education

Department:
Education
PROVINCE OF KWAZULU-NATAL

GEOGRAPHY P1

COMMON TEST

JUNE 2019

NATIONAL SENIOR CERTIFICATE

GRADE 12

MARKS: 225

TIME: 3 hours

This question paper consists of 13 pages and a 8 page Annexure.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of THREE questions.
2. Answer ALL 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. Do NOT write in the margins of your ANSWER BOOK.
8. Where possible, illustrate your answers with labelled diagrams.
9. Write clearly and legibly.

SECTION A: CLIMATE, WEATHER AND GEOMORPHOLOGY

QUESTION 1

1.1 Study FIGURE 1.1 showing a low pressure system. Choose the correct word(s) from those given in brackets to complete the sentence. Write only the word(s) next to the question numbers 1.1.1 to 1.1.7 in the ANSWER BOOK.

1.1.1 The low pressure system shown is the (thermal low / coastal low).

1.1.2 The air is circulating in a (clockwise / anticlockwise) direction.

1.1.3 The air at **X** is moving from (sea to land / land to sea).

1.1.4 The air at **Y** (onshore / offshore).

1.1.5 The air at **X** is (dry / moist).

1.1.6 The low pressure system is associated with (stable / unstable) air.

1.1.7 (Fog / Snow) will occur along the west coast. (7 x 1) (7)

1.2 Study FIGURE 1.2 showing a river profile to answer the questions. Write ONLY the answer next to the question number (1.2.1 – 1.2.8) in the ANSWER BOOK.

1.2.1 Name the course of the river **A**.

1.2.2 Will the source of the river be found in course **A** or **B**?

1.2.3 Which course of the river is steep and deep?

1.2.4 Name the fluvial feature **C**.

1.2.5 Name the slope that is formed on the outer bank of **C**.

1.2.6 In which course of the river will braided streams form?

1.2.7 Which course of the river is dominated by lateral and downward erosion?

1.2.8 Does the river show a graded or an ungraded river profile? (8 x 1) (8)

1.3 FIGURE 1.3 shows the formation of a line thunderstorm.

1.3.1 Identify the line represented by **A.** (1 x 1) (1)

1.3.2 Name the pressure cells **B** and **C** that forms the trough of low pressure over the interior of South Africa in summer. (2 x 1) (2)

1.3.3 Describe **TWO** characteristics of the wind labelled **D.** (2 x 2) (4)

1.3.4 Explain why severe storms are expected on the eastern side of line **A**. (2 x 2) (4)

1.3.5 Describe the hazards/dangers associated with these thunderstorms for farmers in the interior. (2 x 2) (4)

1.4 Study FIGURE 1.4 A and 1.4 B showing different positions of the upper air inversion layer over South Africa

1.4.1 Define the term temperature inversion. (1 x 1) (1)

1.4.2 Which of the diagrams, FIGURE **1.4 A** or **1.4 B**, represents summer conditions? (1 x 1) (1)

1.4.3 Give **ONE** reason for your answer to QUESTION 1.4.2. (1 x 1) (1)

1.4.4 Suggest how the varying positions of the inversion layer influences the rainfall patterns over the South African interior in summer and winter. (2 x 2) (4)

1.4.5 In a paragraph of approximately EIGHT lines, assess the impact that the position of the inversion layer in 1.4 **A** will have on farming over the interior of South Africa. (4 x 2) (8)

1.5 Study FIGURE 1.5 showing drainage basins in the Eastern Cape.

1.5.1 Define the term drainage basin. (1 x 1) (1)

1.5.2 Calculate the stream order of the Gumtoos river as it enters the ocean (**B**) (1 x 2) (2)

1.5.3 Provide **TWO** reasons why basin **2** shows a low drainage density. (2 x 2)(4)

1.5.4 In a paragraph of approximately EIGHT lines explain why flooding is more likely to occur at the river confluence **C** rather than at the confluence **F.** (4 x 2) (8)

1.6 Study FIGURE 1.6, showing drainage patterns and landscapes.

1.6.1 Match drainage pattern **A**, **B** and **C** with landscapes **1**, **2** and **3**. (1 x 3) (3)

1.6.2 Give the main factor that results in different drainage patterns. (1 x 2) (2)

1.6.3 State **ONE** characteristic of drainage basin **B.** (1 x 2) (2)

1.6.4 Explain **ONE** Similarity and **ONE** difference between stream patterns **A and C.** (2 x 2) (4)

1.6.5 Explain why a dendritic stream pattern will not develop in landscape **2.** (2 x 2) (4)

[75]

QUESTION 2

2.1 The following questions are based on berg wind conditions. Choose the correct word(s) from those given in brackets to complete the sentence. Write only the word(s) next to the question numbers 2.1.1 to 2.1.8 in the ANSWER BOOK. Example 2.1.9 sea breeze

2.1.1 Berg wind conditions occur during (winter / summer).

2.1.2 The high pressure cell associated with berg winds is the (South Indian High / Continental High).

2.1.3 The air circulation around the high pressure cells is (clockwise / anticlockwise).

2.1.4 The low pressure cell associated with berg winds is the (Thermal Low / Coastal Low).

2.1.5 The cloud cover over the plateau will show (clear / overcast).

2.1.6 The temperature will (increase adiabatically / decrease adiabatically) as it descends the Berg.

2.1.7 The temperature change is (1°C. / 0,5°C.) for every 100 meters.

2.1.8 (Flooding / Veld fires) are common during berg wind conditions. (8 x 1) (8)

2.2 Various options are provided as possible answers to the statements provided. Read the statements and choose only the letter (A - D). Write only the letter next to the question number (2.1.1 to 2.1.7) in the ANSWER BOOK. Example 2.1.8 D

2.2.1 A ... is a high lying area that separates two drainage basins.

A drainage basin
B watershed
C interfluve
D confluence

2.2.2 A ... is formed where the river enters the sea.

A rapid
B lake
C delta
D waterfall

2.2.3 The ... slope is a gentle slope on a river bend caused by deposition.

A under-cut
B slip-off
C concave
D outer

2.2.4 A ... is a raised bank of a river.

A levee
B rapid
C waterfall
D braided stream

2.2.5 A ... is a break in gradient along a river, usually marked by a rapid or a waterfall.

A terrace
B grading
C rejuvenation
D knick point

2.2.6 The ... river is older than the new landscape.

A graded
B superimposed
C antecedent
D episodic

2.2.7 The ... is an area from which a river system obtains its water.

A drainage basin
B catchment
C confluence
D interfluve (7 x 1) (7)

2.3 Refer to FIGURE 2.3 showing a synoptic weather map of South Africa.

2.3.1 Give **ONE** piece of evidence to suggest that the map respresents a summer condition. (1 x 1) (1)

2.3.2 Explain why system **B** will move in a south easterly direction. (1 x 2) (2)

2.3.3 Provide **TWO** reasons why system **B** seldom influences the South African weather pattern in summer. (2 x 2) (4)

2.3.4 Explain why the tropical ocean water temperature must be at least 26.5^0C for the development of the weather system represented by **A** (1 x 2) (2)

2.3.5 Describe the weather associated with the eye of system **A**. (2 x 1) (2)

2.3.6 Suggest **TWO** precautionary measures the people of Mozambique need to put in place to reduce the impact of the storm. (2 x 2) (4)

2.4 Refer to FIGURE 2.4 showing pollution over Pietermaritzburg.

2.4.1 Name the tertiary wind that would contribute to Pietermaritzburg's pollution problem at night. (1 x 1) (1)

2.4.2 Identify **ONE** natural and **ONE** made-made factor, mentioned in the article, that is responsible for the "brown haze" over Pietermaritzburg. (2 x 1) (2)

2.4.3 Outline how the situation of Pietermaritzburg plays a significant role in creating the pollution problem in winter. (2 x 2) (4)

2.4.4 In a paragraph of approximately EIGHT lines, explain the impact that the "brown haze" will have on the quality of life of people living in Pietermaritzburg area. (4 x 2) (8)

2.5 Refer to FIGURE 2.5, which illustrates river capture.

2.5.1 Identify the letter of the alphabet that shows the captor stream. (1 x 1) (1)

2.5.2 Give a reason for your answer to QUESTION 2.5.1 (1 x 2) (2)

2.5.3 Describe the changes that river **B** will undergo as a result of river capture. (2 x 2) (4)

2.5.4 What evidence is there, in the illustration, to prove that abstraction has taken place? (1 x 2) (2)

2.5.5 Name the process that was responsible for abstraction. (1 x 2) (2)

2.5.6 Draw a simple diagram to illustrate the situation of the two rivers systems before river capture occurred. Include the following:

a. Captor stream
b. Great escarpment
c. Captured stream (4 x 1) (4)

2.6 Refer to FIGURE 2.6. Read the extract and study the map showing rivers in the North West Province

2.6.1 Identify the activity practised in the immediate vacinity of the Hartbeespoort Dam that impacts negatively on the quality of water in the rivers and the dam. (1 x 1) (1)

2.6.2 Explain how the activity mentioned in QUESTION 2.6.1 affects the health of the river system. (2 x 1) (2)

2.6.3 Provide **TWO** reasons why the catchment areas and drainage basin of the Jukskei River must be effectively managed. (2 x 2) (4)

2.6.4 Write a paragraph of approximately EIGHT lines on effective mangement strategies that can be used to manage drainage basins in a sustainable manner. (4 x 2) (8)

[75]

SECTION B: RURAL AND URBAN SETTLEMENTS

QUESTION 3

3.1 Choose the most correct answer from the alternatives provided in the block below. Write down only the question number (3.1.1 – 3.1.8) and the selected answer.

