **D**. (2 x 1) (2)
- 1.3.3 Draw a cross section of front **A** from point **E** to point **F**. Clearly indicate the main cloud type and air movements. (4 x 1) (4)
- 1.3.4 Give the latitudes in degrees between which mid-latitude cyclones develop. (1 x 2) (2)
- 1.3.5 Give evidence to support the statement that this mid-latitude cyclone is in the mature (warm sector) stage of development. (1 x 2) (2)
- 1.3.6 Explain how the South Indian high-pressure cell will affect the movement of the mid-latitude cyclone. (2 x 2) (4)
- 1.4 Study FIGURE 1.4, showing anticyclones over South Africa.
- 1.4.1 Name each of anticyclones **A**, **B** and **C**. (3 x 1) (3)
- 1.4.2 Anticyclones are associated with stable weather conditions over the interior of South Africa, particularly during winter. Draw a labelled sketch to illustrate the influence of the interior anticyclone on South Africa's weather. (4 x 1) (4)
- 1.4.3 In a paragraph of approximately EIGHT lines, explain the influence of the intertropical convergence zone (ITCZ) on the changing position of the three anticyclones, relative to South Africa. (4 x 2) (8)
- 1.5 Refer to FIGURE 1.5, which shows the changes in drainage density of a drainage basin over the course of the year.
- 1.5.1 Define the term *drainage density*. (1 x 1) (1)
- 1.5.2 Which ONE of the drainage basins, **A** or **B**, shows the drainage density during the dry season and rainy season respectively? (2 x 1) (2)
- 1.5.3 Explain why the drainage density of the drainage basins changes during the course of the year. (2 x 2) (4)
- 1.5.4 The change in drainage density changes the stream order of the drainage basin over the course of a year. In a paragraph of approximately EIGHT lines, explain why this is the case. (4 x 2) (8)

- 1.6 Refer to FIGURE 1.6, a photograph of a river channel pattern, and answer the questions that follow.
- 1.6.1 Name the river channel pattern in the photograph. (1 x 1) (1)
- 1.6.2 State ONE stream process that would have encouraged the formation of this stream channel pattern. (1 x 1) (1)
- 1.6.3 In which course of the river would you find the stream channel pattern in the photograph? (1 x 1) (1)
- 1.6.4 Describe the process involved in the river breaking up into smaller channels. (2 x 2) (4)
- 1.6.5 Analyse the role that the trees would have played in the stream discharge. (2 x 2) (4)
- 1.6.6 Suggest, with a reason, whether the stream channel pattern in the photograph would be found permanently, or seasonally, in rivers in the interior of South Africa. (2 x 2) (4)
- [75]**

QUESTION 2

- 2.1 FIGURE 2.1 shows the influence of aspect on different valley slopes located at 24°16'S.
- 2.1.1 Is the influence of aspect on the valley slopes more evident in summer or in winter?
- 2.1.2 Will slope **X** or slope **Y** receive direct rays of the sun?
- 2.1.3 Which slope, **X** or **Y**, will have the highest groundwater content?
- 2.1.4 Will slope **X** or slope **Y** be more suitable for crop farming?
- 2.1.5 Which slope, **X** or **Y**, is called the shadow zone?
- 2.1.6 Are settlements more likely to be located at **A** or **B**?
- 2.1.7 Would valley slopes closer to the equator be more or less influenced by aspect?
- 2.1.8 Are forests more likely to be found on slope **X** or slope **Y**? (8 x 1) (8)

- 2.2 Study FIGURE 2.2, showing a section of a river course and answer the questions that follow.
- 2.2.1 Name the course of the river between **A** and **C**.
- 2.2.2 Does **A** indicate the source or the mouth of the river?
- 2.2.3 Name the type of erosion at **B**.
- 2.2.4 Name the fluvial feature at **C**.
- 2.2.5 What type of erosion takes place at **C**?
- 2.2.6 Name the slope that has formed on the outer bank at **D**.
- 2.2.7 Would this river have a graded or an ungraded river profile? (7 x 1) (7)
- 2.3 Refer to FIGURE 2.3, showing a plan view and cross section of a South African berg wind.
- 2.3.1 Give TWO pieces of evidence from the sketch to support the statement that FIGURE 2.3 shows a berg wind. (2 x 1) (2)
- 2.3.2 Why do berg winds mainly develop during winter? (2 x 1) (2)
- 2.3.3 Give reasons for the high temperature and low humidity of a berg wind when it reaches the coast. (2 x 2) (4)
- 2.3.4 Explain why berg winds are viewed as having a negative influence on humans and farming. (3 x 2) (6)
- 2.4 FIGURE 2.4 shows a temperature inversion over a city.
- 2.4.1 What is a *temperature inversion*? (1 x 1) (1)
- 2.4.2 What evidence on the graph shows that a temperature inversion is occurring? (1 x 1) (1)
- 2.4.3 What message does the lid over the smog convey? (1 x 2) (2)
- 2.4.4 State TWO ways in which smog affects the quality of life of people. (2 x 2) (4)
- 2.4.5 In a paragraph of approximately EIGHT lines, suggest sustainable methods that can be used to reduce the amount of smog produced over a city. (4 x 2) (8)

- 2.5 FIGURE 2.5 indicates river capture (stream piracy).
- 2.5.1 Label **S** and **Y** with the terms 'captor stream' and 'captured stream' respectively. (2 x 1) (2)
- 2.5.2 Name the features of river capture at **A** and **B** respectively. (2 x 1) (2)
- 2.5.3 Give TWO reasons for river **S** eroding at a faster rate. (2 x 2) (4)
- 2.5.4 In a paragraph of approximately EIGHT lines, explain the impact of river capture on the volume of water and the erosive ability of rivers **B** and **S** respectively. (4 x 2) (8)
- 2.6 Study FIGURE 2.6, which lists some tips from the Department of Water Affairs for the sustainable management of catchment areas and drainage basins in South Africa, and then answer the questions that follow.
- 2.6.1 Define the term *overexploitation*. (1 x 1) (1)
- 2.6.2 What is a *catchment area*? (1 x 1) (1)
- 2.6.3 Explain how removing alien vegetation will help prevent the overexploitation of water resources in South Africa. (2 x 2) (4)
- 2.6.4 How does the conservation of wetlands contribute to the sustainable management of a drainage basin? (1 x 2) (2)
- 2.6.5 Discuss the importance of preserving vegetation cover in a drainage basin. (3 x 2) (6)
- [75]**

SECTION B: RURAL AND URBAN SETTLEMENTS AND SOUTH AFRICAN ECONOMIC GEOGRAPHY

Answer at least ONE question in this section. If you answer ONE question in SECTION B, you must answer TWO questions in SECTION A.

QUESTION 3

3.1 Refer to FIGURE 3.1, a photograph of a settlement. Choose the correct word(s) from those given in brackets. Write only the word(s) next to the question number (3.1.1–3.1.7) in the ANSWER BOOK, for example 3.1.8 tertiary.

3.1.1 The photograph is an example of a/an (rural/urban) settlement.

3.1.2 This settlement is known as a/an (isolated farmstead/village).

3.1.3 The physical factor responsible for the choice of site of the settlement is the (flat land/river).

3.1.4 The agricultural lands in this photograph are cultivated by (machines/labourers).

3.1.5 The settlement depicted is (dispersed/nucleated).

3.1.6 The agricultural product grown in this area is most likely (grains/fruits).

3.1.7 This settlement is (unifunctional/multifunctional). (7 x 1) (7)

3.2 Choose an example from COLUMN B that matches the term in COLUMN A. Write only the letter (A–I) next to the question number (3.2.1–3.2.8) in the ANSWER BOOK, for example 3.2.9 J.

