basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS

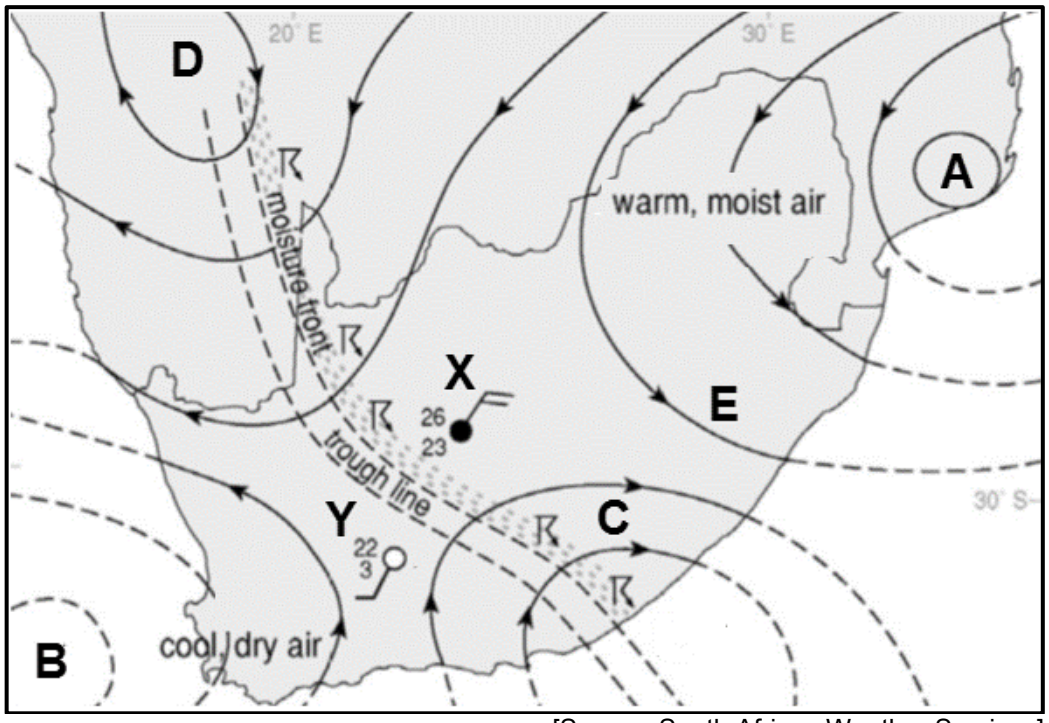
GEOGRAPHY P1

2017

ANNEXURE

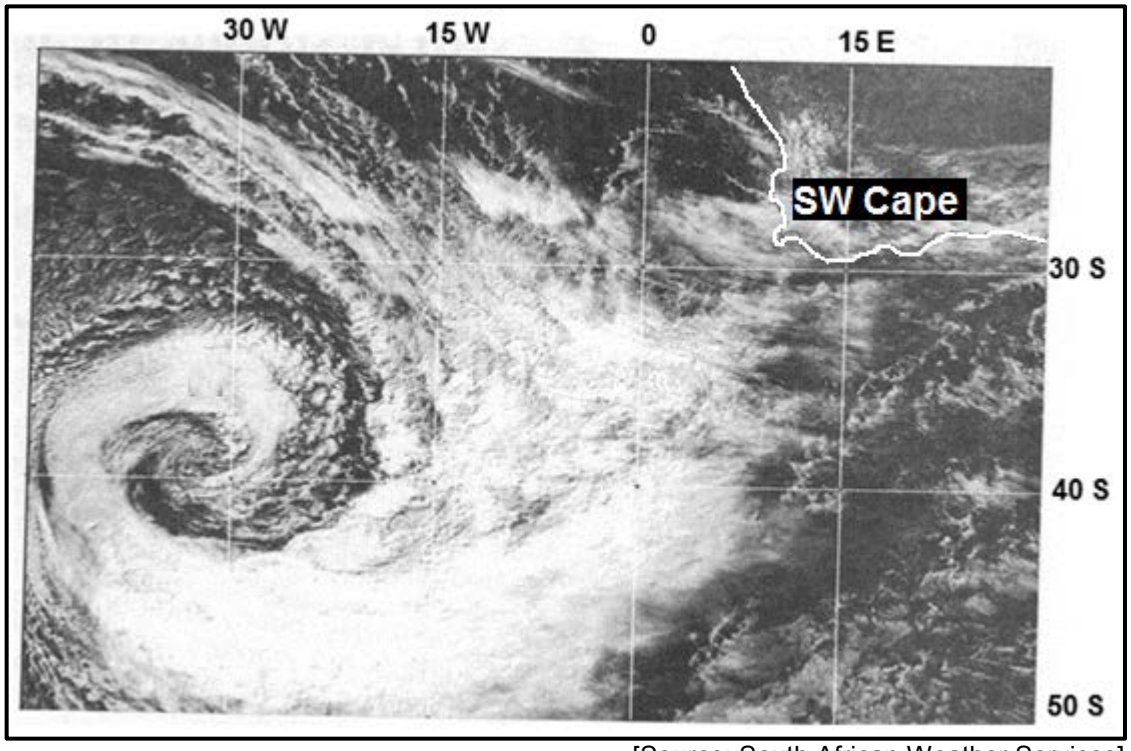
This annexure consists of 11 pages.

FIGURE 1.1: SYNOPTIC WEATHER MAP



[Source: South African Weather Services]

FIGURE 1.3: SATELLITE IMAGE



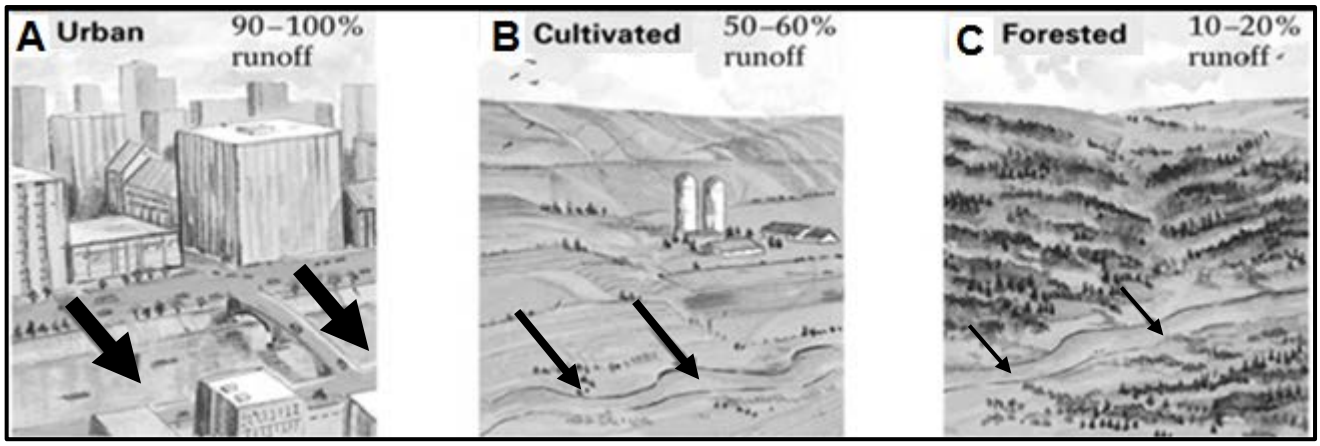
[Source: South African Weather Services]