Site,	Rural,	Dispersed settlement,	Rural hamlet,
Push factors,	Subsistence farming,	Basic need philosophy,	
Land restitution,	Land redistribution		

3.1.1 A loose grouping of farmsteads.

3.1.2 The government buys land and sell it to potential farmers.

3.1.3 The strategy that sees human dignity as a prerequisite for economic development.

3.1.4 Settlements that are unifunctional.

3.1.5 The issues that force people to move from rural areas to urban areas.

3.1.6 The precise terrain that is being covered by a settlement.

3.1.7 The settlement pattern, where the buildings are far apart from each other.

3.1.8 When primitive farming methods are used during farming activities. (8 x 1) (8)

3.2 Choose a term from COLUMN B that matches the description in COLUMN A. Write only the letter (A – G) next to the question number (3.2.1–3.2.7), for example 3.2.8 H.

COLUMN A		COLUMN B	
3.2.1	Forces that attract people and businesses to the CBD.	A	Sphere of influence
3.2.2	The system that shows the ranking of cities according to their amount of functions.	B	Rate of urbanization
3.2.3	The area from which a business attract its customers	C	Urban sprawl
3.2.4	The maximum distance a customer is prepared to travel to make use of a service.	D	Centripetal forces
3.2.5	The percentage of a country's total population living in urban areas.	E	Urban decay
3.2.6	Refers to the uncontrolled expansion of urban areas.	F	Range
3.2.7	This refers to the ageing and deterioration of buildings.	G	Hierarchy
		H	Level of urbanisation

(7 x 1) (7)

3.3 Refer to FIGURE 3.3 showing site, location and pattern of rural settlement and answer the questions that follow.

3.3.1 Identify **TWO** factors that influenced the site of settlement **B**. (2 x 1) (2)

3.3.2 Name the rural settlement patterns at **A** and **B**. (2 x 1) (2)

3.3.3 **C** is a suitable location for commercial agricultural farming. Substantiate this statement by providing evidence from the sketch. (2 x 2) (4)

3.3.4 Write a paragraph of approximately EIGHT lines in which you evaluate the socio-economic advantages and disadvantages of settlement pattern at **B**. (4 x 2) (8)

3.4 Refer to FIGURE 3.4 showing a rural settlement issue and answer the questions that follow.

3.4.1 Name the process being illustrated by the arrow labelled **A**. (1 x 1) (1)

3.4.2 List **ONE** physical push factor that encouraged the process mentioned in QUESTION 3.4.1. (1 x 1) (1)

3.4.3 One of the consequences of the process mentioned in QUESTION 3.4.1 is rural depopulation. Discuss the negative impact rural depopulation will have on rural areas. (2 x 2) (4)

3.4.4 The city border is indicated by **B** on the sketch. Explain why this border line differs during the PRESENT and FUTURE COUTRYSIDE. (2 x 2) (4)

3.4.5 Discuss **TWO** strategies that the local municipalities of the COUNTRYSIDE may have implemented to attract *urban households* to the rural areas. (2 x 2) (4)

3.5 FIGURE 3.5, is an illustration of urbanization. Study the illustration and answer the questions that follow.

3.5.1 What is urbanisation? (1 x 1) (1)

3.5.2 Explain how the sketch illustrates urbanization. (1 x 2) (2)

3.5.3 Discuss how the natural environment is being affected by urbanisation in the illustration. (2 x 2) (4)

3.5.4 The person in the sketch represents the local municipalities of urban areas and seems to be very concerned about how the process of urbanisation is unfolding. In a paragraph of approximately EIGHT lines, describe how the development of greenbelts can be used as a strategy to make cities more sustainable. (4 x 2) (8)

3.6 Study the photo of an urban land use zone in FIGURE 3.6, and answer the questions that follow.

3.6.1 Does the photo depict a heavy or light industry? (1 x 1) (1)

3.6.2 Name any **TWO** characteristics of this type of industry. (answer to QUESTION 3.6.1) (2 x 1) (2)

3.6.3 Describe the negative effect that the urban problem at **A** might have on the building structures of the area. (2 x 2) (4)

3.6.4 Discuss how the problem at **A** on the photo can be minimised. (2 x 2) (4)

3.6.5 Explain why this type of industry and the CBD cannot be located close to each other. (2 x 2) (4)

[75]

TOTAL MARKS: 225

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GEOGRAPHY P1

ANNEXURE

COMMON TEST

JUNE 2019

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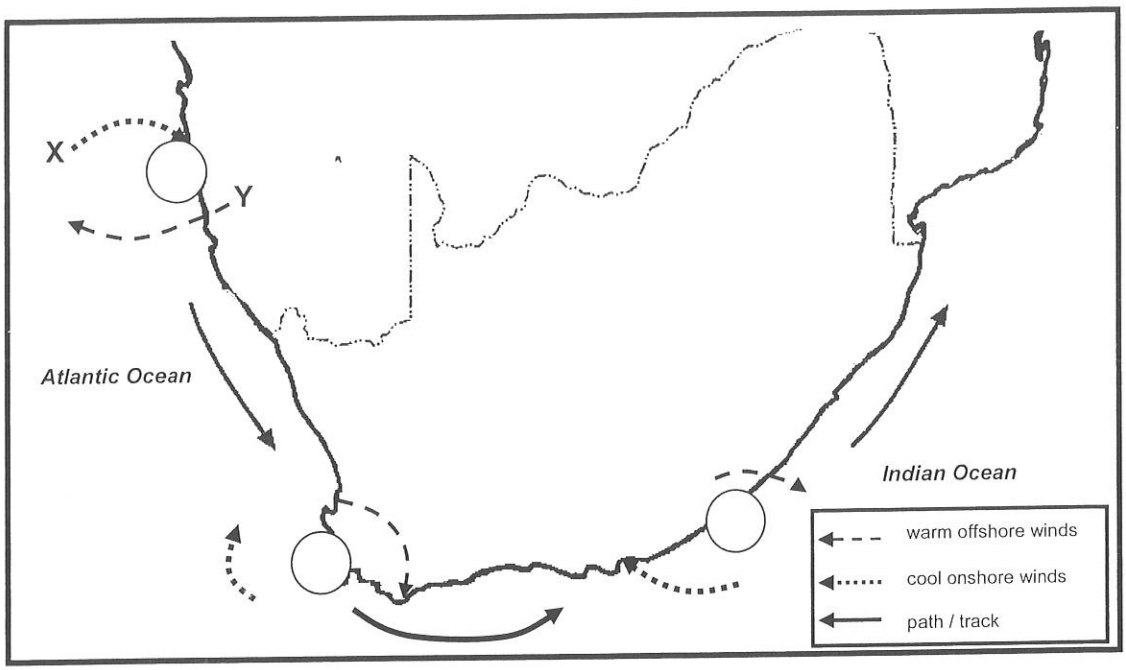
GRADE 12

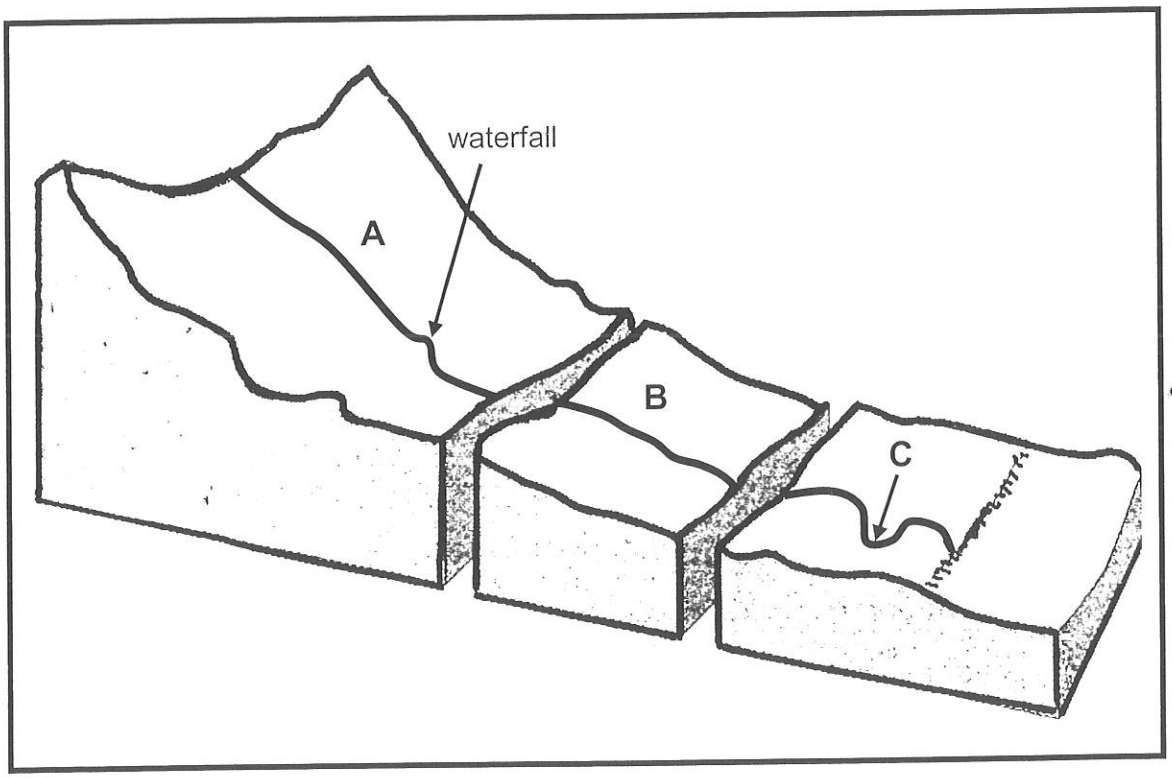
This Annexure consists of 8 pages.