COLUMN A		COLUMN B	
3.2.1	Primary activity	A	information technology
3.2.2	Secondary activity	B	roads, railways and communication
3.2.3	Export market	C	mining
3.2.4	Quaternary activity	D	local trade
3.2.5	Small-scale farming	E	gross domestic product
3.2.6	Home market	F	vegetable garden
3.2.7	Large-scale farming	G	manufacturing
3.2.8	Infrastructure	H	international trade
		I	sugar cane plantation

(8 x 1) (8)

- 3.3 Read the article about urbanisation in FIGURE 3.3 and then answer the questions that follow.
- 3.3.1 Define the term *urbanisation*. (1 x 1) (1)
- 3.3.2 Name the percentage of the people living in urban areas in South Africa. (1 x 1) (1)
- 3.3.3 What are the causes of urbanisation in South Africa? (2 x 1) (2)
- 3.3.4 Name FOUR problems associated with urbanisation. (4 x 1) (4)
- 3.3.5 Refer to the 'bad' buildings in the article.
- (a) Discuss TWO causes of 'bad' buildings. (2 x 2) (4)
- (b) Suggest TWO possible solutions to the problem of 'bad' buildings. (2 x 2) (4)
- 3.4 FIGURE 3.4 is an article from the *International Business Times* about informal dwellings (housing). Read the article and answer the questions that follow.
- 3.4.1 Define the term *informal settlement*. (1 x 1) (1)
- 3.4.2 Describe the trend associated with informal settlements in South Africa by quoting figures from the article. (1 x 2) (2)
- 3.4.3 Why are there more informal settlements in mining and industrial hubs? (1 x 1) (1)
- 3.4.4 Why are these settlements seen as an eyesore (not nice to look at) for the landscape? (1 x 2) (2)
- 3.4.5 In a paragraph of approximately EIGHT lines, explain the social problems and vulnerability of people living in informal settlements. (4 x 2) (8)
- 3.5 FIGURE 3.5 is a bar graph that compares South Africa's imports and exports of agricultural products from 2008 to 2013, with an accompanying statement.
- 3.5.1 Indicate whether South Africa imported or exported more of its agricultural products in 2008/2009. (1 x 1) (1)
- 3.5.2 Indicate the general trend of imports/exports from 2009/2010 to 2012/2013. (1 x 1) (1)
- 3.5.3 Which agricultural product earned the greatest income for South Africa in 2012/2013? (1 x 1) (1)

- 3.5.4 South Africa could earn more money by exporting the agricultural product in QUESTION 3.5.3 in a processed form. Explain why this is the case. (1 x 2) (2)
- 3.5.5 Explain TWO factors related to trade that have encouraged people to buy South African agricultural products. (2 x 2) (4)
- 3.5.6 Discuss the importance of agriculture to the South African economy. (3 x 2) (6)
- 3.6 Informal trade is a common feature in developing countries.
- 3.6.1 Define the term *informal sector*. (1 x 1) (1)
- 3.6.2 State the relationship between the unemployment rate and the percentage of people working in the informal sector. (1 x 2) (2)
- 3.6.3 Why is informal trade common in developing countries? (1 x 2) (2)
- 3.6.4 How would formalising businesses impact positively on the economy? (1 x 2) (2)
- 3.6.5 Write a paragraph of approximately EIGHT lines in which you suggest ways in which informal traders can be empowered to make a meaningful contribution to the South African economy. (4 x 2) (8)
- [75]**

QUESTION 4

- 4.1 Give ONE word/term for each of the following descriptions. Write only the word/term next to the question number (4.1.1–4.1.8) in the ANSWER BOOK.
- 4.1.1 A group of people, buildings, infrastructure and communication links that function together as a single, integrated system
- 4.1.2 The position of a settlement in relation to its surrounding environment
- 4.1.3 The piece of land on which a settlement is built
- 4.1.4 This settlement is found in an area where water is scarce and people live close to the water supply
- 4.1.5 A name given to a city with dependent towns surrounding it
- 4.1.6 A settlement that develops close to an opening through a physical barrier
- 4.1.7 The point where one mode of transport is replaced by another
- 4.1.8 A town that develops where there is a bridge across a river (8 x 1) (8)

- 4.2 Choose the correct word(s) from those given in brackets. Write only the word(s) next to the question number (4.2.1–4.2.7) in the ANSWER BOOK, for example 4.2.8 tertiary.
- 4.2.1 A (large-scale/small-scale) farmer has a small, but economically viable piece of land which is profitably and intensively farmed.
- 4.2.2 The lack of access to food and water, which could lead to chronic starvation and related diseases, is known as (food security/food insecurity).
- 4.2.3 When a government takes over the ownership and operations of the mines, it is called (privatisation/nationalisation).
- 4.2.4 The processing of raw materials into manufactured products is known as the (primary/secondary) sector.
- 4.2.5 An industry that develops when raw materials are evenly distributed and have no influence on the location of the industry is called a/an (bridge/ubiquitous) industry.
- 4.2.6 (Centralisation/Decentralisation) is the clustering of industries in one area.
- 4.2.7 (Bridge/Ubiquitous) industries are located between the source of the raw material and the customer. (7 x 1) (7)
- 4.3 FIGURE 4.3 shows the sphere of influence and range of food stores and motor vehicle retailers in settlements **A** and **B**.
- 4.3.1 Define the terms *sphere of influence* and *range*. (2 x 1) (2)
- 4.3.2 Which product, food or cars, has a larger range? (1 x 1) (1)
- 4.3.3 Give a reason for your answer to QUESTION 4.3.2. (1 x 2) (2)
- 4.3.4 Comment on the threshold population required for motor vehicle sales. (1 x 2) (2)
- 4.3.5 Describe TWO characteristics of settlement **A**, which is a low-order centre. (2 x 2) (4)
- 4.3.6 Explain what influences the sphere of influence of a settlement such as **B**. (2 x 2) (4)

- 4.4 FIGURE 4.4 shows a simplified model and land-use zones of a city in South Africa.
- 4.4.1 Name land-use zone **A**. (1 x 1) (1)
- 4.4.2 Give a possible reason why the transition zone (**B**) doesn't fully enclose zone **A**. (1 x 2) (2)
- 4.4.3 Why is land-use zone **D** likely to be a low-income residential area? (1 x 2) (2)
- 4.4.4 State ONE factor that would have promoted the location of shopping centre **C**. (1 x 2) (2)
- 4.4.5 Write a paragraph of approximately EIGHT lines in which you discuss the negative factors in land-use zone **A** that resulted in the relocation of businesses to **C** and its surrounding area. (4 x 2) (8)
- 4.5 Read the extract in FIGURE 4.5 on coal mining in South Africa.
- 4.5.1 Name the province in which most of South Africa's coalfields are found. (1 x 1) (1)
- 4.5.2 Name TWO of South Africa's major industries that are dependent on coal as a raw material. (2 x 1) (2)
- 4.5.3 State TWO environmental problems resulting from coal mining in South Africa. (2 x 2) (4)
- 4.5.4 Mining and coal-dependent companies should work together to rectify environmental injustices associated with coal mining. In a paragraph of about EIGHT lines, explain how this can be achieved. (4 x 2) (8)
- 4.6 Study FIGURE 4.6, which provides information about the Coega Industrial Development Zone (IDZ) in South Africa.
- 4.6.1 In which province in South Africa is Coega located? (1 x 1) (1)
- 4.6.2 Coega is the largest industrial development zone in South Africa. What is its size? (1 x 1) (1)
- 4.6.3 Name the deep-water port at Coega. (1 x 1) (1)
- 4.6.4 Give ONE reason for this port being so significant. (1 x 2) (2)
- 4.6.5 Explain why power supply would not be a problem in this area. (2 x 2) (4)
- 4.6.6 Discuss THREE factors that were taken into consideration in determining the location of the Coega IDZ. (3 x 2) (6)
- TOTAL: 225**
[75]