FIGURE 1.4: AVERAGE AIR TEMPERATURE DISTRIBUTION IN THE JOHANNESBURG CBD

- **Average temperature of buildings between 12:00 and 14:00 for buildings A, B, C and D = 25,9 °C**
- **Average air temperature recorded between 12:00 and 14:00 = 25,5 °C**

[Source: joburgeastexpress.co.za]

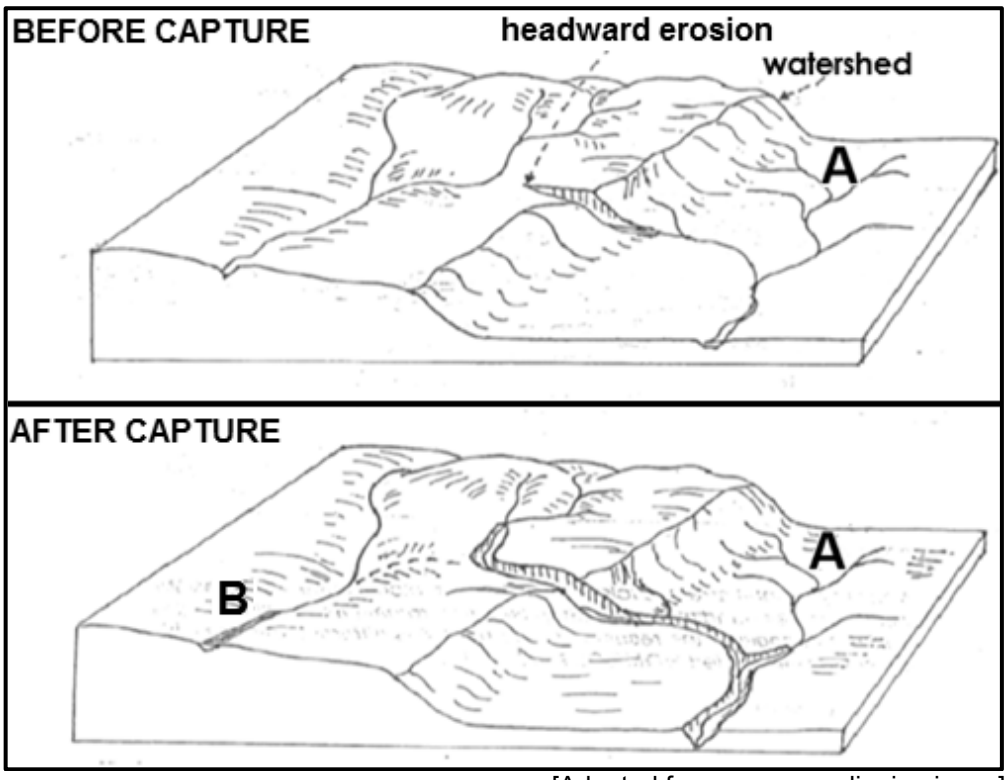
FIGURE 1.5: SURFACE RUN-OFF PATTERNS



Run-off **The thickness of the arrow refers to the volume of water**

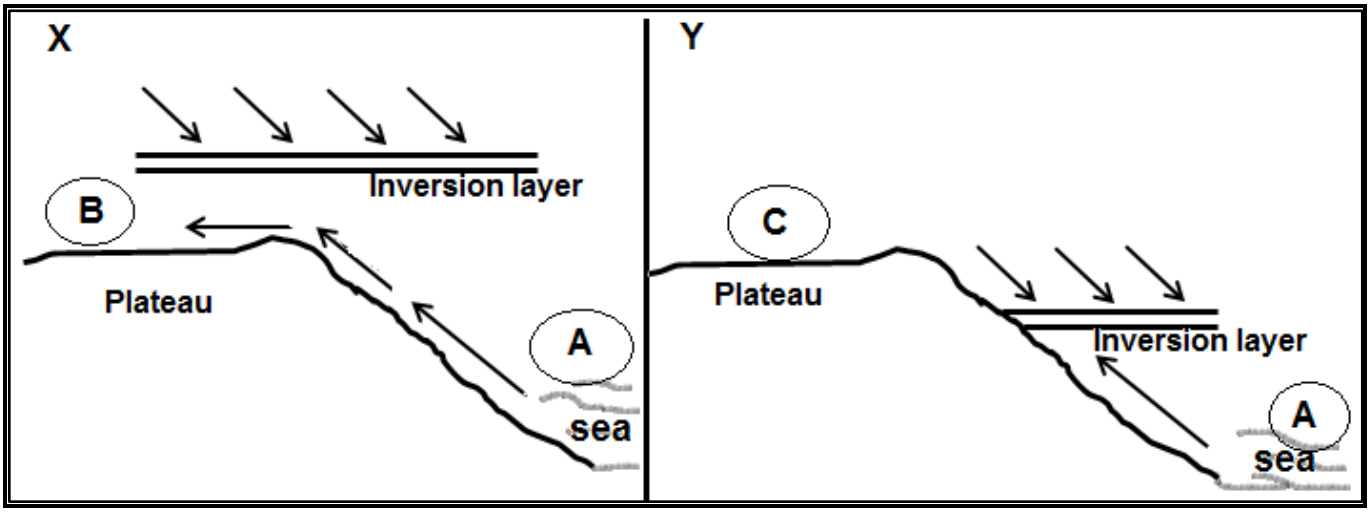
[Adapted from *McKnight's Physical Geography: A Landscape Appreciation*, 10th edition]