FIGURE 1.1: A LOW PRESSURE SYSTEM



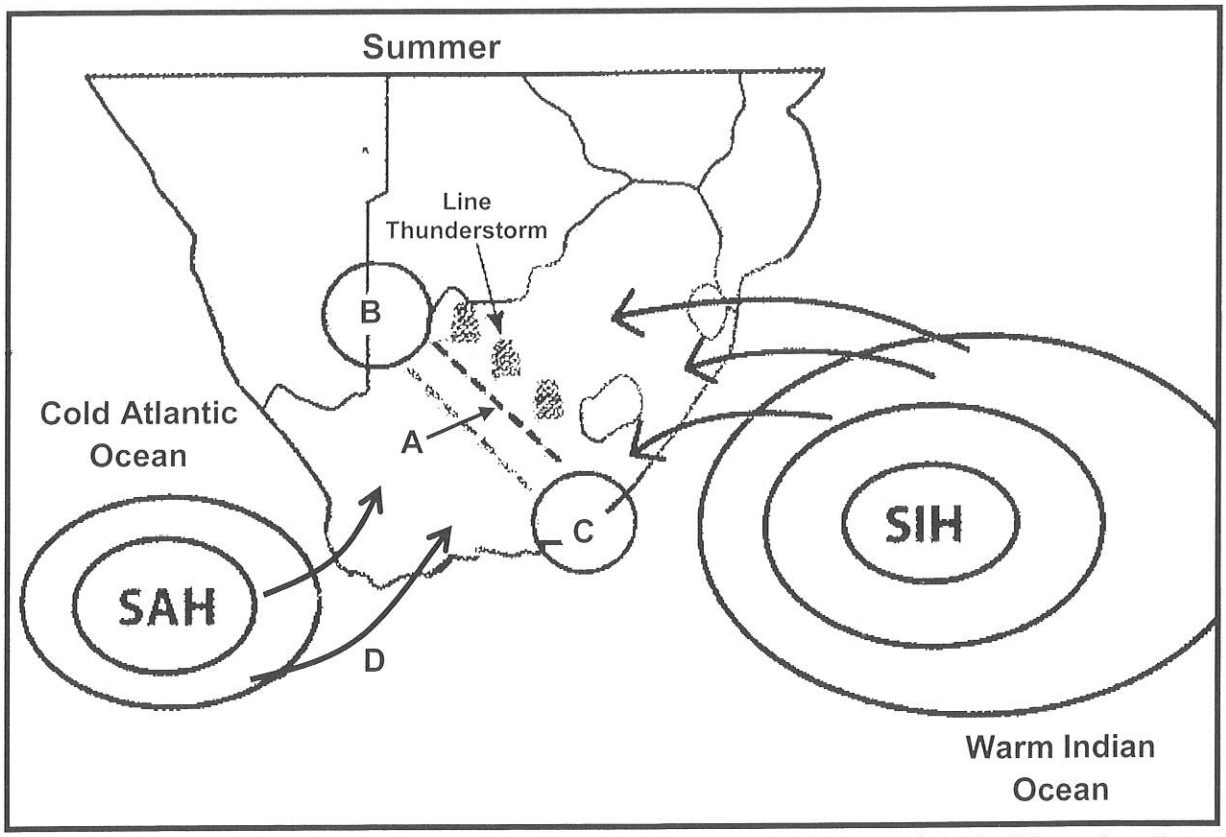
Source: Oxford: In Search of Geography

FIGURE 1.2: RIVER PROFILE



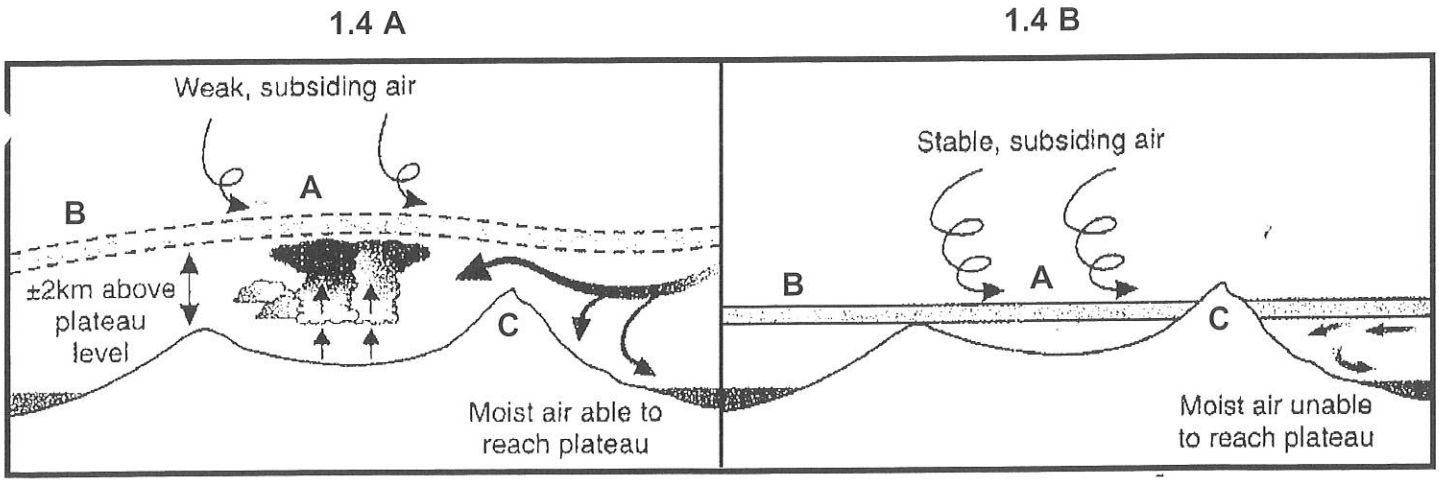
Source: Adapted from google images

FIGURE: 1.3: LINE THUNDERSTORMS



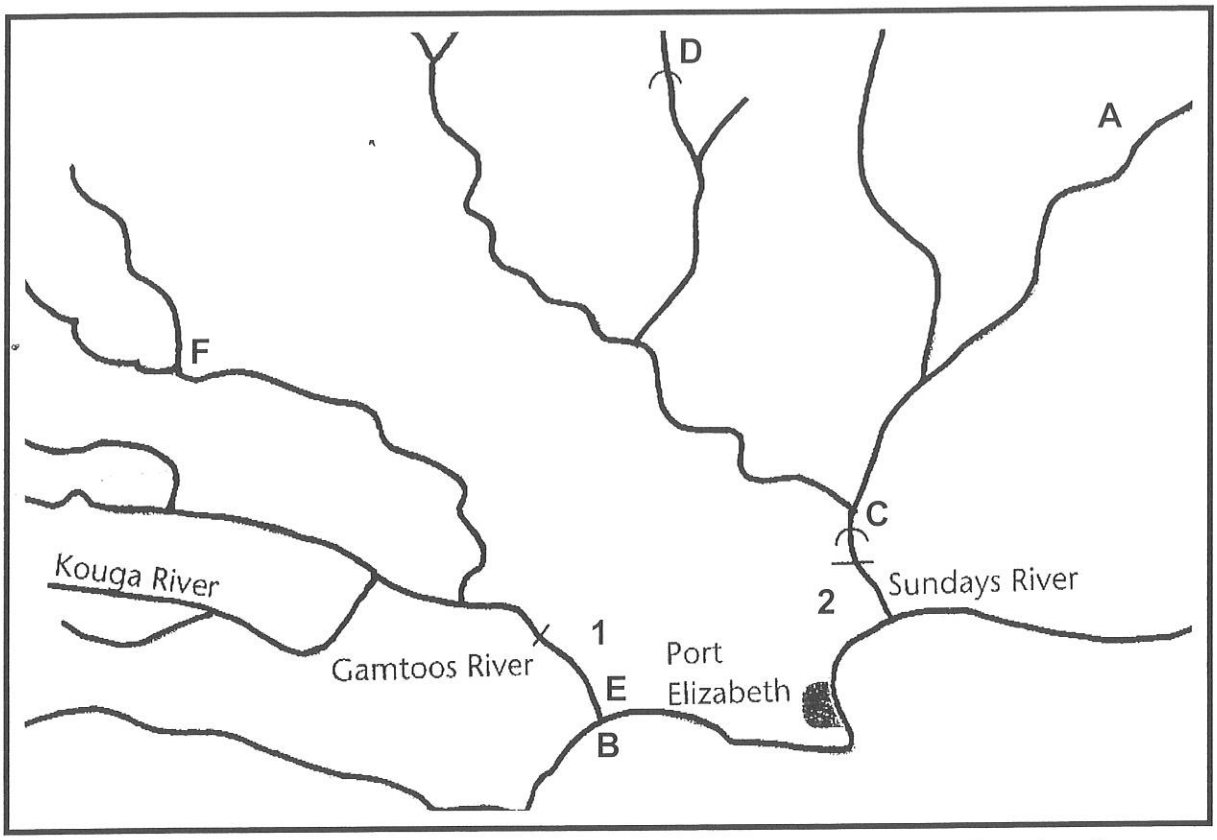
Source: Adapted from Ace It

FIGURE 1.4: INVERSION LAYER



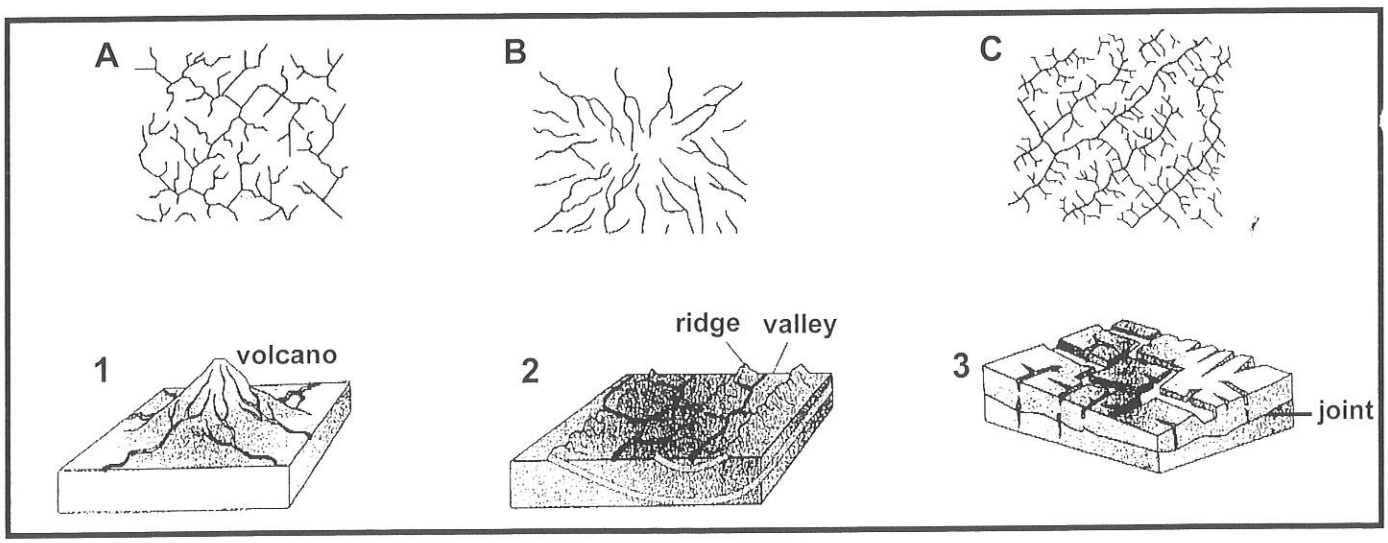
Source: South African weather patterns

FIGURE 1.5: DRAINAGE BASINS IN THE EASTERN CAPE



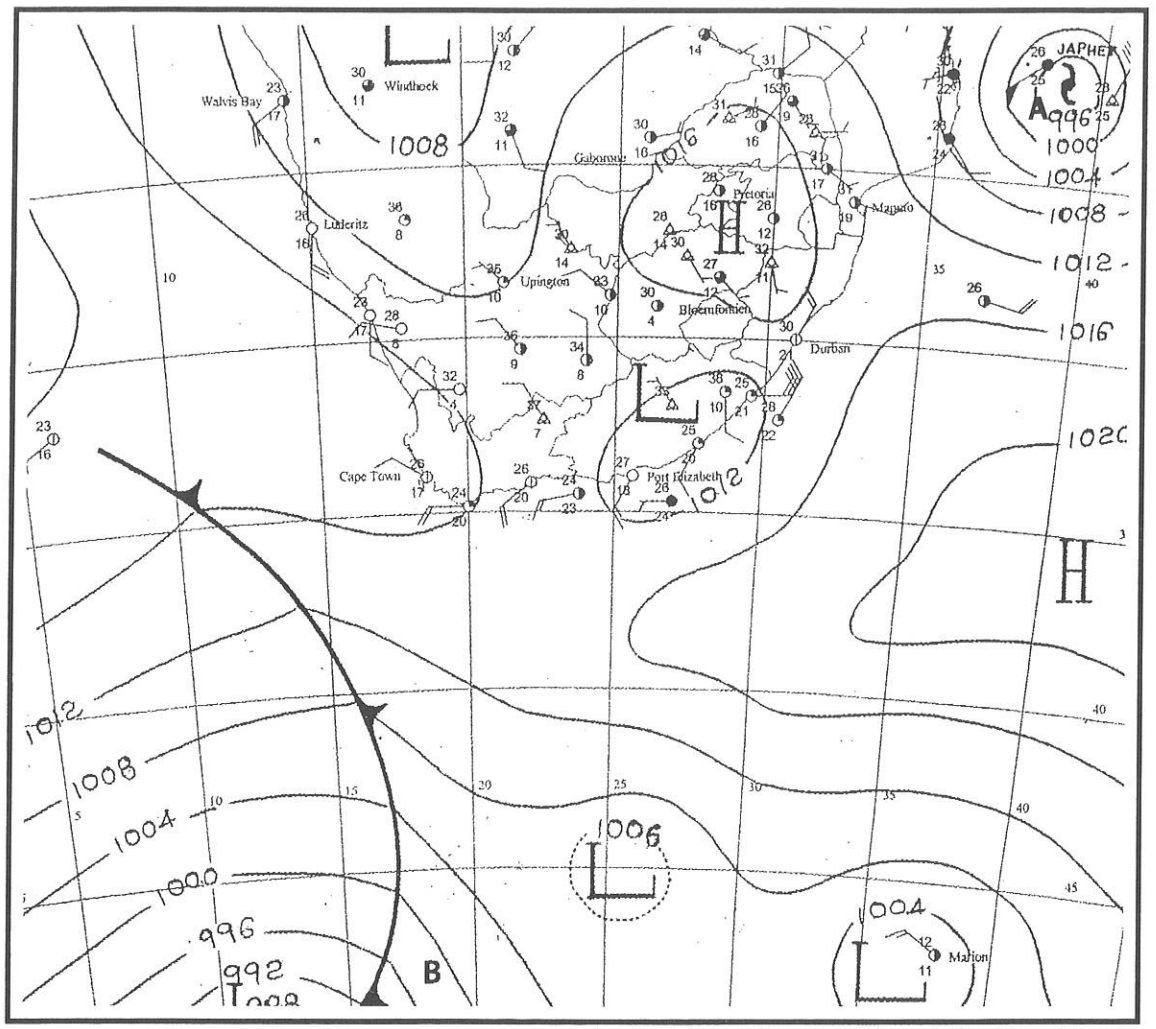
Source: Solutions for all

FIGURE 1.6: DRAINAGE PATTERNS AND LANDSCAPES