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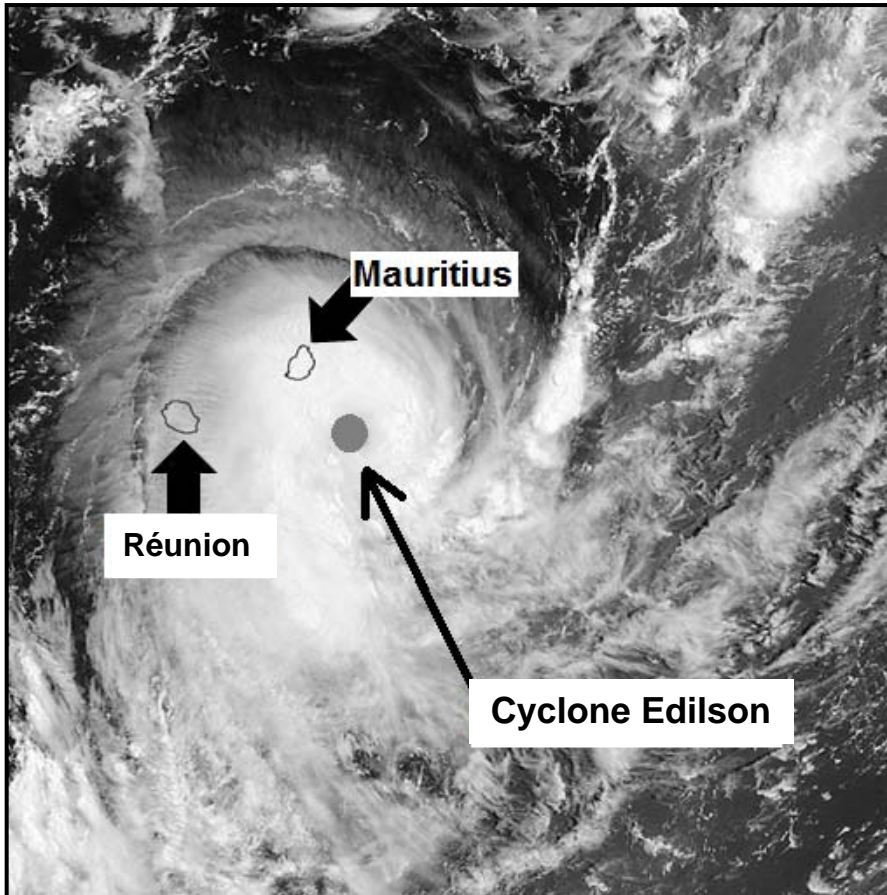
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GRADE 12

**GEOGRAPHY P1
FEBRUARY/MARCH 2016
ANNEXURE**

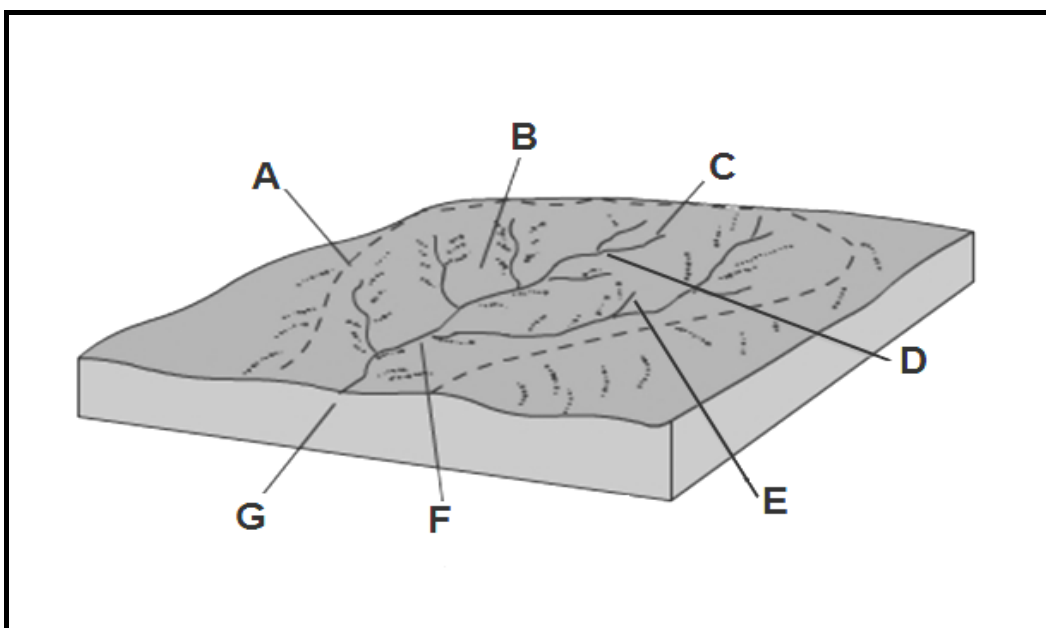
This annexure consists of 11 pages.

FIGURE 1.1: SATELLITE IMAGE OF A TROPICAL STORM



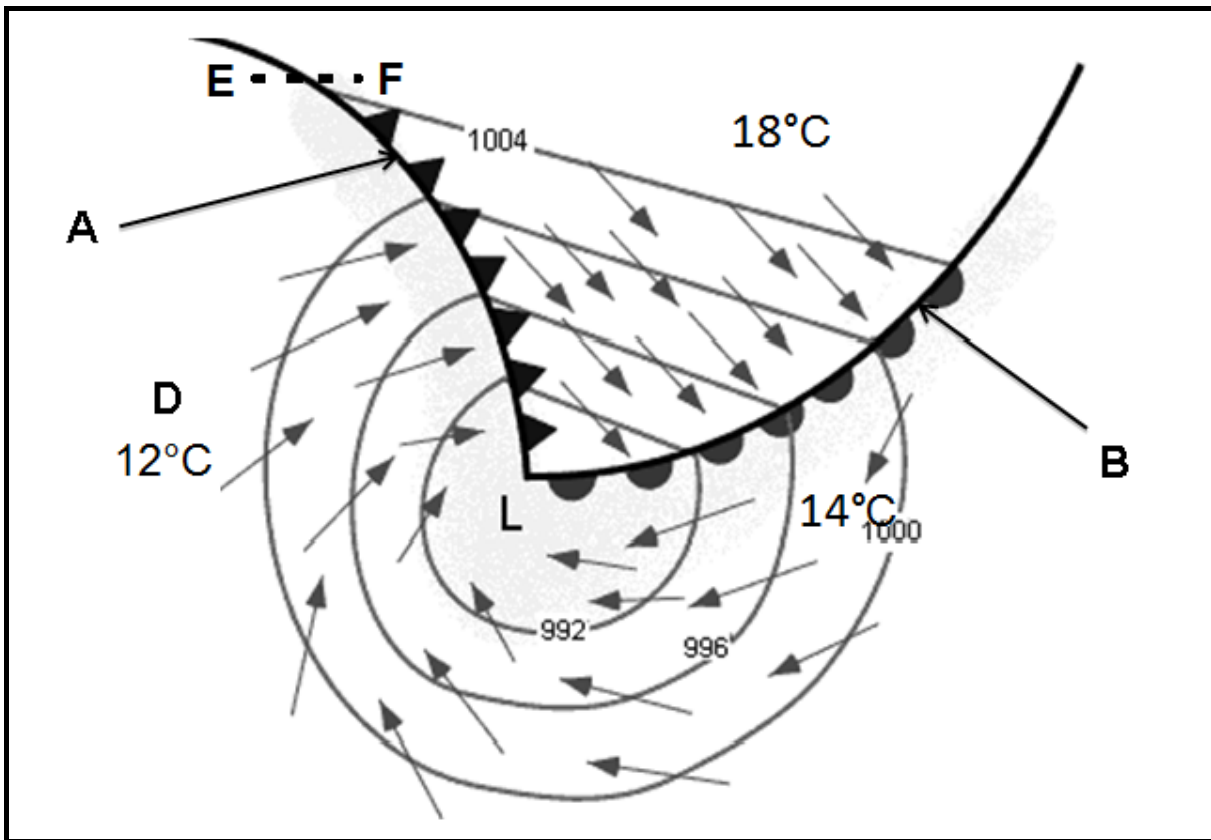
[Adapted from <http://www.weatherphotos.co.za>]

