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GEOGRAPHY PAPER 1 PAST PAPERS

2022-2018

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basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

GEOGRAPHY

EXAMINATION GUIDELINES

GRADE 12

2021

These guidelines consist of 22 pages.

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TABLE OF CONTENTS

1. INTRODUCTION 3

2. ASSESSMENT IN GRADE 12 4
2.1 PAPER 1 4
2.2 PAPER 2 4

3. ELABORATION OF CONTENT/TOPICS 5
3.1 PAPER 1 5
3.1.1 Climate and Weather 5
3.1.2 Geomorphology: 7
3.1.3 Geographical Skills and Techniques 9

3.2 PAPER 2 10
3.2.1 Rural and Urban Settlements 10
3.2.2 Economic Geography of South Africa 13
3.2.3 Geographical Skills and Techniques 16

3.3 STRUCTURE OF EXAMINATION QUESTION PAPER 18
3.3.1 Details of question papers 18
3.3.2 Cognitive Levels 19

4. GENERAL GUIDELINES FOR MARKING 19

5. CONCLUSION 20

6. ANNEXURE A: ACTION WORDS 21

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1. INTRODUCTION

The Curriculum and Assessment Policy Statement (CAPS) for Geography outlines the nature and purpose of the subject Geography. This guides the philosophy underlying the teaching and assessment of the subject in Grade 12.

The purpose of these Examination Guidelines is to:

- Provide clarity on the depth and scope of the content to be assessed in the Grade 12 National Senior Certificate (NSC) Examination in Geography.
- Assist teachers to adequately prepare learners for the examinations.

This document deals with the final Grade 12 external examinations. It does not deal in any depth with the School-Based Assessment (SBA).

These Examination Guidelines should be read in conjunction with:

- *The National Curriculum Statement (NCS) Curriculum and Assessment Policy Statement (CAPS):* Geography
- The National Protocol of Assessment: *An addendum to the policy document, the National Senior Certificate: A qualification at Level 4 on the National Qualifications Framework (NQF), regarding the National Protocol for Assessment (Grades R–12)*
- The national policy pertaining to the programme and promotion requirements of the National Curriculum Statement, Grades R–12
- *Abridged Amended Section 4 of FET CAPS in Grades 12*

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2. ASSESSMENT IN GRADE 12

2.1 PAPER 1

2.1.1 This is a 3-hour question paper which is written on a SEPARATE DAY from Paper 2.
2.1.2 The mark allocation for this paper is 150.
2.1.3 The question paper consists of two sections, namely SECTION A and SECTION B:
SECTION A: Climate and Weather and Geomorphology (Theory)
SECTION B: Geographical Skills and Techniques

2.1.4 SECTION A consists of **TWO** questions of 60 marks each.
SECTION B consists of **ONE** question of 30 marks.
2.1.5 All **THREE** questions are compulsory.

2.2 PAPER 2

2.2.1 This is a 3-hour question paper which is written on a SEPARATE DAY from Paper 1.
2.2.2 The mark allocation for this paper is 150.
2.2.3 The question paper consists of two sections, namely SECTION A and SECTION B:
SECTION A: Settlement and Economic Geography of South Africa (Theory)
SECTION B: Geographical Skills and Techniques

2.2.4 SECTION A consists of **TWO** questions of 60 marks each.
SECTION B consists of **ONE** question of 30 marks.
2.2.5 All **THREE** questions are COMPULSORY.

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3. ELABORATION OF CONTENT/TOPICS

3.1 PAPER 1

3.1.1 Climate and Weather

Mid-latitude cyclones (frontal depressions, extra-tropical cyclones)

- General characteristics
- Areas of formation
- Conditions necessary for formation
- Stages of development
- Cross-section through a mid-latitude cyclone
- Associated weather patterns:
  - Cold front conditions
  - Warm front conditions
  - Occluded front conditions
- Impact on human activities (social and economic) and the environment
- Possible pre-cautionary and management strategies
- Identification on synoptic weather maps and satellite images:
  - Identification of stages of development on synoptic weather maps
  - Impact of South Indian High and South Atlantic High on movement of the cyclone
  - Reading and interpretation of weather symbols, predicted weather impact

Tropical cyclones

- General characteristics
- Areas of formation and associated terms in different parts of the world
- Factors necessary for the formation
- Stages of development
- Associated weather patterns
- Cross-section through a tropical cyclone (interpretation)
- Impact on human activities (social and economic) and the environment (the impact of the weather associated with tropical cyclones)
- Pre-cautionary and management strategies to manage the effects of tropical cyclones
- Identification on synoptic weather maps and satellite images:
  - Identification of stages of development on synoptic weather maps
  - Reading and interpretation of applicable weather symbols
- Case study of ONE recent tropical cyclone anywhere in the world

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Subtropical anticyclones (high-pressure cells) and the resultant weather over South Africa

- Location and identification of the THREE high-pressure cells that affect South Africa:
  - South Atlantic high-pressure cell
  - South Indian high-pressure cell
  - Kalahari high-pressure cell
- General characteristics of the THREE high-pressure cells
- Influence of anticyclones on South Africa's weather and climate (integration with plateau, inversion layer, ocean currents and ridging of the SAHP)- summer and winter position
- Reading and interpretation of information related to the THREE high-pressure cells on synoptic weather maps
- Development of travelling disturbances associated with anticyclonic circulation:
  - Moisture front and line thunderstorms
  - Coastal low pressure
  - South African berg wind
- Resultant weather and impact (and strategies to reduce the impact) associated with moving disturbances
- Identification of moving disturbances on synoptic weather maps and satellite images
- Reading and interpretation of synoptic weather maps and satellite images that illustrate weather associated with anticyclonic conditions

Valley climates

- Slope aspect:
  - Definition
  - Effect on the distribution of temperature in a valley
- Definition and development of:
  - Anabatic winds
  - Katabatic winds
  - Inversions
  - Thermal belt
  - Frost pockets
  - Radiation fog
- Influence/impact on human activities (economic, social and environmental):
  - Settlement
  - Farming