Source: Adapted from Study Master

FIGURE 2.3: SYNOPTIC WEATHER MAP



Adapted from South African Weather Service

FIGURE 2.4: POLLUTION OVER PIETERMARITZBURG

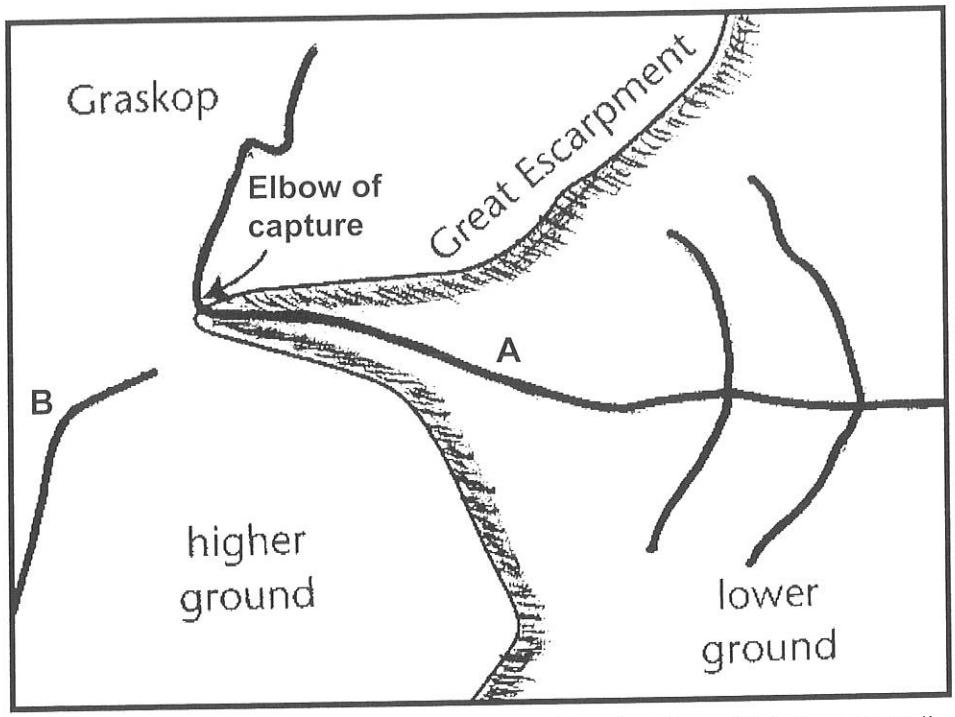
Polluted PIETERMARITZBURG

The worst period for air pollution is winter. The land cools off rapidly and drains down the sloping ground. Some of the water vapour in the air condenses to form mist or fog. Polluted air is trapped in the valley and cannot disperse. These conditions give rise to the brown haze. As air pollution increases, the allergies also increase.