FIGURE 1.2: DRAINAGE BASIN



[Adapted from http://www.earthonlinemedia.com/ebooks/tpe_3e/fluvial_systems/drainage_basin.jpg]

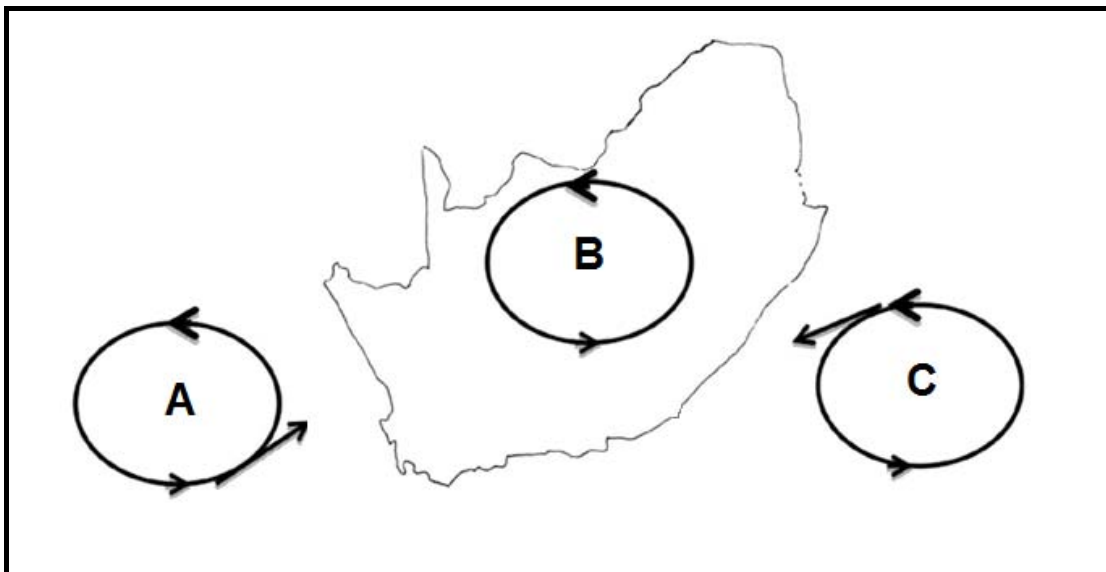
FIGURE 1.3: MID-LATITUDE CYCLONE



[Source:

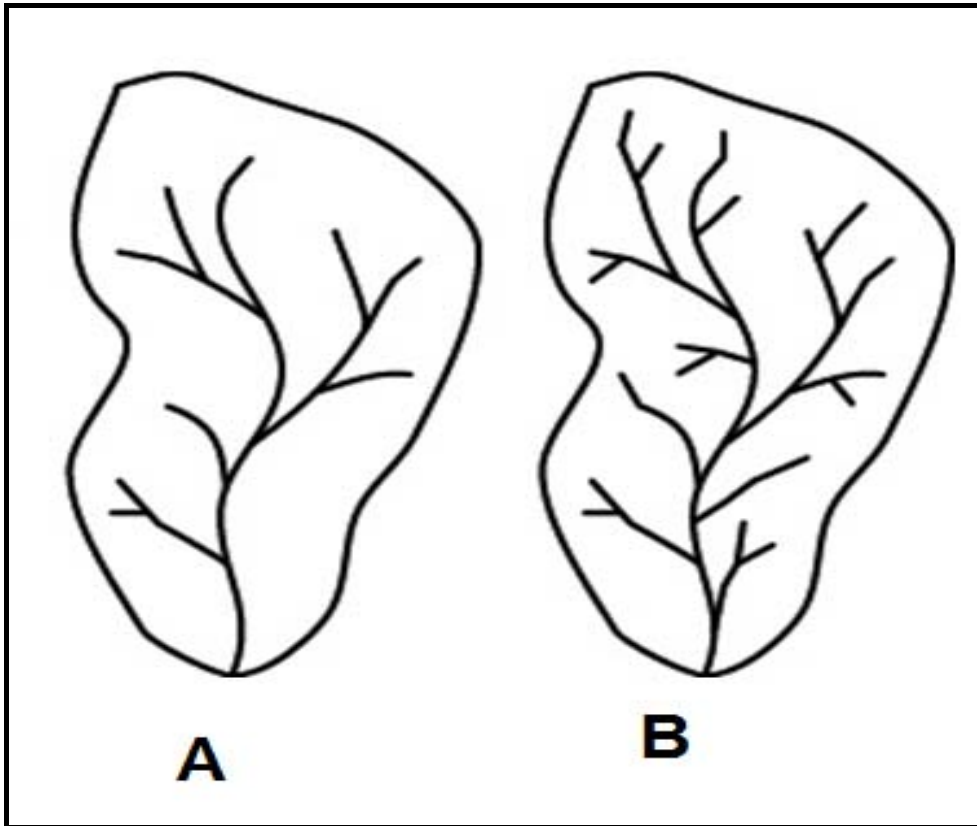
http://2.bp.blogspot.com/_LJZ5ArmANJQ/TTKJznLzb8I/AAAAAAAAABfk/01Qxc62I6mQ/s1600/shem]