Urban climates

- Reasons for differences between rural and urban climates
- Urban heat islands:
  - Definition
  - Causes of urban heat islands/factors contributing to higher city temperatures
  - Effects of urban heat islands (economic, social and environmental)
  - Strategies to reduce the urban heat island effect
- Pollution domes:
  - Definition
  - Causes of pollution domes
  - Effects of pollution domes (economic, social and environmental)
  - Strategies to reduce the pollution dome effect

Interpretation of synoptic weather maps (integrate with the relevant content)

- Use of international symbols
- Identification and characteristics of high- and low-pressure cells
- Interpretation of the impact of high- and low-pressure cells
- Reading and interpretation of station models
- Satellite images – reading and interpretation
- Compare satellite images to synoptic weather maps

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3.1.2 Geomorphology

Drainage basins in South Africa

- Concepts (definition, identification and application) of:
  - Drainage basin
  - Catchment area
  - River system
  - Tributary
  - Confluence
  - Watershed
  - Interfluve
  - Source
  - River mouth
  - Surface run-off
  - Infiltration
  - Groundwater
  - Water table
- Types of rivers (definition, identification and application):
  - Permanent
  - Periodic
  - Episodic
  - Exotic
- Identification, underlying rock structure, development and characteristics of the following drainage patterns:
  - Dendritic
  - Trellis
  - Rectangular
  - Radial
  - Centripetal
  - Deranged
  - Parallel
- Definition and impact of factors influencing drainage density:(high/low drainage density):
  - Precipitation
  - Evaporation
  - Soil moisture
  - Vegetation
  - Slope/Gradient
  - Porosity
  - Permeability

  NOTE: The above should be taught with the understanding of infiltration
- Determining stream order (definition, identification and interpretation)
- Discharge of a river: (definition, identification and application)
  - Laminar flow
  - Turbulent flow

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Fluvial processes

- River profiles:
  - Definition, description and associated characteristics including stream load
  - Cross/Transverse profile
  - Longitudinal profile
  - Plan view of both profiles
  - Relationship of both profiles to the stages of a river (upper, middle, lower course)
- Identification, description, formation ~~and~~ significance and impact of fluvial landforms/features:
  - Meander
    - Undercut slope
    - Slip-off slope
  - Oxbow lake
  - Braided stream
  - Flood plain
  - Natural levee
  - Waterfall
  - Rapid
  - Delta
- River grading:
  - Definition (graded and ungraded rivers)
  - Processes involved in a river becoming graded
  - Distinguish between graded and ungraded streams
  - Base level of erosion
  - Temporary base level of erosion
  - Permanent base level of erosion
- River rejuvenation:
  - Definition
  - Reasons for rejuvenation
  - Features of rejuvenation
    - Knickpoint
    - Terraces
    - Valley in a valley
    - Incised/Entrenched meanders
  - Significance of rejuvenated landscapes (economic, social and environmental)
- River capture/Stream piracy:
  - Concepts (definition, identification and application) of:
    - River capture/stream piracy
    - Abstraction
    - Headward erosion
  - Features associated with river capture (identification, description and application):
    - Captor stream
    - Captured stream
    - Misfit stream
    - Elbow of capture
    - Wind gap
  - Impact of river capture on captor stream and captured stream
  - Implications of river capture for human activities, settlements, recreation, agriculture and ecosystems
  - Identification of features associated with river capture on topographic maps
- Superimposed and antecedent drainage patterns (definition, description and causes)

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Catchment and river management

- Definition of river management
- Causes of poor river management
- Importance of managing drainage basins and catchment areas
- Impact of people on drainage basins and catchment areas:
  - River pollution (e.g. eutrophication)
  - Overgrazing
  - Deforestation
  - Human settlement
- Strategies to manage drainage basins/catchment areas
- Case study of one catchment management strategy in South Africa

3.1.3 Geographical Skills and Techniques
(Topographic map and orthophoto map reading and interpretation)

Mapwork Techniques

- Contour lines, contour interval and height and conventional signs
- Compass direction
- True bearing
- Magnetic declination and magnetic bearing
- Map scale – types of scales and comparing the scales of topographic maps, orthophoto maps and aerial photographs
- Calculating straight-line distance in reality
- Calculating area of regular features
- Map reference numbers/Map index
- Alphanumeric reference/Grid reference
- Map coordinates/Fixing position – stating the coordinates
- Calculation and interpretation of average gradient
- Cross-sections – drawing of cross-sections, indicating position of features on cross-sections and identifying features represented by cross-sections
- Intervisibility
- Calculating vertical exaggeration

Topographic Maps

- Use of 1: 50 000 topographic maps:
  - To identify and interpret physical features, e.g. relief, drainage, climate and vegetation
- Application of the Grade 12 Paper 1 content on Climate and Weather and Geomorphology to mapwork
- Interpreting of temperature, rainfall, climate zones and biomes, graphs and tables that are related to the 1: 50 000 topographic map and the 1: 10 000 orthophoto map being assessed
- Identification of different types of rivers, drainage patterns, determining of stream order and drainage density on 1:50 000 topographic map and the 1 : 10 000 orthophoto map being assessed.
- Identification and interpretation of structural landforms and slope elements on 1 : 50 000 topographic map and the 1 : 10 000 orthophoto map being assessed.