Municipal records show that home and industry generated smoke levels are high. It has been recommended that industries be situated at least 100 metres above the valley floor.

Source: 23 JUNE 2008: JULIA DENNY DIMITRIOU (Author)

FIGURE 2.5: RIVER CAPTURE

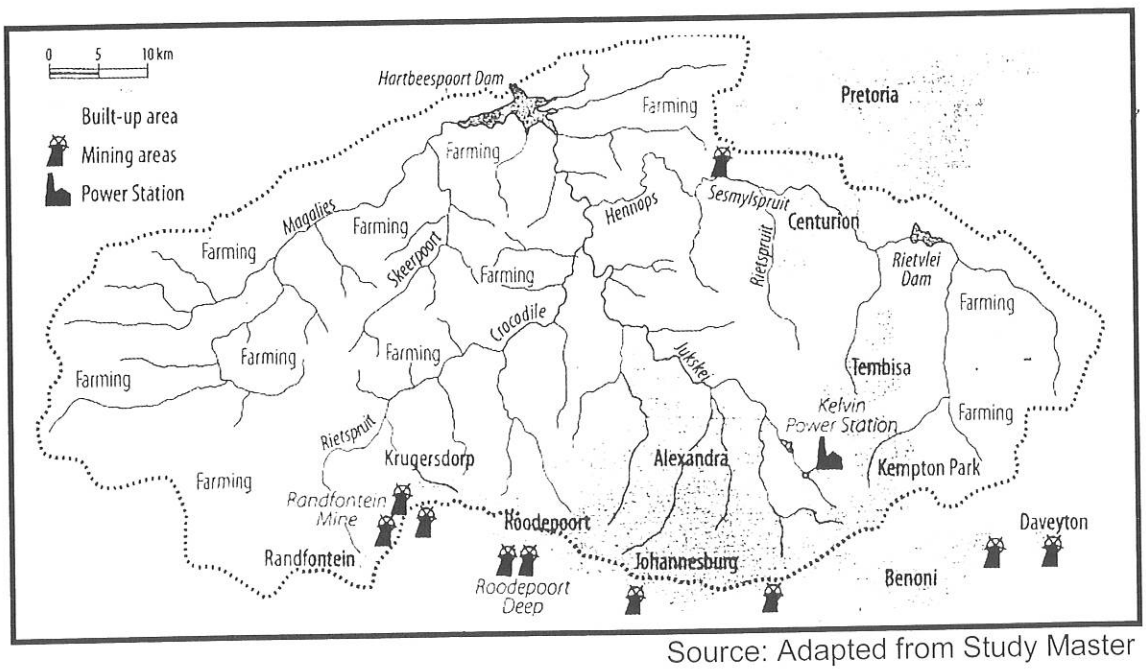


Adapted from Solutions for all

FIGURE 2.6: CATCHMENT MANAGEMENT

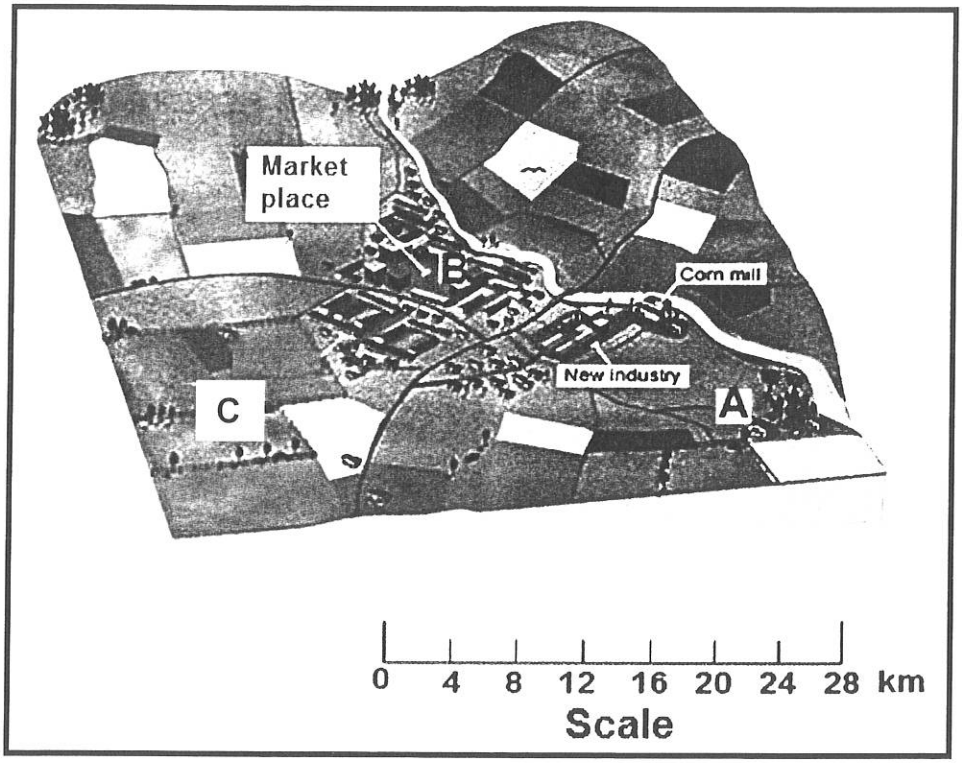
The Hartebeespoort Dam in the North West Province is sometimes a green colour. The Juskei River contributes significantly to the problem. It carries waste effluents from mining areas, power stations, domestic effluents and agricultural waste.

Heavy rains cause the river to flood and carry the contaminated water to settlements along the river.