FIGURE 1.4: ANTICYCLONES OVER SOUTH AFRICA



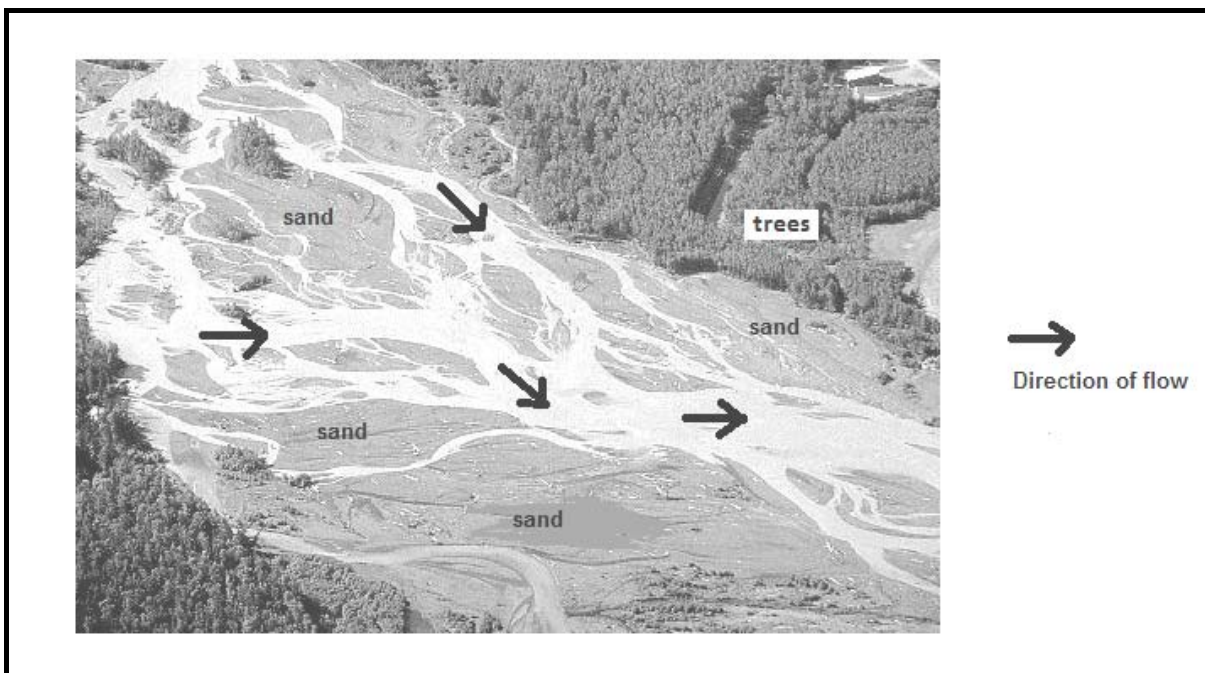
[Source: Examiner's own sketch]

FIGURE 1.5: DRAINAGE DENSITY



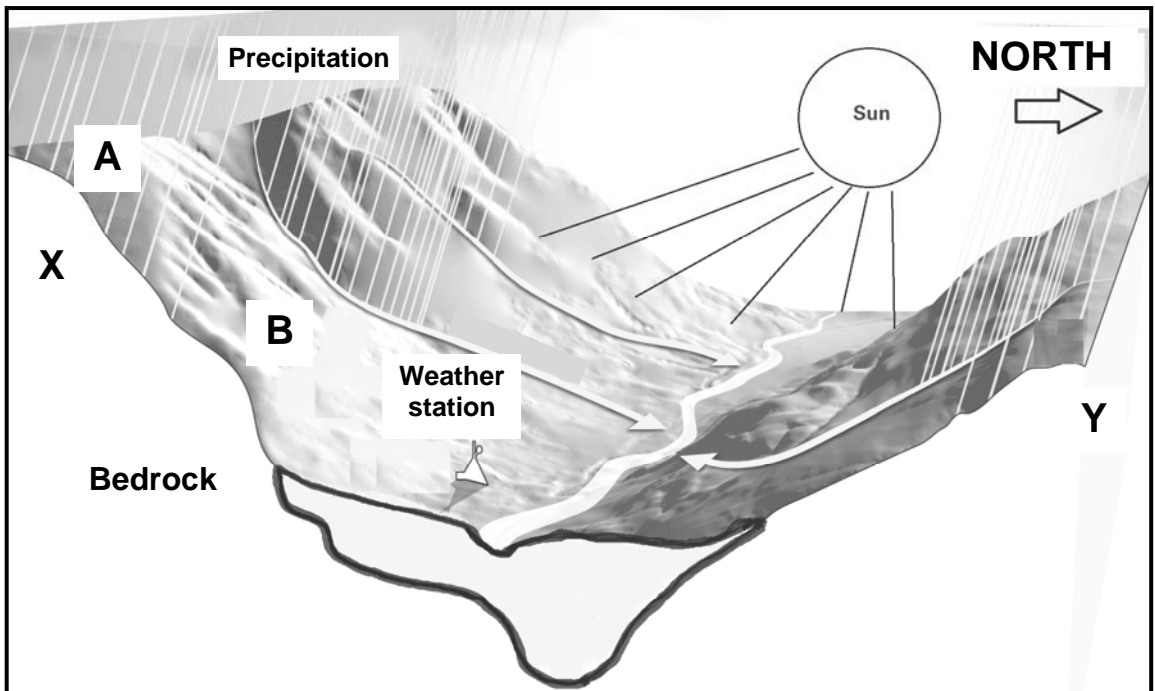
[Adapted from <http://gis4geomorphology.com/wp-content/uploads/2014/03/threshold.jpg>]

FIGURE 1.6: RIVER CHANNEL PATTERN



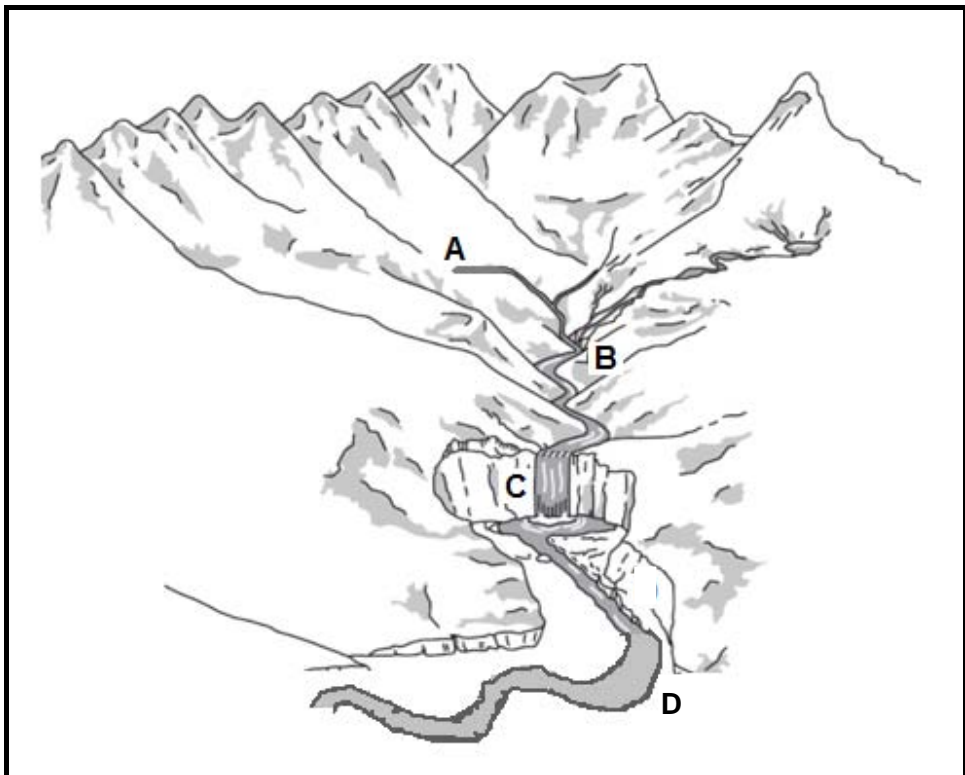
[Adapted from http://www.geologyclass.org/Stream%20Concepts_files/image002.jpg]