FIGURE 1.6: RIVER CAPTURE



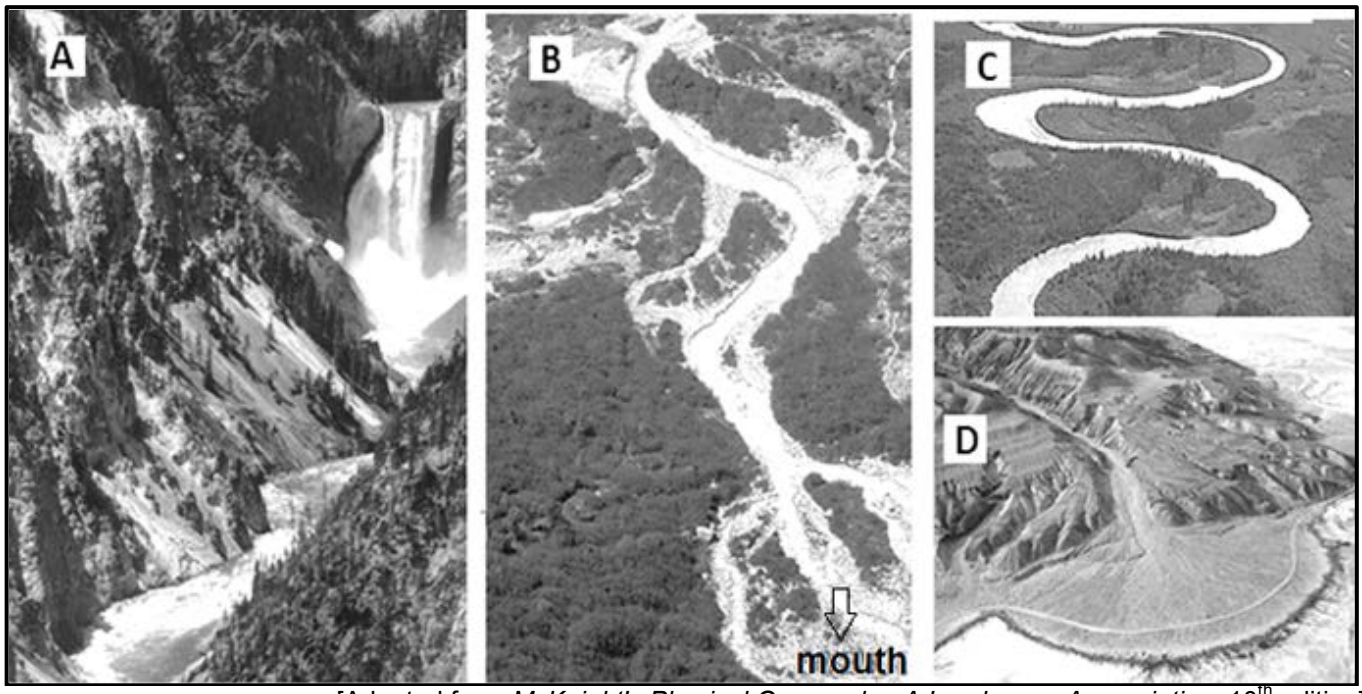
[Adapted from ecorsesonlineiasri.com]

FIGURE 2.1: THE INFLUENCE OF THE PLATEAU ON THE WEATHER AND CLIMATE OF SOUTH AFRICA



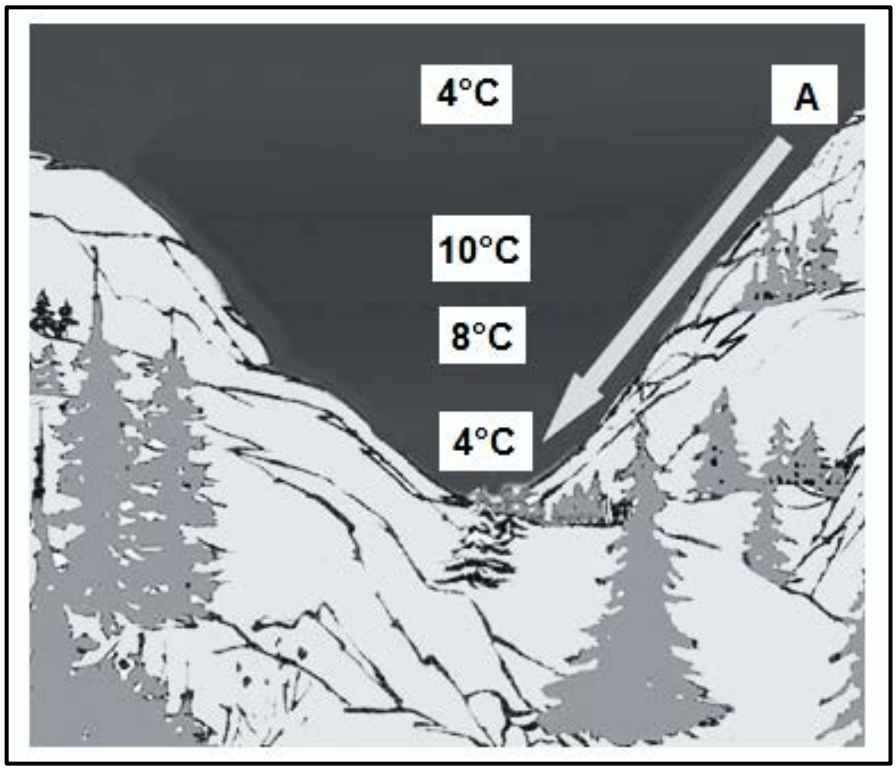
[Source: Examiner's own sketch]

FIGURE 2.2: FLUVIAL FEATURES



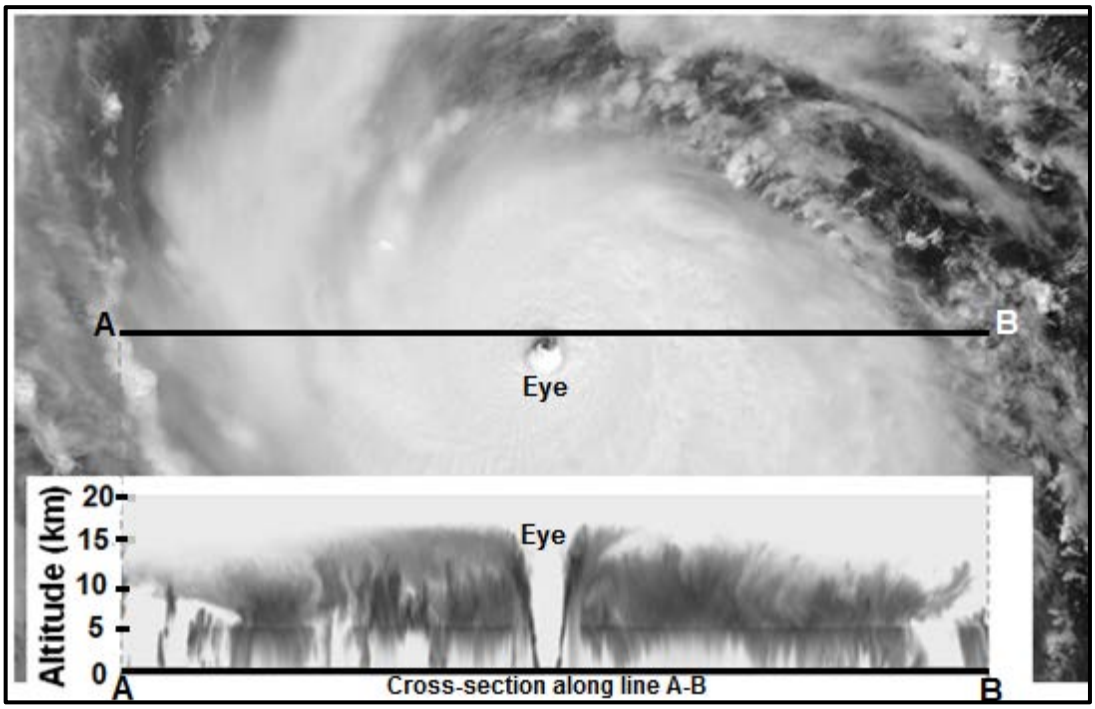
[Adapted from *McKnight's Physical Geography: A Landscape Appreciation*, 10th edition]