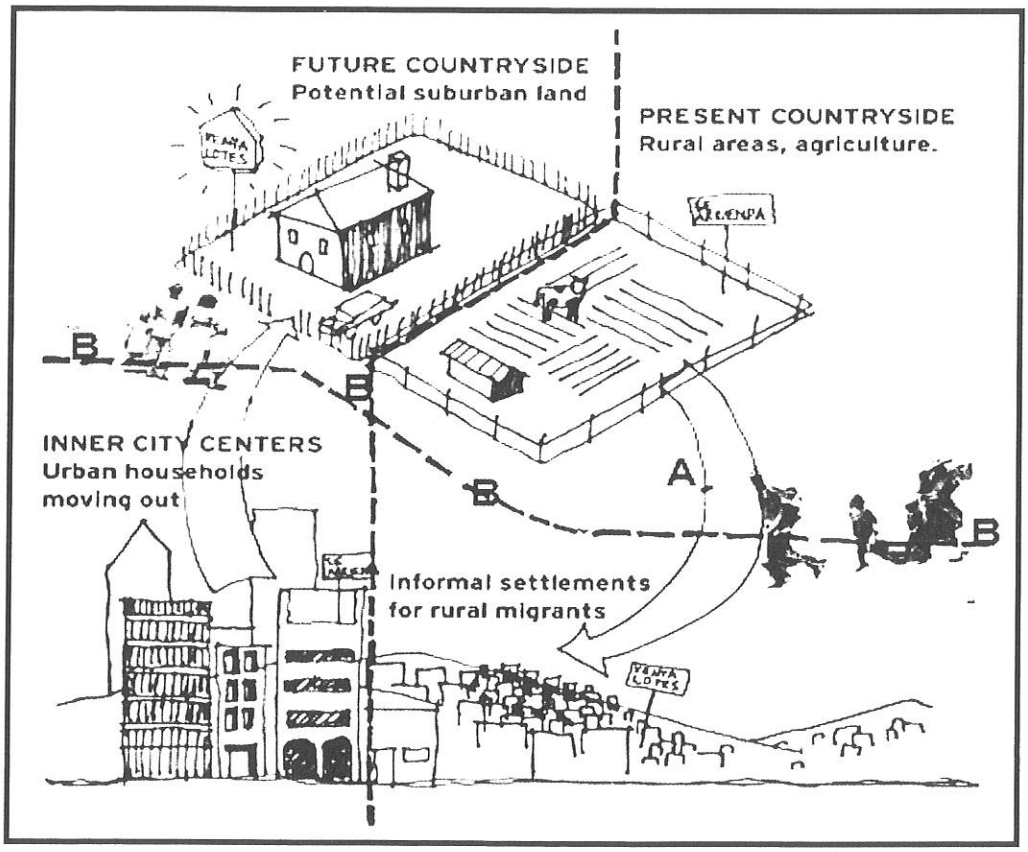
Source: Adapted from Study Master

FIGURE 3.3: SITE, LOCATION AND PATTERN OF RURAL SETTLEMENTS



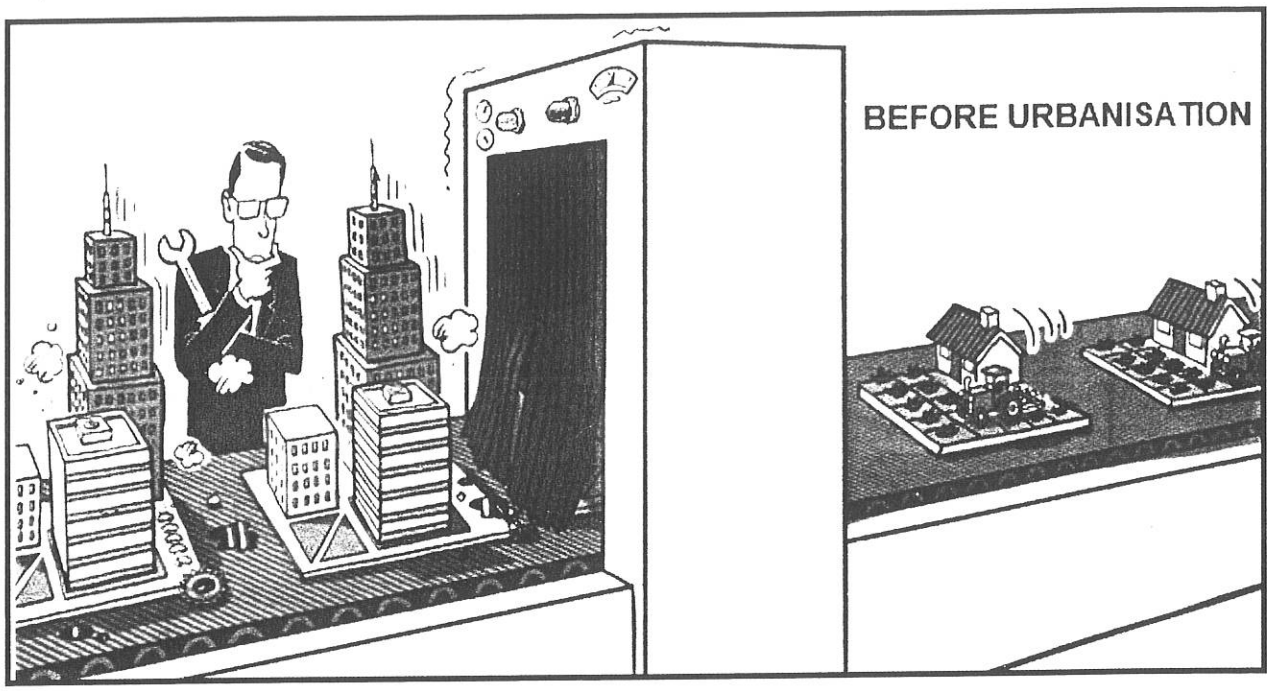
[Source: *www.google.co.za/images*]

FIGUUR 3.4- RURAL SETTLEMENT ISSUE



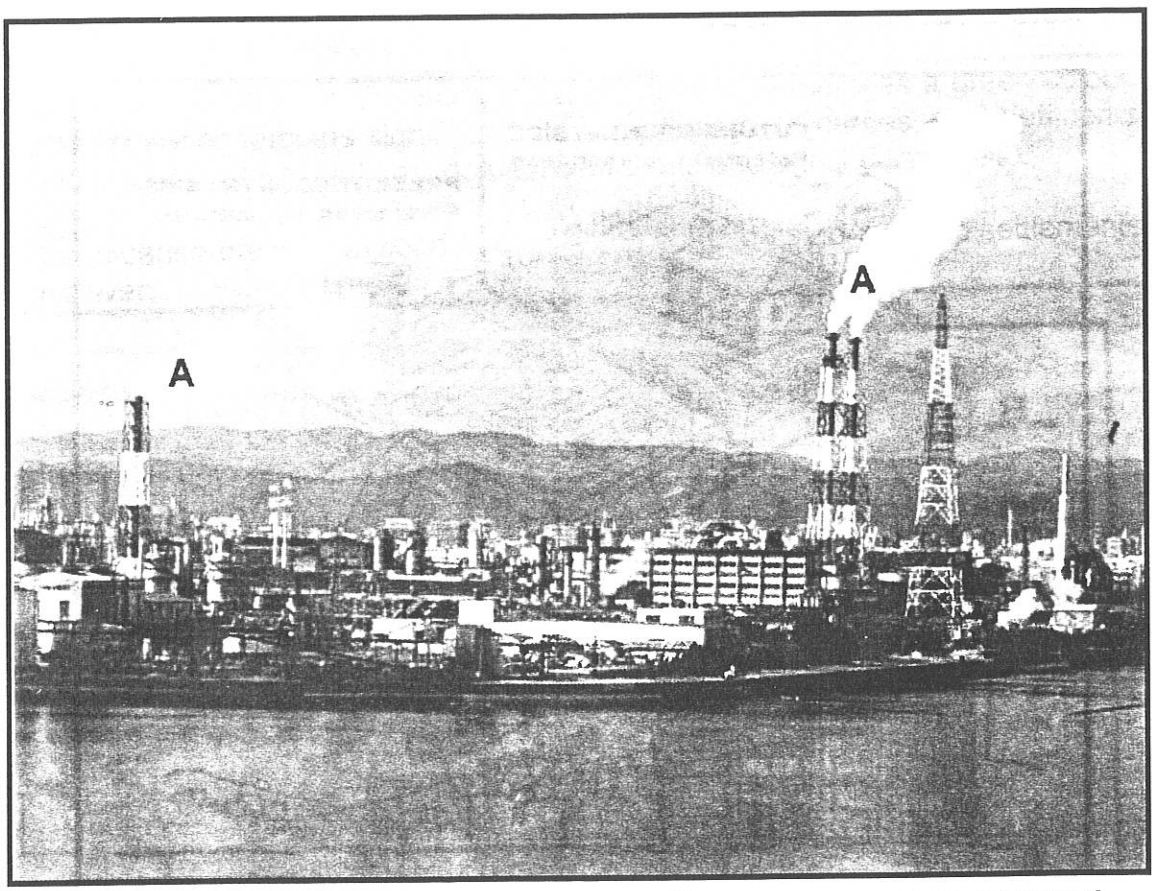
[Source: *Google images*]

FIGURE 3.5: URBANIZATION



[Source: *Google images*]

FIGURE 3.6: LAND USE ZONES IN URBAN AREAS



[Source: www.google.co.za/ images]

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GEOGRAPHY P1

MARKING GUIDELINE

COMMON TEST

JUNE 2019

NATIONAL SENIOR CERTIFICATE

GRADE 12

MARKS: 225

This marking guideline consists of 16 pages.

SECTION A: CLIMATE AND WEATHER AND GEOMORPHOLOGY

QUESTION 1

1.1

1.1.1 coastal low ✓

1.1.2 clockwise ✓

1.1.3 sea to land ✓

1.1.4 offshore ✓

1.1.5 moist/dry ✓

1.1.6 unstable ✓

1.1.7 Fog ✓ (7 x 1) (7)

1.2

1.2.1 upper ✓

1.2.2 A ✓

1.2.3 A (upper) ✓

1.2.4 meander ✓

1.2.5 undercut ✓

1.2.6 lower course ✓

1.2.7 middle course / B ✓

1.2.8 ungraded ✓ (8 x 1) (8)

1.3

1.3.1 Moisture front/squall line ✓ (1 x 1) (1)

1.3.2 B - Thermal Low ✓
C - Coastal Low ✓ (2 x 1) (2)

1.3.3 Air is dry/low moisture content ✓✓
Air is cold /blows over the Benguela current ✓✓
Air blows from the South Atlantic high ✓✓
Air blows from the Atlantic Ocean ✓✓ (2 x 2) (4)
(ANY TWO)

1.3.4 Air is moist/greater moisture content/air is unstable ✓✓
Warm air is advected from the Indian ocean ✓✓
Greater amount of latent heat released ✓✓✓✓
The dry air from the western side undercuts the moist air from the east causing rapid uplift of air ✓✓ (2 x 2) (4)
(ANY TWO)

1.3.5 Hail will damage crops/livestock ✓✓
Lightning can cause fires ✓✓
Heavy rainfall causes damage (Accept examples of damage) ✓✓
Overflow of rivers/dams results in large scale flooding ✓✓
Soil becomes saturated ✓✓
Soil erosion is accelerated ✓✓ (2 x 2) (4)
(ANY TWO)