FIGURE 2.1: ASPECT



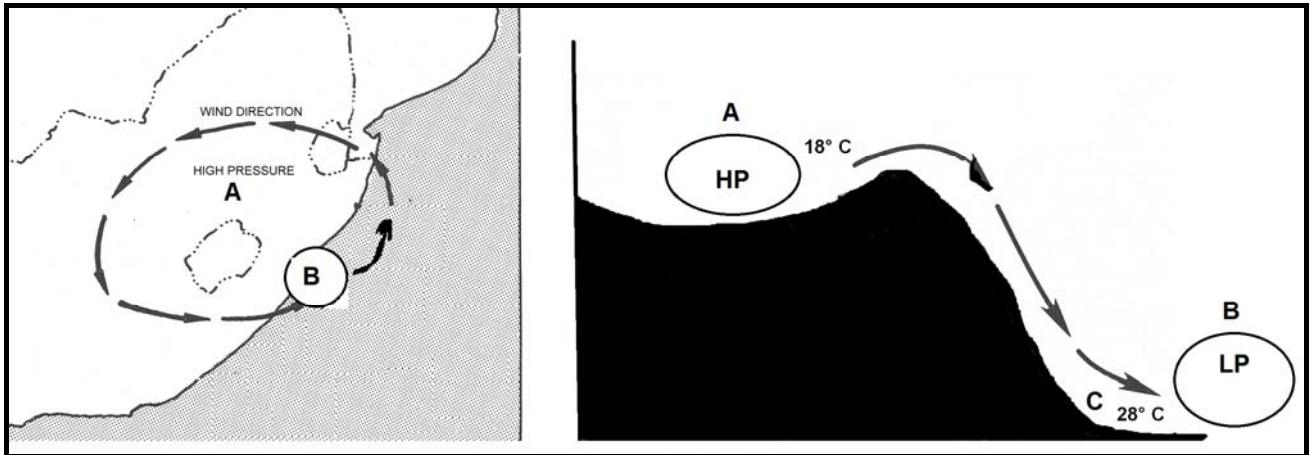
[Adapted from www.valleyclimates.com]

FIGURE 2.2: RIVER COURSE



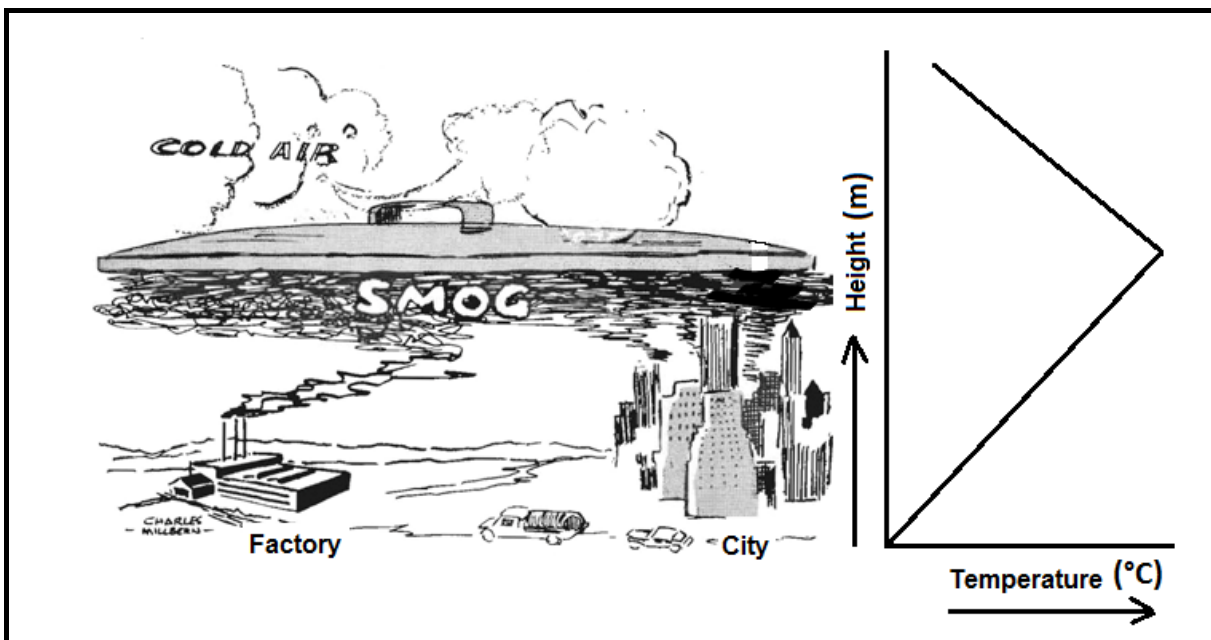
[Adapted from Teacherzpet.co.uk]

FIGURE 2.3: BERG WINDS



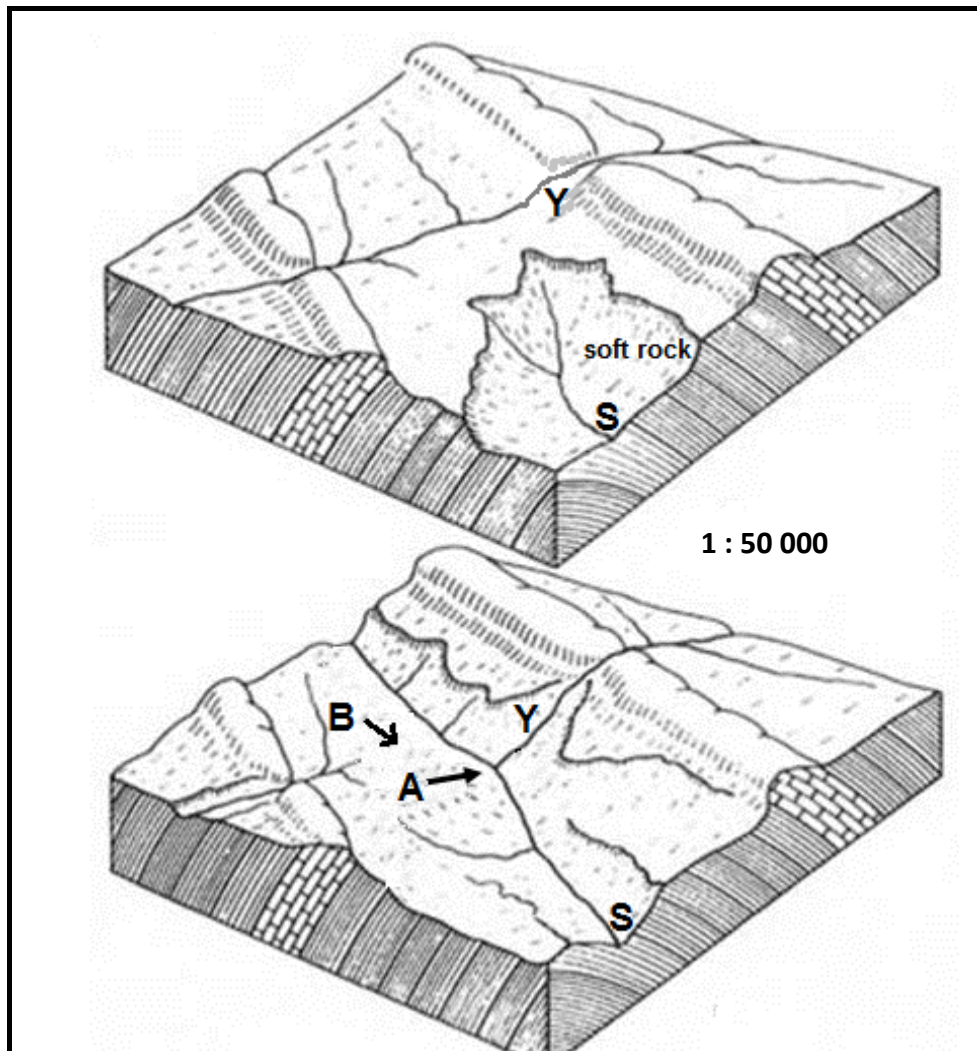
[Adapted from *Successful Geography*]