FIGURE 2.3: SLOPE WINDS



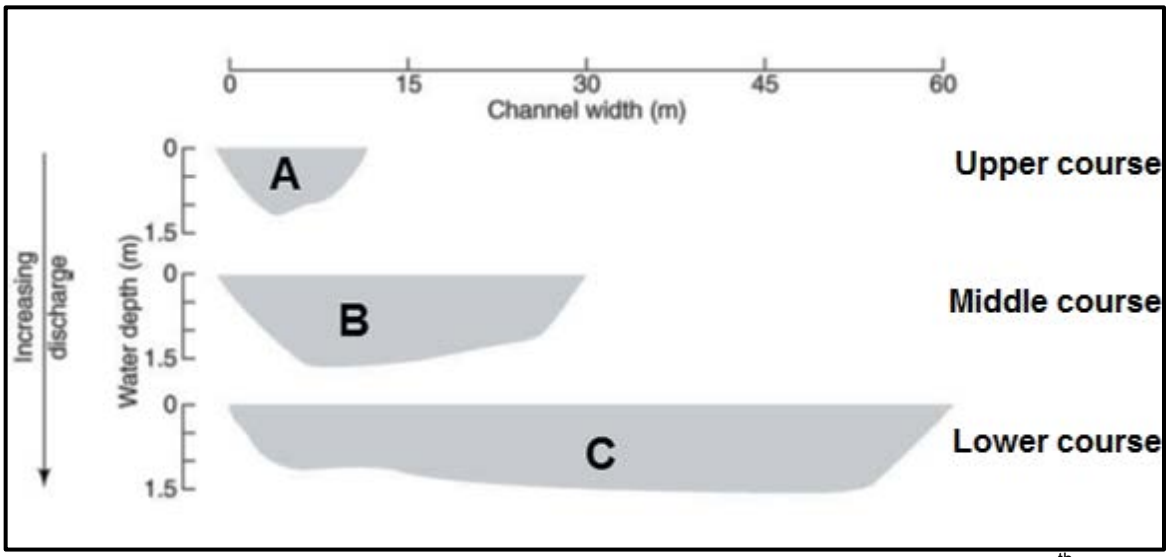
[Adapted from islandnet.com]

FIGURE 2.4: HURRICANES



[Source: http://earthobservatory.nasa.gov/Features/Gallery/cloudsat.php?all=y]

FIGURE 2.5: STREAM DISCHARGE



[Adapted from *McKnight's Physical Geography: A Landscape Appreciation*, 10th edition]

FIGURE 2.6: CATCHMENT AND RIVER MANAGEMENT

CASE STUDY ON CATCHMENT AND RIVER MANAGEMENT: WORKING FOR WETLANDS

Covering many South African river basins, the Working for Wetlands programme operates in all major catchments.

Half the wetlands lost

65% of South Africa receives less than 500 mm average annual rainfall, meaning that drought is an ever-present risk.

Future projections indicate that by 2025 the country's water requirements will outstrip supply, unless urgent steps are taken to manage the resource more sustainably.

There are already major problems of supply and quality, with an estimated 8 million South Africans currently having no access to drinkable water.

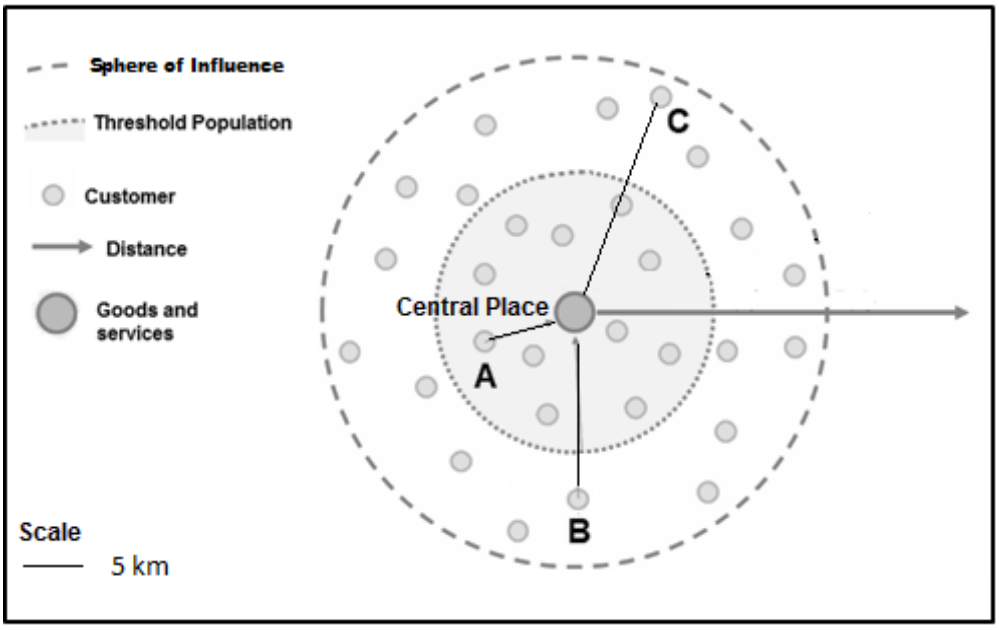
It is against this background that the South African government, working in partnership with WWF and others, has initiated catchment management programmes. These include the control of water-thirsty alien plant infestations and wetland restoration across the country.

[Source: http://wwf.panda.org/about_our_earth/about_freshwater/rivers/irbm/cases/southafrica_river_case_study_cfm/]

FIGURE 3.3: 1913 NATIVES LAND ACT

[Source: zapiro.com]

FIGURE 3.4: A CENTRAL PLACE AND ITS SURROUNDING CUSTOMERS



[Adapted from www.settlementgeography.com]