Aerial Photographs and Orthophoto Maps

- Oblique and vertical aerial photographs – identifying landforms and features
- Use of size, shape, tone, texture, shadow and patterns to identify features, landforms and activities on photographs and orthophoto maps
- Orientation of orthophoto map with topographic map
- Compare orthophoto map to topographic map

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Geographic Information Systems (GIS)

- GIS (definition)
- Components of GIS
- Sources of information for GIS
- Concepts (definition, identification and application) of:
  - Remote sensing
    - Resolution
    - Pixels
  - Spatial resolution
  - Spatial and attribute data
  - Vector and raster data
  - Spatial objects
    - Points/Nodes
    - Lines
    - Area/Polygons
- Data layering/thematic layering of information
- Data layers (identification and interpretation)
- Data manipulation and analysis:
  - Data manipulation
  - Data integration
  - Buffering
  - Querying
  - Statistical analysis
- Data standardisation
- Data sharing
- Data security
- Application of GIS by the:
  - Government
  - Private sector
- Developing a 'paper GIS' from existing maps, photographs and other sources of information on layers of tracing paper
- Identifying and interpreting concepts using given data such as satellite images, topographic maps, orthophoto maps, aerial photographs, pictures and statistics indicated on graphs and tables

3.2 PAPER 2

3.2.1 Rural and Urban Settlements

Study of settlements

- Definition of:
  - Settlement
  - Site
  - Situation
- Rural and urban settlements
- Classification of settlements according to:
  - Size and complexity
  - Pattern
  - Function

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Rural settlements

- How site and situation affect the location of rural settlements
- Classification of rural settlements according to:
  - Pattern
    - Identification of different patterns
    - Advantages and disadvantages
  - Function
- Identification and reasons for different shapes of rural settlements:
  - Round
  - Linear
  - Crossroad
  - T-shape
- Land use in rural settlements
  - Identification of land use: farming, forestry and conservation

Rural settlement Issues

- Concept of rural-urban migration (definition and application)
  - Push and pull factors
- Definition of rural depopulation:
  - Causes and consequences of rural depopulation on people and the economy
  - Strategies to address rural depopulation
  - Case study that illustrates effects of rural depopulation and strategies to address them
- Social justice issues associated with rural settlements:
- Definition, purpose, challenges in implementation, success stories and impact on communities
  - Access to resources (natural: water and human-made: limited investment and lack of infrastructure)
  - Land reform (land tenure, redistribution and restitution)

Urban settlements

- The origin and development of urban settlements
- Urbanisation of the world population
- Concepts (definition, identification and application) of:
  - Urbanisation
  - Urban growth
  - Urban expansion
  - Urban sprawl
  - Rate of urbanisation
  - Level of urbanisation
  - Counter-urbanisation
- How site and situation affect the location of urban settlements
- Classification (identification, description and purpose) of urban settlements according to function:
  - Central places
  - Trade and transport towns (Break-of-bulk points, Junction towns and Gateway/Gap towns)
  - Specialised towns

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Urban hierarchies

- Concepts (identification, description and interpretation) of:
  - Urban hierarchy
  - Central place
  - Threshold population
  - Sphere of influence
  - Range of goods
- Concepts (identification, description and interpretation) of:
  - Low- and high-order functions/services
  - Low- and high-order centres

Urban structure and patterns

- Internal structure and patterns of urban settlements (includes shape of urban settlements)
- Take note of the difference between land-use (e.g. greenbelt and recreation) and land-use zones
  - Land-use zones, including reasons for location, purpose and characteristics
    - Commercial (CBD, OBD, types of commercial decentralisation)
    - Residential
    - Industrial
    - Transition zone/Zone of decay
    - Rural-urban fringe
  - Factors influencing the morphological structure of a city
    - Street patterns (plan)
    - Building density
  - Urban profiles
    - Concept (definition, identification and application) of urban profile
    - Reasons for shape of urban profile
- Models of urban structure (description and characteristics):
  - Multiple nuclei (Harris and Ullman)
  - Modern American-Western city
  - Third World city
  - South African city
  - Changing urban patterns and land use in South Africa (buffer zones, greenbelts)

Urban settlement issues

- Recent urbanisation patterns/ trends in South Africa
- Urban issues related to rapid urbanisation: (definition, causes, impact, possible solutions like counter-urbanisation)
  - Pollution
  - Urban blight
  - Traffic congestion
  - Lack of planning/urban sprawl
  - Overcrowding
  - Housing shortages
  - Service provision (basic services)
  - Social challenges
- Informal settlements:
  - Concept (definition and identification)
  - Growth of informal settlements
  - Issues associated with informal settlements
  - Strategies to address issues relating to informal settlements
  - Case studies from South Africa and the world
- Case studies on how selected urban areas in South Africa are managing urban challenges

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- Injustice issues in urban areas
  Definition of environmental, social and economic injustice concerns
  - Environmental concerns
    - Air pollution
    - Noise pollution
    - Destruction of ecosystems
  - Economic concerns
    - Poverty
    - Poor public transport systems
  - Social concerns
    - Unequal access to services
    - Unequal access to resources (overview)

3.2.2 Economic Geography of South Africa

NOTE: This section has rotating topics allocated for the next four (4) years. Although these topics must be covered as specified it does not necessarily mean that the particular topic will be examined.

The structure of the economy

- Economic sectors – definitions and examples:
  - Primary
  - Secondary
  - Tertiary
  - Quaternary
- Contribution of economic sectors to the South African economy:
  - Definition, interpretation of, value and contribution to, GNP and GDP
  - Employment (linked to different sectors, interpretation and application)
- Use/Interpretation of statistical and graphical information

Agriculture

- Contribution of agriculture to the South African economy
- Small-scale farming and large-scale farming: definition, characteristics and interpretation
- Main products produced (definition and examples)- home market and export market

NOTE: Instruction at the beginning of the section on Economic Geography

EXAMINATION	YEAR	PRESCRIBED AGRICULTURAL PRODUCT
November 2021 May/June 2022	2021/22	Beef
November 2022 May/June 2023	2022/23	Sugar Cane
November 2023 May/June 2024	2023/24	Maize

- Areas of production on a map, identification and interpretation
- Apply factors that favour and hinder agriculture in South Africa to the product studied
- Contribution of prescribed product to the South African economy
- Food security:
  - Definition of food security and food insecurity
  - Importance of food security in South Africa
  - Factors influencing food security in South Africa
  - Strategies to improve food security in South Africa
- Case studies related to food security and food insecurity in South Africa.