FIGURE 2.4: TEMPERATURE INVERSION



[Adapted from www.emporia.edu]

FIGURE 2.5: RIVER CAPTURE



[Adapted from www.usgeologicalsurvey.com]

FIGURE 2.6: MANAGING CATCHMENT AREAS AND DRAINAGE BASINS

South Africa needs to balance the demand for water with the availability of water. There are a number of ways in which to prevent the overexploitation of water resources:

1. Removing alien vegetation
2. Interbasin transfer schemes
3. Managing groundwater supplies
4. Recycling water
5. Conserving wetlands
6. Preserving vegetation cover

[Adapted from www.dwaf.gov.za]

FIGURE 3.1: A SETTLEMENT

[Source: <http://www.heneb.co.uk/images/12llangowerv2cropshort6461.jpg>]

FIGURE 3.3: URBANISATION**URBANISATION: LOW-COST HOUSING NOT LOW-COST ENOUGH**

11 APRIL 2014, LAUREN ROYSTON, MICHAEL CLARK

There is still no formal plan to cover the need for cheaper inner-city accommodation. Approximately 60% of the South African population currently lives in urban areas. This figure will increase as a result of natural population growth and the further migration of people to cities in search of economic opportunities.

In many African countries, including South Africa, the standard government response to poverty associated with urbanisation (where people live in backyard shacks, informal settlements and 'bad' buildings) has been to focus on improving standards of living in rural areas in order to prevent rural-urban migration, and to criminalise poverty in urban areas by evicting people from their shacks and clamping down on informal livelihoods.

[Adapted from <http://mq.co.za/article/2014-04-10-low-cost-housing-not-low-cost-enough>]