1.4

1.4.1 A temperature inversion means an increase in temperature with an increase in altitude ✓ (1 x 1) (1)
[Concept]

1.4.2 A / 1.4 A ✓ (1 x 1) (1)

1.4.3 Inversion layer is above the escarpment ✓
The base of the inversion is higher above sea level ✓
Moist air is advected onto the plateau ✓
(ANY ONE) (1 x 1) (1)

1.4.4 **SUMMER**

Inversion layer high above the plateau, moist air will reach the interior, resulting in higher rainfall ✓✓

WINTER

Inversion layer is below the plateau, prevents the moist air from reaching the interior, resulting in little or no rain ✓✓ (2 x 2) (4)

1.4.5 **POSITIVE EFFECT**

Good rains will yield good crops ✓✓
Good yield will increase the amount of food available ✓✓
Reasonable food prices ✓✓
Surplus food can be exported ✓✓
Exports will bring more foreign capital ✓✓
Farmers will have a high turnover/make more money ✓✓
Farmers don't have to depend on irrigation which costs lots of money ✓✓
Dams on farms will be full/plenty water available for future use ✓✓
Stock farmers don't have to move stock over long distances in search of water ✓✓

NEGATIVE EFFECTS

Heavy rain will result in large scale flooding. ✓✓
Heavy rain can destroy the crops ✓✓
Hailstones can flatten fields. Destroy farms ✓✓
Lightning can cause fires to farms ✓✓
Decrease in yields ✓✓
Decrease in amount of food ✓✓
Prices of food will increase ✓✓
Food may have to be exported. ✓✓
Subsistence farmers may have to abandon farms and migrate to urban areas ✓✓
Farmers could lose stock ✓✓ (4 x 2) (8)

(FOUR EXPLANATIONS)
(CANDIDATES MUST MENTION BOTH POSITIVE AND NEGATIVE)

1.5

1.5.1 Total area drained by a river and its tributaries ✓ **(Concept)** (1 x 1) (1)

1.5.2 order 3 ✓✓ (1 x 2) (2)

1.5.3 Light/soft rain, high infiltration, less run-off ✓✓
Permeable rocks, greater infiltration, low run-off ✓✓
Porous rocks allow water to infiltrate, less run-off ✓✓
Low evaporation, greater infiltration, less run-off ✓✓
Lots of vegetation intercepts water, less run-off ✓✓
Dry soils absorb water, less run-off ✓✓
Gentle slope, more infiltration, less run-off ✓✓
(ANY TWO) (2 x 2) (4)

1.5.4 C – More streams contribute to greater volume/discharge of water ✓✓
Lower point in river course has a greater volume of water✓✓
Gentle gradient will result in greater chances of flooding✓✓
Valley is wide and shallow will result in greater chance of flooding✓✓
Low water velocity ✓✓
(ANY TWO)

F – Fewer streams contribute to a low volume/discharge of water ✓✓
Upper point in the river course has a lower volume of water ✓✓
Steep gradient will result in less chances of flooding✓✓
Valley is steep and deep and will result in less chance of flooding✓✓
High water velocity ✓✓
(ANY TWO) (4 x 2) (8)

1.6

1.6.1 A - 3 ✓
B - 1 ✓
C - 2 ✓ (3 x 1) (3)

1.6.2 underlying rock structure/geological structure ✓✓ (1 x 2) (2)

1.6.3 Flows away from a central point/resembles spokes of a wheel ✓✓
Flows down a dome ✓✓
Radial pattern ✓✓
(ANY ONE) (1 x 2) (2)

1.6.4 **Similarities**
Tributaries join the main stream at 90°/right angle bends ✓✓
Tributaries are short ✓✓

Differences
In the rectangular stream pattern (A), the main stream has 90° bends ✓✓
The main streams of the trellis stream pattern (C) are straight/parallel✓✓
[ANY ONE SIMILARITY AND ONE DIFFERENCE] (2 x 2) (4)

1.6.5 Dendritic pattern occurs in rocks that are uniform in resistance ✓✓
Dendritic patterns occur in horizontal igneous, sedimentary or metamorphic rocks ✓✓
Landscape 2 has folded sedimentary ✓✓
Landscape 2 occur in areas of alternate hard/resistant and soft rock/ less resistant ✓✓
Landscape 2 has rocks with ridges and valleys ✓✓
[Any TWO] (2 x 2) (4)

[75]

QUESTION 2

2.1

2.1.1 winter ✓

2.1.2 Continental High ✓

2.1.3 anticlockwise ✓

2.1.4 Coastal Low ✓

2.1.5 clear ✓

2.1.6 increase adiabatically ✓

2.1.7 1°C. ✓

2.1.8 Veld fires ✓ (8 x 1) (8)

2.2

2.2.1 B (watershed) ✓

2.2.2 C (delta) ✓

2.2.3 B (slip-off) ✓

2.2.4 A (levee) ✓

2.2.5 D (knick point) ✓

2.2.6 C (antecedent) ✓

2.2.7 B (catchment) ✓ (7 x 1) (7)

2.3

2.3.1 Presence of the tropical cyclone ✓
High temperatures ✓
South Atlantic High and South Indian High away from the coast ✓
Thermal Low dominant on land ✓
Mid-Latitude situated further South ✓
Presence of a trough of low pressure ✓ (1 x 1) (1)
(ANY ONE)

2.3.2 The South Indian is blocking the eastward movement/Presence of a blocking high✓✓ (1 x 2) (2)

2.3.3 The direct sun rays is on the Tropic of Capricorn. ✓✓
The ITCZ moves further south/Pressure belts move south ✓✓
Pressure system(Mid Latitude Cyclone) developed further south ✓✓ (2 x 2) (4)
[ANY TWO]

2.3.4 Waters at this temperature causes the air above the ocean to increase the temperatures ✓✓ become unstable and sustain convection currents/rapid convection to form cumulonimbus clouds✓✓ / High rate of evaporation/sufficient moisture content ✓✓ (1 x 2) (2)
[ANY ONE]

2.3.5 Calm conditions/no wind ✓
No rain /dry conditions ✓
No clouds/clear skies ✓
Low pressure ✓
Ocean temperatures of 26.5°C and above ✓ (2 x 1) (2)
(ANY TWO)

2.3.6 Putting evacuation plans in place for getting people out of danger areas ✓✓
There must be rescue teams to rescue people from flooded areas ✓✓
A good forecasting system is essential to track and predict the path of the tropical cyclone and to issue warnings ✓✓
Organisation of essentials such as first aid kits and batteries for radios, lamps and torches ✓✓
Stock up on canned food items and water supply ✓✓
Place sandbags along rivers and coastal areas to reduce the impact of flooding ✓✓
Erect wooden shutters on windows✓✓
Educate people to stay away from doors and windows. ✓✓
Educate people on keeping away from coastal areas and along rivers ✓✓ (2 x 2) (4)
(ANY TWO)

2.4

2.4.1 Katabatic ✓ (1 x 1) (1)

2.4.2 Natural - fog /mist ✓
Man made – pollution from industries/home/domestic (1 x 1) (1)
(Reduced to ONE mark due to a technical error in the question)

2.4.3 Pietermaritzburg is situated in a valley ✓✓
Katabatic winds that move down the valley slopes at night will bring the pollution into the valley✓✓
Large amount of industries found in the valley produce large amounts of pollution✓✓
Temperature inversion will trap the pollution and not allow it to disperse ✓✓
(ANY TWO) (2 x 2) (4)

2.4.4 Reduces the quality of life. ✓✓
Health hazard/money spent on medical bills ✓✓
Smoke creates more hydroscopic nuclei and result in more acid rain ✓✓
Toxic smoke cause acid rain ✓✓
Acid rain damages buildings/money spent on repairs ✓✓
More clouds will trap more heat people exposed to higher temperatures ✓✓
Heat/smoke/dust will cause eye irritations/headaches ✓✓
Irritability/exposure to fatigue ✓✓
Poor quality air increases respiratory problems ✓✓
Reduced visibility problems may result in higher accidents ✓✓
Very cold temperatures at night ✓✓
People invest in heating systems which is another cost factor ✓✓
Frost may damage crops ✓✓
Frustration of being long hours in traffic. ✓✓ (4 x 2) (8)
[ANY FOUR]

2.5

2.5.1 A ✓ (1 x 1) (1)

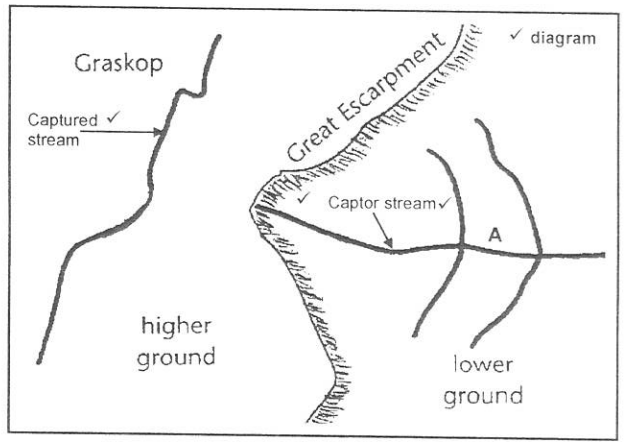
2.5.2 Flowing over a steeper gradient ✓✓
Flowing down the Great Escarpment ✓✓
Larger drainage basin after river capture ✓✓
River **A** is flowing at a lower altitude ✓✓
(ANY ONE) (1 x 2) (2)