FIGURE 3.5: SMALL-SCALE FARMING

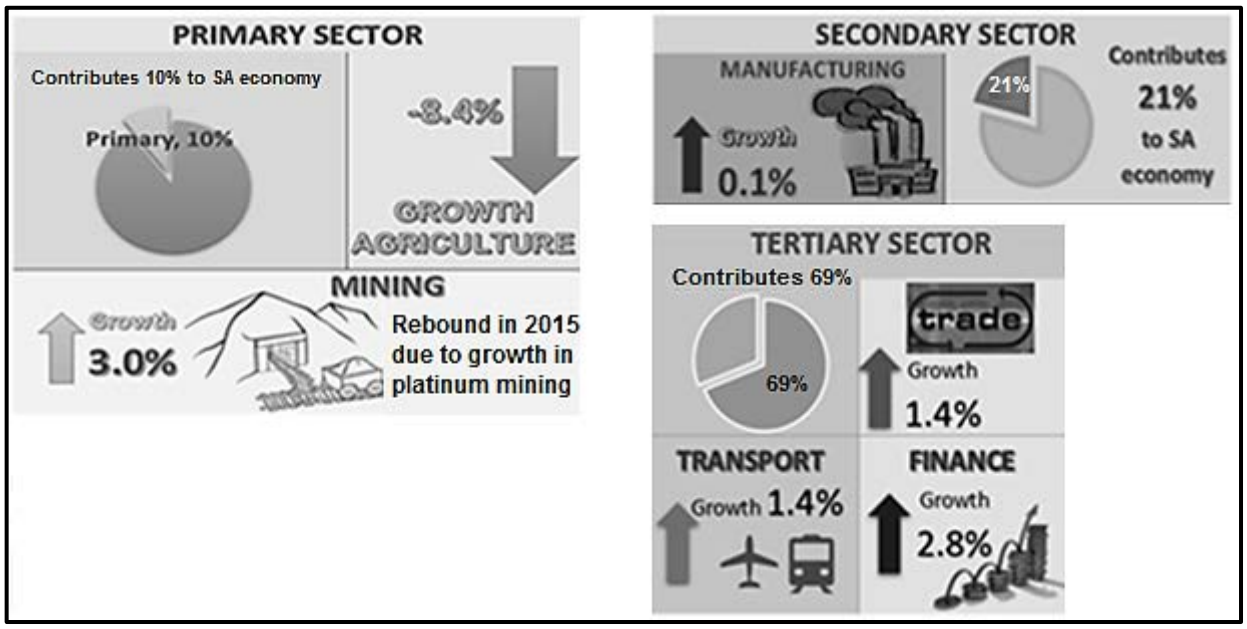
[Source: *Sunday Times*]

FIGURE 3.6: DURBAN-PINETOWN INDUSTRIAL REGION

The Durban-Pinetown Industrial Region is the hub of industrial development along the coast of KwaZulu-Natal. Eight new industrial areas have been developed within this industrial region. One of these industrial areas, Cornubia Industrial Park, will generate 36 000 new job opportunities according to the developers. An additional 370 000 short-term construction jobs will also be created in the Cornubia Industrial Park.

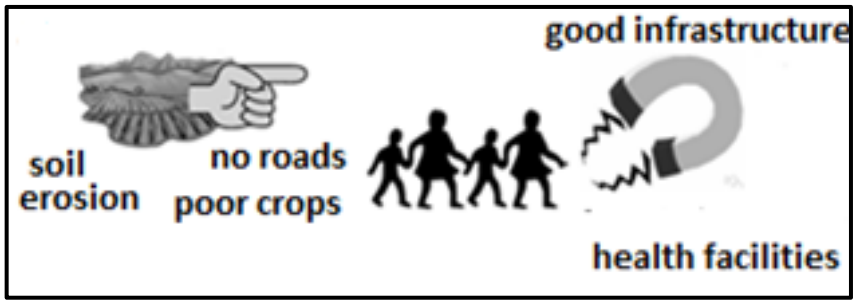
[Adapted from Wikimedia.org]

FIGURE 4.2: ECONOMIC GEOGRAPHY



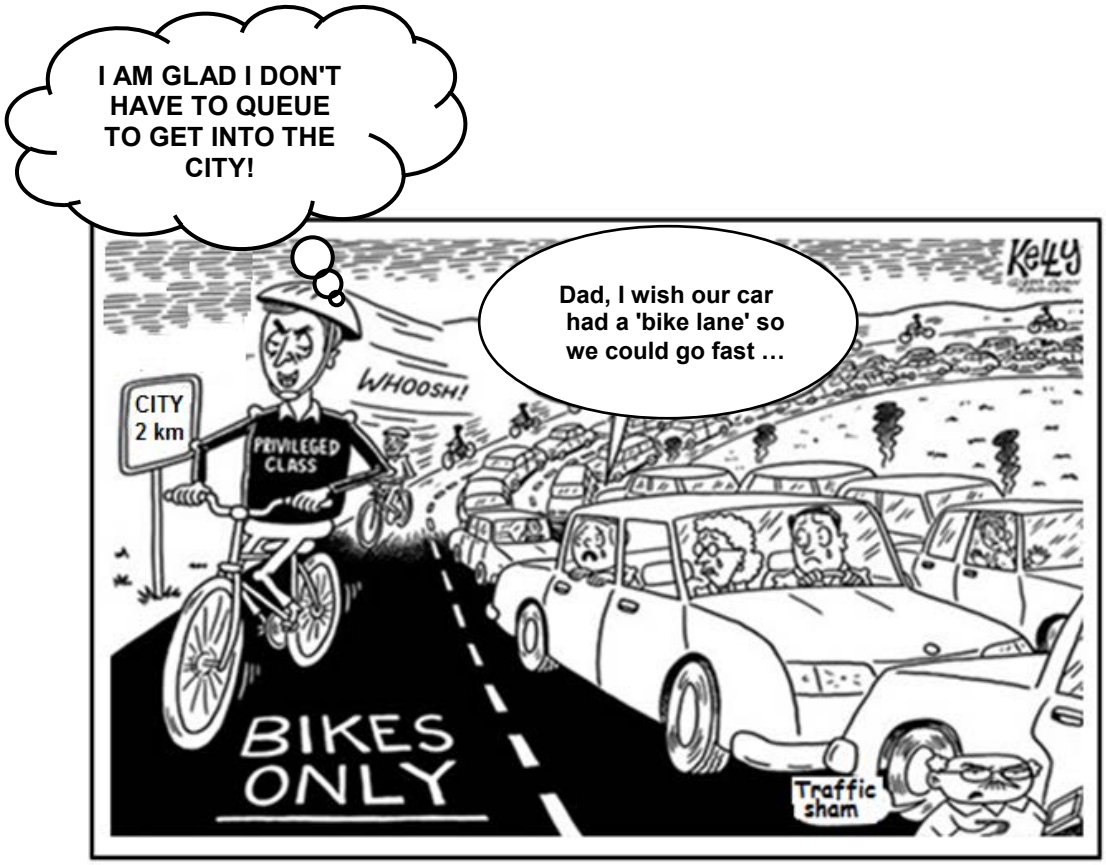
[Source: Examiner's infographic]

FIGURE 4.3: RURAL-URBAN MIGRATION



[Source: Examiner's infographic]

FIGURE 4.4: AN URBAN PROBLEM



[Adapted from streetsblog.org]

FIGURE 4.5: MAPUTO DEVELOPMENT CORRIDOR

The Maputo Corridor is a transport corridor linking the east coast port of Maputo in Mozambique with the highly industrialised and productive regions of Gauteng in South Africa. The key elements of this transport corridor are the N4 toll road, the rail corridor, the Lebombo/Ressano Garcia border post and the port and terminal facilities at the Port of Maputo.