FIGURE 3.4: INFORMAL SETTLEMENTS

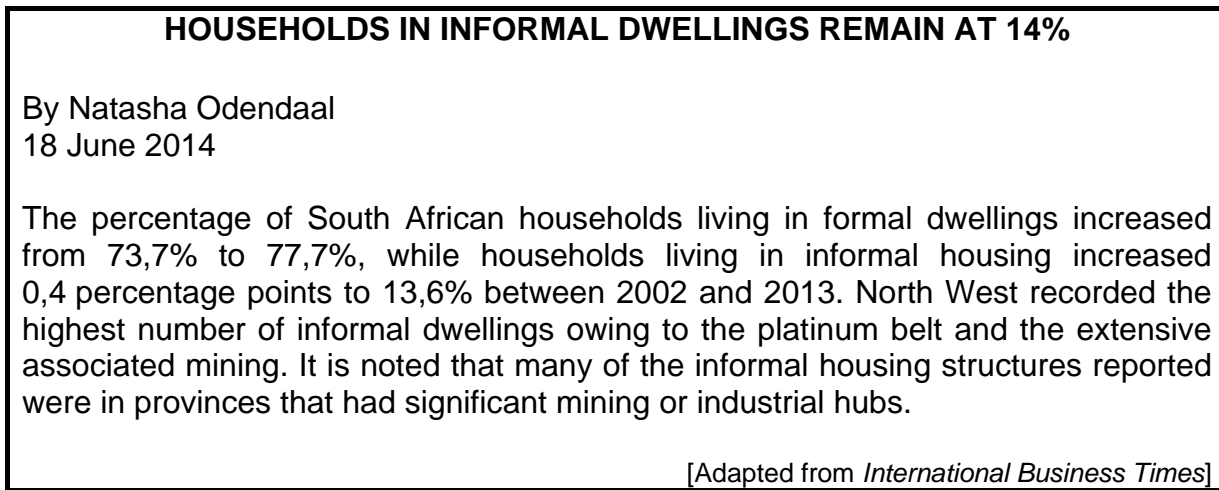


FIGURE 3.5: AGRICULTURAL PRODUCTS

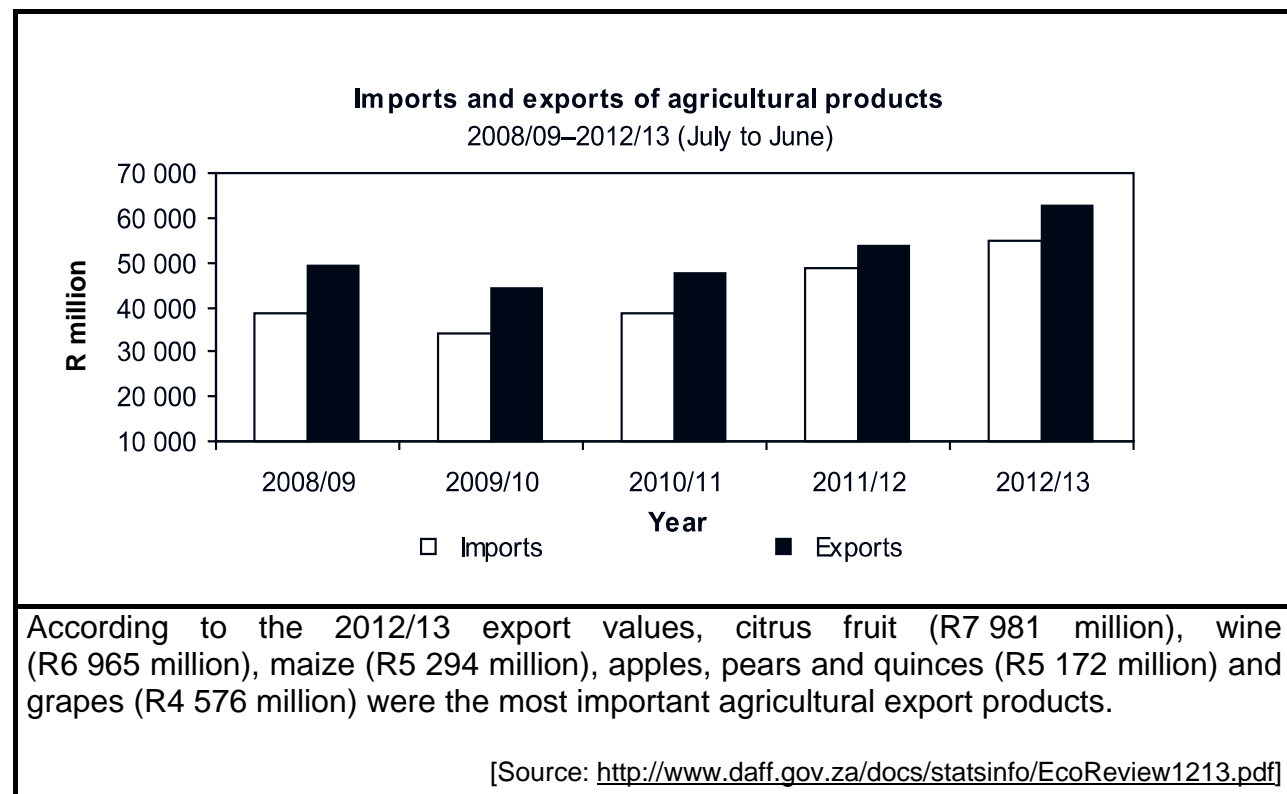
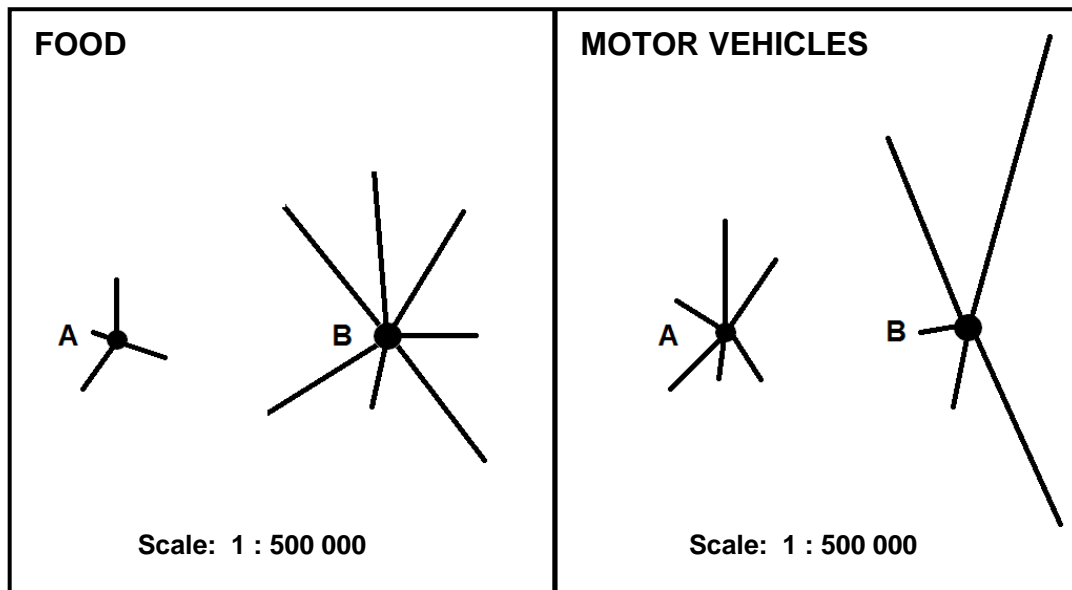
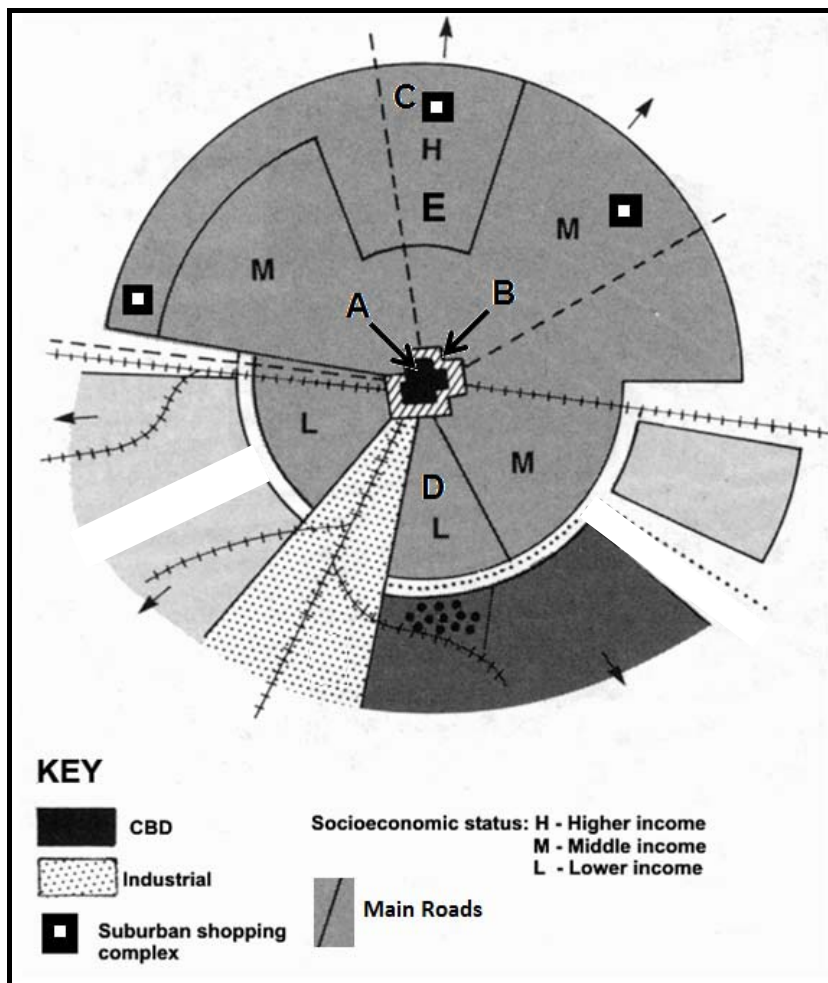


FIGURE 4.3: SPHERE OF INFLUENCE AND RANGE



[Source: Examiner's own sketch]

FIGURE 4.4: LAND-USE ZONES IN A SOUTH AFRICAN CITY



[Adapted from

<http://people.uwec.edu/ivogeler/Travel/Southern%20Africa/aparth3.gif>]

FIGURE 4.5: MINING

COAL MINING IN SOUTH AFRICA

Coal mining in South Africa plays a significant role in the country's economy, as it is responsible for nearly three quarters of Eskom's fuel supply. It also supplies coal to SASOL, who produces around 35% of the country's liquid fuel.

Coal mining in South Africa is centred on the Highveld, with roughly 60% of the country's deposits located in eMalahleni (Witbank) and surrounding areas.

[Source: <http://www.projectsiaq.co.za/coal-mining-in-south-africa.htm>]

FIGURE 4.6: COEGA INDUSTRIAL DEVELOPMENT ZONE

COEGA INDUSTRIAL DEVELOPMENT ZONE AND DEEP WATER PORT

OPERATING SA'S FIRST & LEADING INDUSTRIAL DEVELOPMENT ZONE - NELSON MANDELA BAY

Since 1999

The Coega Development Corporation (CDC) is a state-owned entity formed in 1999 and mandated to develop and operate the Coega Industrial Development Zone (IDZ), located adjacent to the modern deep water port facility, Port of Ngqura, in Nelson Mandela Bay in the Eastern Cape. Coega's vision is to be the leading catalyst for socio-economic growth.

FAST FACTS

- **BIGGEST IDZ IN SA AT 11 500HA**
- **14 ZONES BUILT ALONG CLUSTER MODEL**
- **51000 JOBS CREATED SINCE INCEPTION IN 1999**
- **67945 PEOPLE TRAINED**

- **6443HA OF PRIME LETTABLE INDUSTRIAL SPACE**
- **WITHIN 15 MINUTES OF ROAD, RAIL, AIR & SEA**
- **20 MINUTE DRIVE TO PE CBD**
- **AUTO, RENEWABLES, AGRO-PROCESSING HUB**
- **30 MINUTE DRIVE TO BIGGEST WIND ENERGY GENERATING FARM**

- **23 OPERATIONAL INVESTORS**
- **ACCESS TO 3 PORTS (PE, NGQURA, EAST LONDON)**
- **HUGE LOGISTICS ZONE CONNECTED SEAMLESSLY WITH PORT**
- **DIRECT LINKAGE WITH DEEP WATER PORT OF NGQURA**
- **NEIGHBOURS WITH FASTEST GROWING PORT IN SOUTH AFRICA**

[Adapted from <http://www.coega.co.za/NewsArticle.aspx?objID=106&id=365>]