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Mining

- Contribution of mining to the South African economy
- Significance of mining to the development of South Africa
- A case study of one of South Africa's main minerals produced

NOTE: Instruction at the beginning of the section on Economic Geography

EXAMINATION	YEAR	PRESCRIBED MINERAL
November 2021 May/June 2022	2021/22	Coal
November 2022 May/June 2023	2022/23	Gold
November 2023 May/June 2024	2023/24	Platinum

- Location of mineral studied on a map, identification and interpretation
- Apply factors that favour and hinder mining in South Africa to the main minerals above
- Contribution of prescribed mineral to the South African economy

Secondary and Tertiary Sectors

- Contribution of secondary sector to the South African economy
- Types of industries (definition, description, examples and characteristics):
  - Heavy and light
  - Raw material orientated
  - Market orientated
  - Footloose industries
  - Ubiquitous industries
  - Bridge (Break of bulk)
- Factors favouring industrial development in South Africa:
  - Raw materials
  - Labour supply
  - Water supply
  - Energy supply
  - Transport
  - Political intervention
  - Competition
  - Trade
- Factors hindering industrial development in South Africa:
  - Over-concentration
  - Transport
  - Air pollution
  - Labour supply
  - Water supply
  - Energy supply
  - Raw materials
  - Political interference
  - Competition
  - Trade
- South Africa's core/main industrial regions:
  - Gauteng (PWV), Durban-Pinetown, Port Elizabeth-Uitenhage, South-western Cape
  - Location of the above FOUR core industrial regions on a map

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NOTE: Instruction at the beginning of the section on Economic Geography

EXAMINATION	YEAR	PRESCRIBED CORE INDUSTRIAL REGION
November 2021/ May/June 2022	2021/22	Gauteng(PWV)/South-western Cape
November 2022/ May/June 2023	2022/23	Gauteng(PWV)/Durban-Pinetown
November 2023/ May/June 2024	2023/24	Gauteng(PWV)/Port Elizabeth-Uitenhage

NOTE: The TWO prescribed core industrial regions stipulated for each year should be taught.

Key facts to concentrate on with regards to the prescribed core industrial areas

- Map showing their location
- Factors influencing the location of the prescribed industrial region
- Main industrial activities in the prescribed industrial region
- Factors that favour and hinder the continued success of the prescribed core industrial regions studied
- Economic and social impacts of the prescribed core industrial region
- Case studies to illustrate the above

Strategies for Industrial Development

- Overview of apartheid industrial development strategy:
  - The Good Hope Plan
- Overview of post-apartheid industrial development strategies:
  - The Reconstruction and Development Programme (RDP)
  - Growth, Employment and Redistribution (GEAR)
- Industrial Development Zones (IDZs) and spatial development Initiatives (SDIs):
- Case studies of two Industrial Development Zones (IDZs) and Spatial Development initiatives (SDIs):

NOTE: Instruction at the beginning of the section on Economic Geography

EXAMINATION	YEAR	IDZ	SDI
November 2021 May/June 2022	2021/22	Saldanha Bay	West Coast
November 2022 May/June 2023	2022/23	Dube Trade port	Maputo Corridor
November 2023 May/June 2024	2023/24	Coega	Wild coast

NOTE: The ONE prescribed IDZ and SDI stipulated for each year should be taught

Key facts to concentrate on with regard to the prescribed IDZ's and SDI's

- Definition and difference between an IDZ and SDIs
- Map showing the location of prescribed IDZs and SDIs
- Factors influencing the location of the prescribed IDZs and SDIs
- Main industrial activities
- Factors that favour and hinder the development of the prescribed IDZs and SDIs
- Economic and social impacts
- Case studies to illustrate the above

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- Industrial centralisation and decentralisation
  - Definition, causes, advantages/disadvantages and solutions
- Contribution of tertiary activities to the South African economy:
  - Definition of tertiary activities
  - Examples of tertiary activities
  - The role of trade (local and international) in economic development (definition, balance of trade, trade agreements)
  - The role of transport (public/private) in economic development
  - Interpretation of graphs and tables on tertiary activities
  - Case studies of contribution of tertiary activities to the South African economy

The informal sector
- Concept of informal sector employment
- Characteristics of informal sector employment
- Reasons for high informal sector employment in South Africa
- Challenges facing South Africa's informal sector
- Importance/Role of the informal sector in the economy
- Strategies for strengthening the informal sector
- Case studies to illustrate the above in the South African context

3.2.3 Geographical Skills and Techniques
(Topographic map and Orthophoto map reading and interpretation)

Mapwork Techniques
- Contour lines, contour interval and height and conventional signs
- Compass direction
- True bearing
- Magnetic declination and magnetic bearing
- Map scale – types of scales and comparing the scales of topographic maps, orthophoto maps and aerial photographs
- Calculating straight-line distance in reality
- Calculating area of regular features
- Map reference numbers/Map index
- Alphanumeric reference/Grid reference
- Map coordinates/Fixing position – stating the coordinates
- Calculation and interpretation of gradient
- Cross-sections – drawing of cross-sections, indicating position of features on cross-sections and identifying features represented by cross-sections
- Intervisibility
- Calculating vertical exaggeration

Topographic Maps
- Use of 1 : 50 000 topographic maps:
  - To identify and interpret physical features, e.g. relief, drainage, climate and vegetation and how they influence settlement and land-use
  - To identify and interpret cultural features, e.g. settlement, land-use and transport networks
- Application of Grade 12 Paper 2 content on Settlement and Economic Geography to mapwork
- Interpreting of settlement and economic statistics, graphs and tables that are related to the 1 : 50 000 topographic map and the 1 : 10 000 orthophoto map being assessed

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Aerial Photographs and Orthophoto Maps