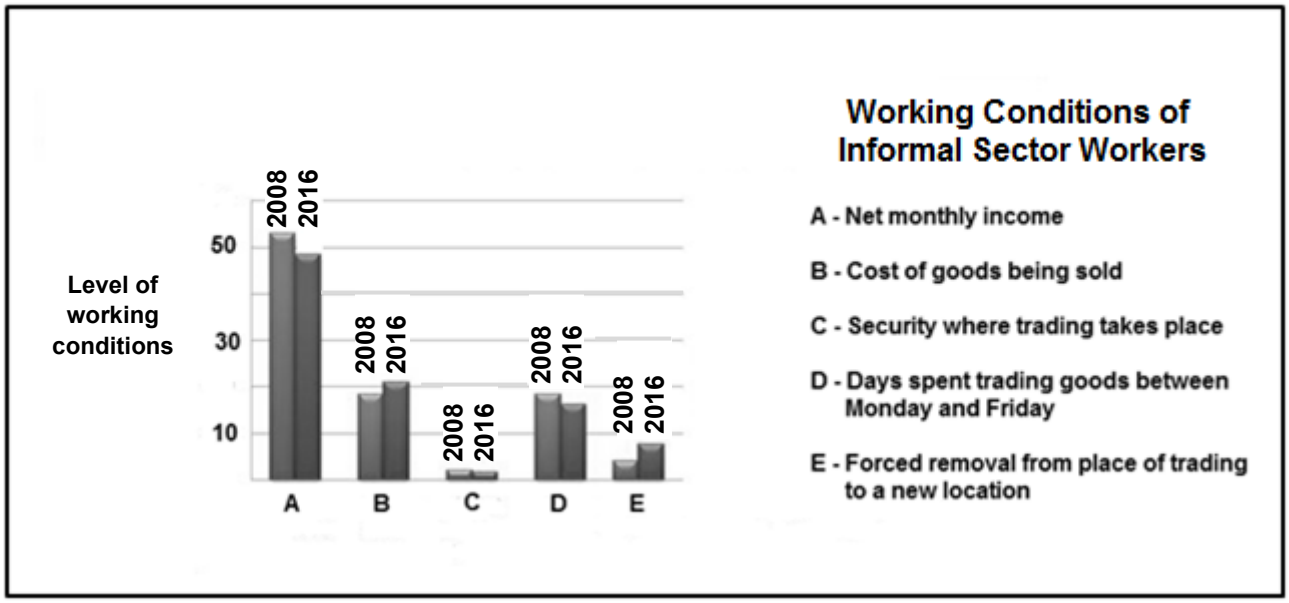
Short by African corridor standards, the Maputo Corridor is only 590 km by road between Maputo and Johannesburg, and 581 km by rail. It is increasingly strategic because it presents the shortest route to a port for South African exporters on the corridor.

The Port of Maputo provides the shortest access to the Indian and Far Eastern markets and it supports the South African regional port hubs in a multipurpose port of 15 terminals. It is an extremely busy trade corridor, despite its short distance.

Trade between South Africa and Mozambique totalled R25,1 billion in 2011. Annually a total of 4,6 million people, 730 000 vehicles and 87 000 trucks cross the border into Mozambique at the Lebombo/Ressano Garcia border post. Trade is largely outward bound.

[Source: Ecdpm.org.greatinsights]

FIGURE 4.6: INFORMAL SECTOR



[Source: Examiner's infographic]

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SENIOR CERTIFICATE EXAMINATIONS

GEOGRAPHY P1

2017

MARKS: 225

TIME: 3 hours

This question paper consists of 14 pages and a 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 the 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. Do NOT write in the margins of the ANSWER BOOK.
9. Draw fully labelled diagrams when instructed to do so.
10. Answer in FULL SENTENCES, except when you have to state, name, identify or list.
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 Refer to FIGURE 1.1, a synoptic weather map.

Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A–D) next to the question number (1.1.1–1.1.7) in the ANSWER BOOK, for example 1.1.8 D.

Do NOT answer these multiple-choice questions on the ANSWER SHEET provided in the ANSWER BOOK.

1.1.1 The cloud coverage at weather station **X** can be described as …

A partly cloudy.
B clear skies.
C overcast.
D not visible.

1.1.2 The weather experienced along the moisture front is generally …

A heavy rainfall.
B snowfall.
C thunderstorms.
D hail.

1.1.3 The trough line is associated with … clouds.

A cumulus
B cumulonimbus
C stratus
D altostratus

1.1.4 At **E** the warm, moist air from pressure cell **A** moves in a … direction.

A north-easterly
B north-westerly
C south-easterly
D south-westerly

1.1.5 The wind direction at weather station **X** is ...

A south-west.
B north-east.
C south-east.
D north-west.

1.1.6 The cold, dry air from pressure cell **B** is …

A ridging from the Atlantic Ocean.
B ridging from the Indian Ocean.
C undercutting pressure cell **C**.
D undercutting pressure cell **D**.

1.1.7 The shape of the trough line is determined by …

A differences at weather stations **X** and **Y**.
B the position of the South Indian High.
C the ridging of the South Atlantic High.
D uneven distribution of cold and warm air masses. (7 x 1) (7)

1.2 Choose a term from COLUMN B that matches the geomorphological description in COLUMN A. Write only the letter (A–I) next to the question number (1.2.1–1.2.8) in the ANSWER BOOK, for example 1.2.9 J.

COLUMN A		COLUMN B	
1.2.1	A smaller stream that joins a river	A	groundwater
1.2.2	High ground separating one drainage basin from another	B	interfluve
1.2.3	Point where two or more streams join	C	watershed
1.2.4	Gives rise to turbulent stream flow	D	impermeable
1.2.5	Rocks that hold water	E	rapids
1.2.6	Water that seeps underground	F	porous
1.2.7	Rocks that do not allow water to enter them	G	water table
1.2.8	Upper level of underground water	H	confluence
		I	tributary

(8 x 1) (8)

1.3 Refer to FIGURE 1.3 based on a satellite image.

1.3.1 Identify the low-pressure weather system shown in the satellite image. (1 x 1) (1)

1.3.2 Give evidence from the satellite image to support your answer to QUESTION 1.3.1. (1 x 2) (2)

1.3.3 Account for the direction in which this low-pressure weather system moves. (1 x 2) (2)

1.3.4 Why does this low-pressure weather system have a greater impact on South Africa in the winter? (1 x 2) (2)

1.3.5 Sketch a labelled cross-section of a cold front associated with this low-pressure weather system. (4 x 1) (4)

1.3.6 Explain how this low-pressure weather system has a positive impact on the economy of the South-western Cape. (2 x 2) (4)

1.4 FIGURE 1.4 shows the average air temperature distribution in the Johannesburg CBD.

1.4.1 Give the average temperature of the buildings in the Johannesburg CBD. (1 x 1) (1)

1.4.2 Give a reason for the relatively high temperatures of buildings in the Johannesburg CBD. (1 x 2) (2)

1.4.3 Explain why the average air temperature between the buildings is slightly lower than that of the buildings. (2 x 2) (4)

1.4.4 Write a paragraph of approximately EIGHT lines, in which you suggest ways in which the Johannesburg CBD can be redeveloped AND how alternative types of material can be used to reduce the amount of heat generated in the city. (4 x 2) (8)