2.5.3 Lose its headwaters ✓✓
Volume of water decreases ✓✓
Velocity decreases ✓✓
Too small for its valley ✓✓
A misfit stream will develop ✓✓
Decrease in the size of the drainage basin ✓✓
(ANY TWO) (2 x 2) (4)

2.5.4 The watershed/Great Escarpment has moved in the direction of the river with less erosive power/less energetic/captured stream✓✓ (1 x 2) (2)

2.5.5 Headward erosion/downward erosion/vertical ✓✓ (1 x 2) (2)

2.5.6



(4 x 1) (4)

2.6

2.6.1 farming/mining ✓ (1 x 1) (1)

2.6.2 Agricultural waste washed into the river, this affects the quality of water✓
Chemicals/insecticides/pesticides used are washed into the river will affect the aquatic life✓
Chemicals used in the mines affects ground water fed into the rivers and dam ✓
Ecosystems are affected ✓ (2 x 1) (2)
(ANY TWO)

2.6.3 Drainage basins are life supporting system for millions of people ✓✓
They provide water for agricultural purposes ✓✓
They provide water for industries ✓✓
Water is required for domestic use ✓✓
Provides water for hydro-electricity ✓✓
The water in the rivers/dams are also used for recreational activties/aesthetic ✓✓
Fertile soil on the flood plains support crop farming ✓✓
Drainage basins support a variety of ecosystems ✓✓ (2 x 2) (4)
(ANY TWO)

2.6.4 Fencing or protecting river catchments area/create buffer zones ✓✓
Prevent deforestation ✓✓
Revegetate with indigenous plants/encourage afforestation ✓✓
Protection against soil erosion ✓✓
Treat industrial effluents before releasing into the river ✓✓
Frequent testing of water quality to prevent disruption of ecosystems ✓✓
Treat sewage water before releasing into the river ✓✓
Use natural fertilizers/compost ✓✓
Practice scientific/proper farming methods ✓✓
Monitor water usage by various economic sectors ✓✓
Legislation on water usage ✓✓
Raise public awareness ✓✓
Encourage recycling of water rather than illegal dumping ✓✓
(ANY FOUR) (4 x 2) (8)

[75]

SECTION B: RURAL AND URBAN SETTLEMENTS

QUESTION 3

3.1

3.1.1 Rural hamlet ✓

3.1.2 Land redistribution ✓

3.1.3 Basic need philosophy ✓

3.1.4 Rural ✓

3.1.5 Push factors ✓

3.1.6 Site ✓

3.1.7 Dispersed ✓

3.1.8 Subsistence farming ✓ (8 x 1) (8)

3.2

3.2.1 D (Centripetal forces) ✓

3.2.2 G (Hierarcy) ✓

3.2.3 A (Sphere of influence) ✓

3.2.4 F (Range) ✓

3.2.5 H (Level of urbanisation) ✓

3.2.6 C (Urban sprawl) ✓

3.2.7 E (Urban decay) ✓ (7 x 1) (7)

3.3

3.3.1 Fertile soil ✓
Availability of fresh drinking water at the river ✓
Building material ✓
Transport – roads ✓
Fairly flat land ✓
(ANY TWO) (2 x 1) (2)

3.3.2 **A** is dispersed/nucleated ✓
B is nucleated ✓ (2 x 1) (2)

3.3.3 Large tracks of open fertile land ✓✓
Close proximity of roads ✓✓
Town provide a market for products to be sold ✓✓
Raw materials can be sent for processing to the New Industry ✓✓
Flat land makes mechanization easy ✓✓
Availability of water for irrigation ✓✓
(ANY TWO) (2 x 2) (4)

3.3.4 **Advantages of Nucleated rural settlement patterns**

Safe as community can protect each other ✓✓
Farmers need less capital as they are able to share implements ✓✓
Farmers share ideas ✓✓
All public services are in close proximity e.g. School, Clinics, Police etc. ✓✓

Disadvantages of Nucleated rural settlement patterns

All farmers have to agree on farming methods ✓✓
No individual initiative ✓✓
Properties are fragmented or too small to use mechanization extensively ✓✓
If disasters such as soil erosion, flooding etc occur, many will be affected ✓✓
Smaller farms, smaller profits ✓✓
(**ANY FOUR – Both advantages and disadvantages must be discussed**) (4 x 2) (8)

3.4

3.4.1 Rural-urban migration ✓ (1 x 1) (1)

3.4.2 Droughts ✓
Floods ✓
Soil erosion ✓
Natural disasters like earthquakes, mass movement, etc. ✓
Heavy frost ✓
Insect pests and diseases ✓
(ANY ONE) (1 x 1) (1)

3.4.3 Resources like fertile soil are not being used for the economy ✓✓
Lack of skilled labour as people moved away in search of employment ✓✓
Small businesses are forced to close down because of less buying power and farmers choosing to buy in bulk in bigger cities ✓✓
Ageing of the area as young people leave in search of a 'better' future ✓✓
May result in gender imbalance/population is predominantly female ✓✓
Cycle of stagnation and decline continue in rural area ✓✓
Ghost town develop ✓✓
Services forced to shut down ✓✓
Crime may increase ✓✓
(ANY TWO) (2 x 2) (4)

3.4.4 During the present country side there is still a travelling distance between rural and urban settlements due to low population numbers in urban areas ✓✓
During the future country side, the urban areas has grown considerably and expanded, the border is now near to the rural areas ✓✓ (2 x 2) (4)

3.4.5 Establishment of industries to provide job opportunities ✓✓
Provision of essential services e.g, water, electricity, health ✓✓
Provision of proper infrastructure ✓✓
Provision of recreation and entertainment opportunities ✓✓ (2 x 2) (4)

3.5

3.5.1 An increase in the percentage of people living in urban areas ✓
(CONCEPT) (1 x 1) (1)

3.5.2 Rural functions are being modernized into urban functions through the use of a machine ✓✓
Increase in the number of buildings/height of the buildings ✓✓
Shift from primary to secondary and tertiary activities ✓✓
Shows an increase in the level of urbanisation ✓✓
(**ANY relevant answer related to the sketch**) (1 x 2) (2)

3.5.3 Fertile soil is being removed ✓✓
Natural habitats of species are being removed ✓✓
Biodiversity and ecosystems disturbed ✓✓
Increase of the heat island affect due to artificial production of heat ✓✓
Air pollution increases due to industrialisation ✓✓
Increase in general pollution e.g. water, noise and environmental problems occur ✓✓
(**ANY TWO**) (2 x 2) (4)

3.5.4 Greenbelts help with the controlling of the growth of built-up areas ✓✓
It forms borders and prevents neighbouring towns from merging ✓✓
It preserves the character of each town ✓✓
Provide open spaces and recreation areas to urban dwellers ✓✓
Increase biodiversity and aesthetic appeal ✓✓
Reduces the heat island effect through evapotranspiration✓✓
Reduces the carbon dioxide/increases oxygen supply ✓✓
Muffles traffic noises and city sounds ✓✓
(**ANY FOUR**) (4 x 2) (8)

3.6

3.6.1 Heavy industry ✓ (1 x 1) (1)

3.6.2 Large and heavy products can be found ✓
Large and heavy equipment are being used ✓
It's got high capital intensity ✓
Employs a large number of people ✓
Make use of bulk transport facilities like trains and cargo ships ✓
Produces a lot of air and noise pollution ✓
Occupies a large surface area ✓
Requires large storage space ✓
Generally found on the outskirts of the city ✓
Use of bulky raw materials ✓
(ANY TWO) (2 x 1) (2)

3.6.3 It will cause acid rain and corrode building structures ✓✓
Smoke stick to buildings causing urban decay ✓✓ (2 x 2) (4)

3.6.4 Install filters on the chimneys, which catch most of the dust and pollutants before its released into the air ✓✓
Factories can switch from the use of coal to natural gas or other environmentally friendly energy generators ✓✓
Make the chimney stack higher than the inversion layer ✓✓
Decentralize industries ✓✓
Impose fines for those that do not comply with legislation ✓✓
(**ANY TWO**) (2 x 2) (4)

3.6.5 Heavy industries are causing a lot of air and noise pollution ✓✓
Space is restricted near to the CBD and heavy industries need a lot of space for expansion ✓✓
Land values are very high near the CBD ✓✓
Heavy industries make use of large vehicles that would contribute to traffic congestion in the city ✓✓
Both the functions are incompatible ✓✓ (2 x 2) (4)
(ANY TWO) [75]

TOTAL MARKS: 224

PLEASE NOTE:
DUE TO THE TECHNICAL ERROR IN QUESTION 2.4.2 THE TOTAL MARK HAS BEEN ADJUSTED TO 224.
EDUCATORS NEED TO CONVERT THE MARK TO 225.
CONVERSION: LEARNER MARK x 225
224