- Oblique and vertical aerial photographs – identifying landforms and features
- Use of size, shape, tone, texture, shadow and patterns to identify features and activities on photographs and orthophoto maps
- Orientation of orthophoto map with topographic maps
- Compare orthophoto map to topographic maps

Geographic Information Systems (GIS)

- GIS (definition)
- Components of GIS
- Sources of information for GIS
- Concepts (definition, identification and application) of:
  - Remote sensing
    - Resolution
    - Pixels
  - Spatial resolution
  - Spatial and attribute data
  - Vector and raster data
  - Spatial objects
    - Points/Nodes
    - Lines
    - Area/Polygons
- Data layering/thematic layering of information
- Data layers (identification and interpretation)
- Data manipulation and analysis:
  - Data manipulation
  - Data integration
  - Buffering
  - Querying
  - Statistical analysis
- Data standardisation
- Data sharing
- Data security
- Application of GIS by the:
  - Government
  - Private sector
- Developing a 'paper GIS' from existing maps, photographs and other sources of information on layers of tracing paper
- Identifying and interpreting concepts using given data such as satellite images, topographic maps, orthophoto maps, aerial photographs, pictures and statistics indicated on graphs and tables

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3.3 STRUCTURE OF EXAMINATION QUESTION PAPER

3.3.1 Details of question papers

1. Each paper carries 150 MARKS, assessing both theory and mapwork.
2. The duration of each paper is 3 HOURS.
3. The two papers must NOT be written on the same day.
4. Each paper comprises of 3 questions which are ALL COMPULSORY:
   Questions 1 and 2 are found in SECTION A and Question 3 in SECTION B.
   SECTION A:
   - Questions 1 and 2 are based on theory for 60 marks each.
   - Each of the two questions will begin with a variety of short/objective type questions for 15 marks. The format of these questions will vary. This is followed by 3 subquestions of 15 marks each.
   - Each of the two questions will include a paragraph type question for 8 marks, i.e. (4 x 2) = (8). The paragraph question may NOT be answered in point form and will require insight and analytical thinking skills. The paragraph question can be in any of these subquestions
   - A variety of source materials will be used, e.g. satellite images, synoptic weather charts, graphs, statistics, tables, info-graphics, sketch maps, cartoons, photographs, case studies and newspaper articles.
   - Candidates must be able to illustrate all geographical concepts taught. Illustrations could be simple labelled diagrams/sketches or detailed annotated (with explanatory labels) diagrams/sketches.
   - Please note in the 15 mark subquestions content tested could cover more than one aspect within a broad topic.

   SECTION B:
   NOTE: A 1:50 000 topographic map extract and a 1:10 000 orthophoto map extract will be used for testing purposes
   - Question 3 is based on mapwork, i.e. geographical skills and techniques for 30 marks and will be divided as follows:
     - Map skills and calculations (10 marks)
     - Map interpretation (12 marks)
     - GIS (8 marks)

     NOTE: Multiple choice questions can be integrated in all of the above
5. The following instructions and information will appear on the second page of the question paper. Learners should be advised of these instructions from the beginning of the year, as many learners do not adhere to these instructions:
   - The question paper consists of THREE questions.
   - ALL diagrams are included in the annexure.
   - Where possible, illustrate your answers with labelled diagrams.
   - Leave a line between subsections answered.
   - Start EACH question at the top of a NEW page.
   - Number your answers correctly according to the numbering system used in this question paper.
   - Do NOT write in the margins of the ANSWER BOOK.
   - Write neatly and legibly.
   - You may a magnifying glass
   - The unit of measurement must be given in the final answer, where applicable, e.g. 10 km, 4 °C, east.

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3.3.2 Cognitive Levels

The cognitive level rating of both question papers are as follows:

Low order	Middle order	High order
25% (37/38 marks)	50% (75 marks)	25% (37/38 marks)

It is important to note that short objective type questions can also be high-order questions. Paragraph type questions should only be pitched at middle or high-order level as they require analytical and thinking skills.

4. GENERAL GUIDELINES FOR MARKING

- Definitions should be marked looking at the concept and not verbatim as given in textbooks. Mark allocation is (1 x 2) (2)
- Allocate ticks next to the fact/information for which marks are awarded. One tick per mark awarded, e.g. where double marks are allocated there must be two ticks.
- The entire answer must be marked. Do not look at the first facts/information provided and allocate marks, e.g. 0 (zero). There may be correct facts/information later in the answer and marks must be awarded for those.
- Read the answer thoroughly. Correct answers may be provided that are not in the memorandum/marking guidelines. Candidates must be awarded marks for these answers.
- When marking paragraph type answers, ensure that candidates write in full sentences and not answer in point form.
- NO negative marking is allowed.
- Calculations:
- **NOTE**: Calculations do not necessarily have to be tested to the full allocation of marks given in the breakdown
    - Marks may be awarded for providing the correct formula, if the formula is not given.
    - Marks will be awarded for the correct substitution of values in the formula.
    - Marks will be awarded for calculations.
    - When an error is made during substitution into a correct formula, a mark will be awarded for the correct formula, but no further marks will be given.
    - Marks will be awarded for the correct answer.
    - If the answer is incorrect, the calculation must be marked from the top and marks must be awarded up to the point where the candidate calculated incorrectly.
    - If a unit is required, e.g. kilometres, the answer must be marked as incorrect if it is not provided. However, marks must be awarded for all the steps in the calculation leading up the answer.
    - Marks are only awarded for a formula if a calculation has been attempted, i.e. substitutions have been made or a numerical answer is given.
    - All calculations, when not specified in the question, must be calculated to a minimum of ONE decimal place.
    - If a final answer to a calculation is correct, full marks may be awarded if the candidate shows the formula, substitutions and calculation steps, and the unit of measurement is indicated. If the candidate writes the answer only, marks will be awarded for the answer only.