1.5 Refer to FIGURE 1.5, which shows surface run-off patterns.

1.5.1 Define the term *surface run-off*. (1 x 1) (1)

1.5.2 In which landscape is the highest surface run-off recorded? (1 x 1) (1)

1.5.3 State why the surface run-off in the landscape you selected in QUESTION 1.5.2 is higher when compared to the other two surfaces. (1 x 2) (2)

1.5.4 Compare the run-off on the cultivated surface (50–60%) with the run-off on the forested surface (10–20%).

(a) How has the process of infiltration influenced the difference in recorded surface run-off? (1 x 2) (2)

(b) Describe the impact of the level of infiltration on the ground water levels for both surfaces **B** and **C**. (2 x 2) (4)

1.5.5 Suggest how increased run-off can be managed by referring to urban and cultivated surfaces, as shown in the diagram. (2 x 2) (4)

1.6 Refer to FIGURE 1.6, which illustrates river capture.

1.6.1 Define the term *river capture.* (1 x 1) (1)

1.6.2 What evidence in sketch **A** indicates that river capture is likely to take place? (1 x 1) (1)

1.6.3 Name TWO physical changes that river **A** will undergo after river capture has occurred. (2 x 1) (2)

1.6.4 State TWO possible conditions that have led to river **A** being the captor stream. (2 x 2) (4)

1.6.5 Write a paragraph of approximately EIGHT lines to describe how the reduced volume of water will negatively impact on the farming community at **B**. (4 x 2) (8)

[75]

QUESTION 2

2.1 Study FIGURE 2.1, based on a diagram showing the influence of the plateau on the weather and climate of South Africa.

2.1.1 Does sketch **X** or **Y** indicate a summer condition?

2.1.2 Name pressure cell **A**.

2.1.3 Name the ocean over which pressure cell **A** is located.

2.1.4 Name pressure cell **C**.

2.1.5 Is pressure cell **B** associated with rising or subsiding air?

2.1.6 Will clear and stable conditions occur in sketch **X** or sketch **Y**?

2.1.7 Does a strong or a weak subsidence give rise to the position of the inversion layer in sketch **Y**?

2.1.8 Must the inversion layer be above or below the plateau for rain to occur over the interior? (8 x 1) (8)

2.2 Match the statements below to the diagrams of fluvial features labelled **A**, **B**, **C** and **D** in FIGURE 2.2.

2.2.1 The river may result in the formation of oxbow lakes.

2.2.2 Vertical erosion is dominant in this diagram.

2.2.3 The river shows mainly a well-developed meandering stream channel pattern.

2.2.4 The river deposits silt on the river bed forming a braided stream pattern.

2.2.5 River deposition occurs in the shape of a fan.

2.2.6 The river is rejuvenating itself.

2.2.7 The river is in its upper course. (7 x 1) (7)

2.3 Study FIGURE 2.3 showing slope winds.

2.3.1 Name slope wind **A**. (1 x 1) (1)

2.3.2 State ONE factor that is responsible for the movement of slope wind **A**, as shown in FIGURE 2.3. (1 x 1) (1)

2.3.3 What impact do the uneven slopes have on the air moving downslope? (1 x 2) (2)

2.3.4 Explain why a temperature inversion occurs in a valley at night. (2 x 2) (4)

2.3.5 In a paragraph of approximately EIGHT lines, discuss how slope wind **A** can have both a positive and negative influence on vegetation growth on the valley floor. (4 x 2) (8)

2.4 Study FIGURE 2.4 based on hurricanes.

2.4.1 Give evidence that suggests that the conditions shown in the satellite image occurred in the Northern Hemisphere. (1 x 1) (1)

2.4.2 What is the approximate height of the clouds around the eye? (1 x 1) (1)

2.4.3 Account for the lack of clouds in the eye. (1 x 2) (2)

2.4.4 What is the source of energy that drives this hurricane? (1 x 2) (2)

2.4.5 Describe the type of weather conditions that surround the eye. (2 x 2) (4)

2.4.6 Draw a simplified, labelled plan view sketch of the illustrated hurricane, clearly indicating the following:

(a) Air movement around the eye (1 x 2) (2)

(b) The dangerous semicircle (area where most damage will be caused when it reaches land) (1 x 2) (2)

2.5 Study the graphical representation of stream discharge in the different stages of a drainage basin.

2.5.1 Define the term *stream discharge*. (1 x 1) (1)

2.5.2 In which course is the stream channel at its widest? (1 x 1) (1)

2.5.3 Give a possible explanation for your answer to QUESTION 2.6.2. (1 x 2) (2)

2.5.4 Give TWO reasons for the increase in stream discharge from the upper course to the lower course. (2 x 2) (4)

2.5.5 In a paragraph of approximately EIGHT lines, describe and explain the impact of an increase in rainfall on the depth and width of the river in the lower course. (4 x 2) (8)

2.6 FIGURE 2.6 is a case study on catchment and river management. Read the article carefully before answering the questions that follow.

2.6.1 Name TWO initiatives that the Working for Wetlands programme has put in place for sustainable river management in South Africa. (2 x 1) (2)

2.6.2 Why have catchment management programmes been introduced for South African rivers? (1 x 2) (2)

2.6.3 Explain the role of wetland restoration in maintaining a good water supply in South African rivers. (2 x 2) (4)

2.6.4 Discuss the negative impact of human activities on catchment areas in South Africa. (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 Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A–D) next to the question number (3.1.1–3.1.7) in the ANSWER BOOK, for example 3.1.8 D.

Do NOT answer these multiple-choice questions on the ANSWER SHEET provided in the ANSWER BOOK.

3.1.1 A loose grouping of farmsteads is called a …

A village.
B hamlet.
C metropolis.
D town.

3.1.2 The exact land on which a settlement is built:

A Location
B Site
C Situation
D Area

3.1.3 Settlement density refers to the number of settlements per …

A m^2.
B km^2.
C cm^2.
D mm^2.

3.1.4 A cultural factor which influences the location of a site is …

A water.
B pasture.
C fuel.
D religion.

3.1.5 A settlement is classified as rural as a result of the …

A number of people living in the settlement.
B number of high-order activities.
C function of the settlement.
D number of low-order activities.

3.1.6 Dry-point settlements occur near …

A rivers.
B oases.
C marshes.
D high ground.