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- **Mark allocations suggested for Grade 12 calculations:**
  - Distance (2 marks) – as per distance calculation in average gradient
    - ✓ for correct measurement on map (cm/mm)
    - ✓ for correct answer if correct measurement is indicated (m/km)
  - Area (5 marks)
    - ✓ for correct measurement of length on map (cm/mm)
    - ✓ for correct measurement of breadth on map (cm/mm)
    - ✓ for correct length in reality
    - ✓ for correct breadth in reality
    - ✓ for correct answer if correct measurement is indicated (m^2/km^2)
  - Average gradient (5 marks)
    - ✓✓ for correct vertical interval
    - ✓ for correct measurement of map distance between two points
    - ✓✓for correct horizontal equivalent
    - ✓✓for correct substitution of values into formula
    - ✓✓for correct answer expressed as a ratio
  - Vertical exaggeration (5 marks)
    - ✓✓for correct conversion to the unit
    - ✓ for correct representation of vertical scale as a ratio
    - ✓✓for correct horizontal scale given as a ratio
    - ✓✓for correct substitution of values into formula – can be a ratio scale or a fraction scale
    - ✓✓for correct answer and unit (in case of vertical exaggeration the unit is <u>times</u>, e.g. 20 times)
  - Magnetic declination (5 marks)
    - ✓✓for correct difference in years
    - ✓✓for correct mean annual change
    - ✓✓for correct total annual change
    - ✓✓for correct calculation with correct unit (magnetic declination of year map was printed + (✓) total annual change)
  - Magnetic bearing (5 + 2 marks)
    - The five marks as indicated above
    - ✓✓for correct measurement of true bearing
    - ✓✓for correct answer

5. CONCLUSION

This Examination Guidelines document is meant to articulate the assessment aspirations espoused in the CAPS document. It is therefore not a substitute for the CAPS document which teachers should teach to.

Qualitative curriculum coverage as enunciated in the CAPS cannot be over-emphasised.

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ANNEXURE A

ACTION WORDS (VERBS/COMMAND WORDS) FOR ASSESSMENT

VERB	MEANING	HOW TO ANSWER
Account	to answer for - explain the cause of - so as to explain why	Full sentences
Analyse	to separate, examine and interpret critically	Full sentences
Annotate	to add explanatory notes to a sketch, map or drawing	Add labels to drawings
Appraise	to form an opinion how successful/effective something is	Full sentences
Argue	to put forward reasons in support of or against a proposition	Full sentences
Assess	to carefully consider before making a judgment	Full sentences
Categorise	to place things into groups based on their characteristics	One-word answers/phrases
Classify	to divide into groups or types so that things with similar characteristics are in the same group - to arrange according to type or sort	One-word answers / phrases
Comment	to write generally about	Full sentences
Compare	to point out or show both similarities and differences	Full sentences
Construct	to draw a shape	A diagram is required
Contrast	to stress the differences, dissimilarities, or unlikeness of things, qualities, events or problems	Full sentences
Create	to develop a new or original idea	Full sentences
Criticise	to make comments showing that something is bad or wrong	Full sentences
Decide	to consider something carefully and decide what should be done	Full sentences
Defend	to say things to protect something	Full sentences
Define	to give the concise and clear meaning	Full sentences
Devise	to invent a method to do something	Full sentences
Demonstrate	to show or make clear - to illustrate and explain - to prove by reasoning and evidence - examples can be given	Full sentences
Describe	to list the main characteristics of something - give an account of	Full sentences
Develop	to successfully develop and create a new method/idea	Full sentences
Differentiate	to show the difference between things	Full sentences
Discriminate	to recognise the difference between things	Full sentences
Discuss	to examine by means of argument, presenting both sides and reaching a conclusion	Full sentences
Distinguish	to recognise the difference between things	Full sentences
Draw	to show by means of a sketch	A diagram is required
Evaluate	to make an appraisal or express an opinion concerning the value - to define, analyse and discuss	Full sentences
Examine	to look at something carefully - to analyse and discuss	Full sentences
Explain	to make clear, interpret and spell out the material you present	Full sentences

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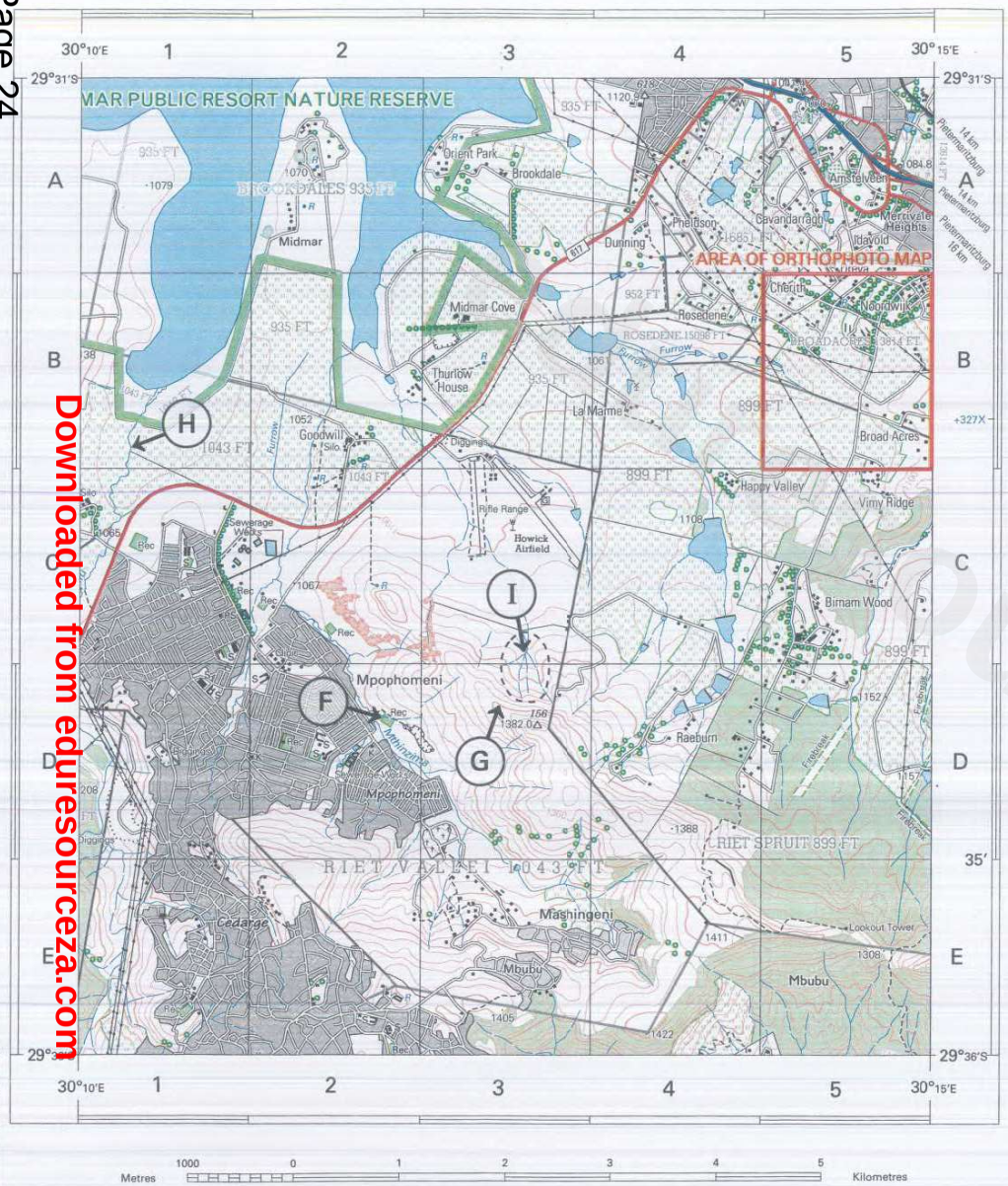
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VERB	MEANING	HOW TO ANSWER
Find	to make a formal decision about something	Full sentences
Formulate	to express an idea/opinion in a carefully organised way	Full sentences
Give	to state facts without discussions	One-word answers
Identify	to give the essential characteristics of - to name	One-word answers
Illustrate	to show what something is like - to show that something is true	Full sentences
Interpret	to give an explanation of - to give the meaning of	Full sentences
Investigate	to try to find the facts about something	Full sentences
Justify	to prove or give reasons for decisions or conclusions, using logical argument	Full sentences
List	to write an itemised series of concise statements	One-word answers
Locate	to find the exact place where something is	One-word answers
Mention	providing relevant facts	Full sentences
Name	to state something - give, identify or mention	One-word answers
Outline	give a summary, using main points and leaving out minor details	Full sentences
Plan	to think carefully about a series of actions that you need to take in order to achieve something	Full sentences
Predict	to say what you think will happen - to foretell - to say in advance	Full sentences
Prioritise	to place in order of importance	One-word answers
Propose	to suggest a plan - to make a formal suggestion	Full sentences
Provide	to state facts without discussions	Full sentences/ one-word answers
Question	to have or express doubts about something	Full sentences
Rate	to consider that something has a particular quality or achieved a particular quality/level	Full sentences/one-word answers
Recall	to remember something	Full sentences/one-word answers
Recognise	to accept that something is true or important - to give approval to something	Full sentences/one-word answers
Recommend	to advise that something should be done	Full sentences
Report	to produce an official statement or written document	Full sentences
Select	to choose something from a greater whole	One-word answers
Sketch	to illustrate with a simple drawing	A diagram is required
Solve	to find a solution to something that is causing difficulties	Full sentences
State	to present information plainly without discussion	One-word answers
Suggest	to propose an explanation or solution	Full sentences
Show	to make clear - to point out - to explain	Full sentences
Support	to show that an idea/statement is true	Full sentences
Tabulate	to group like terms or activities under specific headings	One-word answers/phrases
Tell	to recognise something as a result of knowledge	One-word answers
Test	to examine something to find out if it is satisfactory or has a specific quality	Full sentences
Use	to do something using a specific skill or method	Full sentences
Value	to consider the importance/worth of something	Full sentences
Verify	to check/prove that something is correct	Full sentences
Write	to create a formal document	Full sentences

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EXTRACT FROM 2930CA MERRIVALE

1:50 000



Mean magnetic declination 24°42' West of True North (November 2016).
Mean annual change 9' Westwards (Nov. 2016 - Oct. 2017).

CONTOUR INTERVAL 20 METRES / KONTOERTUSSENRUIMTE 20 METER

REFERENCE

- National Freeway; National Route
- Arterial Route
- Main Road
- Secondary Road; Bench Mark
- Other Road; Bridge
- Track and Hiking Trail
- Railway; Station or Siding
- Other Railway; Tunnel
- Embankment; Cutting
- Power Line
- Built-up Area (High, Low Density)
- Buildings; Ruin
- Post Office; Police Station; Store
- Place of Worship; School; Hotel
- International Boundary and Beacon
- Provincial Boundary
- Protected Area
- Perennial River
- Perennial Water
- Non-perennial River
- Non-Perennial Water
- Dry Water Course
- Dry Pan
- Marsh and Vlei
- Pipeline (above ground)
- Water Tower; Reservoir; Water Point
- Coastal Rocks
- Prominent Rock Outcrop
- Fence; Wall
- Windpump; Monument
- Communication Tower
- Mine Dump; Excavation
- Trigonometrical Station; Marine Beacon
- Lighthouse and Marine Light
- Cemetery; Grave
- Erosion; Sand
- Woodland
- Cultivated Land
- Orchard or Vineyard
- Recreation Ground
- Row of Trees
- Original Farms