3.1.7 A settlement located next to the river where it could be easily crossed:

A Recreational settlement
B Gateway settlement
C Bridging-point settlement
D Crossroads settlement (7 x 1) (7)

3.2 Choose a term from COLUMN B that matches the description 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	Industries that use bulky and heavy raw materials	A	bridge industry
3.2.2	A measure of the goods and services that are produced in a country each year	B	economic recession
3.2.3	Industrial areas outside the core zoned for economic development	C	footloose industry
3.2.4	Industries that are not location-dependant	D	industrial decentralisation
3.2.5	An industry that is located between its source of raw material and its market area	E	gross domestic product
3.2.6	A decrease in economic activity	F	export market
3.2.7	Markets available within a country for local consumption of products	G	home market
3.2.8	Markets in another country where products are sold	H	ubiquitous industry
		I	heavy industry

(8 x 1) (8)

3.3 Refer to FIGURE 3.3, a cartoon on the 1913 Natives Land Act in South Africa.

3.3.1 Define the term *land restitution*. (1 x 1) (1)

3.3.2 What was the aim of the Natives Land Act, 1913 (Act 27 of 1913)? (1 x 1) (1)

3.3.3 When was the 1913 Natives Land Act repealed? (1 x 1) (1)

3.3.4 Explain why land restitution is suitably linked to the snail. (2 x 2) (4)

3.3.5 Write a paragraph of approximately EIGHT lines, outlining some of the factors that have slowed down the process of land reform in South Africa. (4 x 2) (8)

3.4 Refer to FIGURE 3.4, illustrating a central place and its surrounding customers.

3.4.1 What is a *central place*? (1 x 1) (1)

3.4.2 Clearly distinguish between *threshold population* and *sphere of influence*, as shown in FIGURE 3.4. (2 x 1) (2)

3.4.3 Refer to customers **A**, **B** and **C**.

(a) If all three customers bought the same product at the central place, for which customer would the product be more costly? (1 x 2) (2)

(b) Give a reason for your answer to QUESTION 3.4.3(a). (1 x 2) (2)

3.4.4 Explain how the threshold population impacts on the profit margin of a business. (2 x 2) (4)

3.4.5 Describe and explain the impact of the location of a highly specialised service on the sphere of influence of the central place. (2 x 2) (4)

3.5 Refer to the photograph on small-scale farming in FIGURE 3.5.

3.5.1 Define the term *small-scale farmer*. (1 x 1) (1)

3.5.2 (a) Would you describe the small-scale farmer in the photograph as a subsistence farmer or commercial farmer? (1 x 2) (2)

(b) Give ONE reason for your answer to QUESTION 3.5.3(a). (1 x 2) (2)

3.5.3 Describe ONE problem visible on the photograph, that the small-scale farmer experiences. (1 x 2) (2)

3.5.4 Write a paragraph of approximately EIGHT lines to motivate the importance of small-scale farming for local communities. (4 x 2) (8)

3.6 Refer to FIGURE 3.6, providing information on the Durban-Pinetown Industrial Region.

3.6.1 What evidence suggests that Durban-Pinetown is growing rapidly as an industrial area? (1 x 1) (1)

3.6.2 Name a raw material that has supported industrial growth in this region. (1 x 1) (1)

3.6.3 Quote ONE of the main benefits of the Cornubia Industrial Park in FIGURE 3.6. (1 x 1) (1)

3.6.4 Explain how the benefit identified in QUESTION 3.6.3 will assist local communities. (2 x 2) (4)

3.6.5 How does the infrastructure in this industrial region support rapid industrial growth? (2 x 2) (4)

3.6.6 Use examples and explain why this industrial region has many break-of-bulk industries. (2 x 2) (4)

[75]

QUESTION 4

4.1 Choose a term from COLUMN B that matches the description in COLUMN A. Write only the letter (A–H) next to the question number (4.1.1–4.1.7) in the ANSWER BOOK, for example 4.1.8 I.

COLUMN A		COLUMN B	
4.1.1	Largest type of rural settlement	A	nucleated settlement
4.1.2	Merging of cities to form a continuous urban area	B	megalopolis
4.1.3	Smallest settlement type	C	farmstead
4.1.4	A single city that is surrounded by dependent towns	D	village
4.1.5	Smallest type of urban settlement	E	town
4.1.6	When buildings in a settlement form a compact unit	F	conurbation
4.1.7	The largest urban settlement type	G	metropolis
		H	settlement design

(7 x 1) (7)

4.2 Refer to FIGURE 4.2 on economic geography to answer this question.

Choose the correct word from those given in brackets. Write only the word next to the question number (4.2.1–4.2.8) in the ANSWER BOOK.

4.2.1 The (secondary/tertiary) sector refers to the provision of services.

4.2.2 After extraction, value is added to raw materials in the (secondary/tertiary) sector.

4.2.3 Economic growth in the primary sector declined due to the decrease in (agriculture/mining).

4.2.4 The service sector that has shown the biggest growth is (mining/finance).

4.2.5 The (secondary/tertiary) sector contributes the least to the South African economy.

4.2.6 The mining sector has grown due to increased production in (gold/platinum).

4.2.7 The growth in trade is linked to a growth in (manufacturing/agriculture).

4.2.8 The sector to which tourism makes a contribution is the (secondary/tertiary) sector. (8 x 1) (8)

4.3 Refer to FIGURE 4.3 showing rural-urban migration.

4.3.1 Define the term *rural-urban migration*. (1 x 1) (1)

4.3.2 Why is a magnet used in the diagram to illustrate rural-urban migration? (1 x 1) (1)

4.3.3 Name TWO push factors, visible in the diagram, resulting in rural-urban migration. (2 x 1) (2)

4.3.4 State TWO ways in which rural-urban migration impacts negatively on the rural community. (2 x 2) (4)

4.3.5 In a paragraph of approximately EIGHT lines discuss sustainable measures that can be introduced in rural areas to reduce rural-urban migration. (4 x 2) (8)

4.4 Study FIGURE 4.4 based on an urban problem.

4.4.1 Name the urban problem in the cartoon. (1 x 1) (1)

4.4.2 Which phrase in the cartoon suggests that the cyclists are moving faster than the cars? (1 x 1) (1)

4.4.3 State TWO environmental impacts of the problem identified in QUESTION 4.4.1. (2 x 1) (2)

4.4.4 Give TWO reasons why bike lanes are becoming more important in most urban land-use zones. (2 x 2) (4)

4.4.5 Suggest THREE ways in which traffic congestion can be reduced. (3 x 2) (6)

4.5 Refer to the newspaper extract on the Maputo Development Corridor.

4.5.1 Give evidence from the extract that confirms that the Maputo Development Corridor is a successful initiative. (1 x 1) (1)

4.5.2 Which core industrial area in South Africa benefits the most from the Maputo Development Corridor? (1 x 1) (1)

4.5.3 Name TWO infrastructure facilities that support the growth of the Maputo Development Corridor. (2 x 1) (2)

4.5.4 Refer to the statement, 'Trade is largely outward bound.'

(a) What does the statement *trade is outward bound* mean? (1 x 2) (2)

(b) Comment on why this type of trade is an advantage to South Africa. (1 x 2) (2)

4.5.5 In a paragraph of approximately EIGHT lines, explain how South Africa and Mozambique have benefited from the Maputo Development Corridor. (4 x 2) (8)

4.6 Refer to the graphical data on the informal sector in FIGURE 4.6.

4.6.1 Define the term *informal sector*. (1 x 1) (1)

4.6.2 What trend does the net monthly income show from 2008 to 2016? (1 x 1) (1)

4.6.3 Suggest TWO reasons for the forced removal from the place of trading to a new location. (2 x 2) (4)

4.6.4 Describe and explain the negative impact of any ONE of the declining working conditions on workers in the informal sector. (2 x 2) (4)

4.6.5 Why are female workers important to the informal sector of the economy? (2 x 2) (4)

[75]

TOTAL: 225