EXTRACT FROM 2930 CA 5 MERRIVALE ortho - rectified image

1:10 000



CONTOUR INTERVAL 5 METRES - KONTOERTUSSENRUIMTE 5 METER

VERKLARING

- Nasionale Deurpad; Nasionale Roete
- Hoofverkeersroete
- Hoofpad
- Sekondêre Pad; Hoogtemerk
- Ander Pad; Brug
- Dowwe Pad en Voetslaanpad
- Spoorweg; Stasie of Sylyn
- Ander Spoorweg; Tonnel
- Opvulling; Deurgrawing
- Kraglyn
- Beboude Gebied (Hoë, Lae Digtheid)
- Geboue; Murasie
- Poskantoor; Polisiestasie; Winkel
- Plek van Aanbidding; Skool; Hotel
- Internasionale Grens en Baken
- Provinsiale Grens
- Bewarings Gebied
- Standhoudende Rivier
- Standhoudende Water
- Nie-standhoudende Rivier
- Nie-standhoudende Water
- Droë Loop
- Droë Pan
- Moeras en Vlei
- Pylpyn (bo die grond)
- Watertoring; Reservoir; Waterpunt
- Kuslynrotse
- Prominente Klipbank
- Draadheining; Muur
- Windpomp; Monument
- Kommunikasietoring
- Mynhoop; Uitgrawing
- Peilbaken; Seevaartbaken
- Vuurtoring en Seevaartlig
- Begraafplaas; Graf
- Erosie; Sand
- Beboste Gebied
- Bewerkte Land
- Boord of Wingerd
- Ontspanningsterrein
- Rye Bome
- Oorspronklike Plase

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basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

GEOGRAPHY P1

NOVEMBER 2022

MARKS: 150

TIME: 3 hours

This question paper consists of 20 pages.

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INSTRUCTIONS AND INFORMATION

1. This question paper consists of TWO SECTIONS.

   SECTION A
   QUESTION 1: CLIMATE AND WEATHER (60)
   QUESTION 2: GEOMORPHOLOGY (60)

   SECTION B
   QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES (30)

2. Answer ALL THREE questions.

3. All diagrams are included in the QUESTION PAPER.

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. Do NOT write in the margins of the ANSWER BOOK.

8. Draw fully labelled diagrams when instructed to do so.

9. Answer in FULL SENTENCES, except when you have to state, name, identify or list.

10. Units of measurement MUST be indicated in your final answer, e.g. 1 020 hPa, 14 °C and 45 m.

11. You may use a non-programmable calculator.

12. You may use a magnifying glass.

13. Write neatly and legibly.

SPECIFIC INSTRUCTIONS AND INFORMATION FOR SECTION B

14. A 1 : 50 000 topographic map 2930CA MERRIVALE and a 1 : 10 000 orthophoto map 2930 CA 5 MERRIVALE are provided.

15. The area demarcated in RED/BLACK on the topographic map represents the area covered by the orthophoto map.

16. Marks will be allocated for steps in calculations.

17. You must hand in the topographic and orthophoto map to the invigilator at the end of this examination session.

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SECTION A: CLIMATE AND WEATHER AND GEOMORPHOLOGY

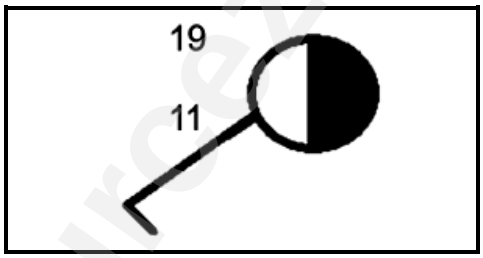
QUESTION 1: CLIMATE AND WEATHER

1.1 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 numbers (1.1.1 to 1.1.8) in the ANSWER BOOK, e.g. 1.1.9 D.

1.1.1 Lines that join places of equal atmospheric pressure on a synoptic weather map are known as …

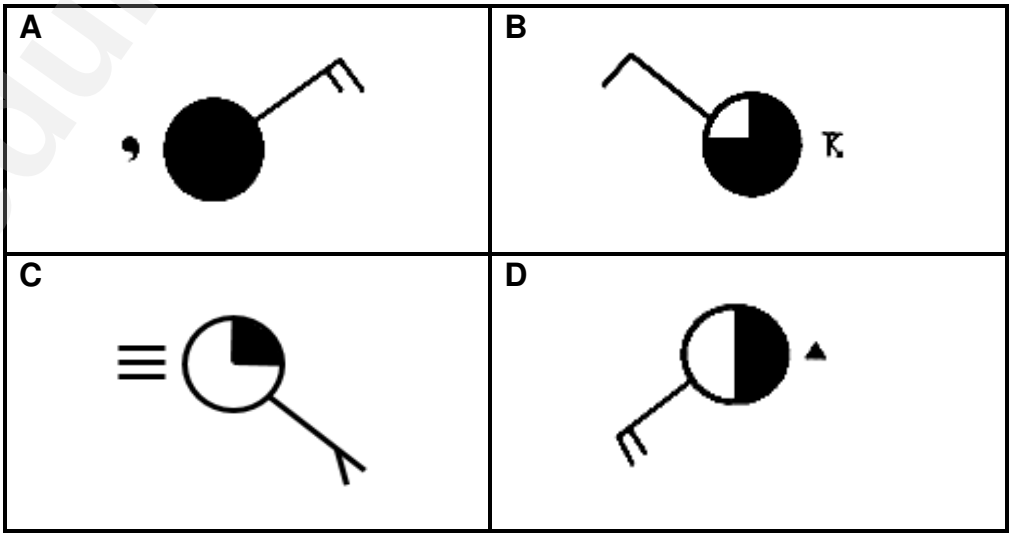
A isolines.
B isotherms.
C isohyets.
D isobars.

1.1.2 The wind direction represented by the station model below is …



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

1.1.3 Which ONE of the station models below shows drizzle as a form of precipitation?

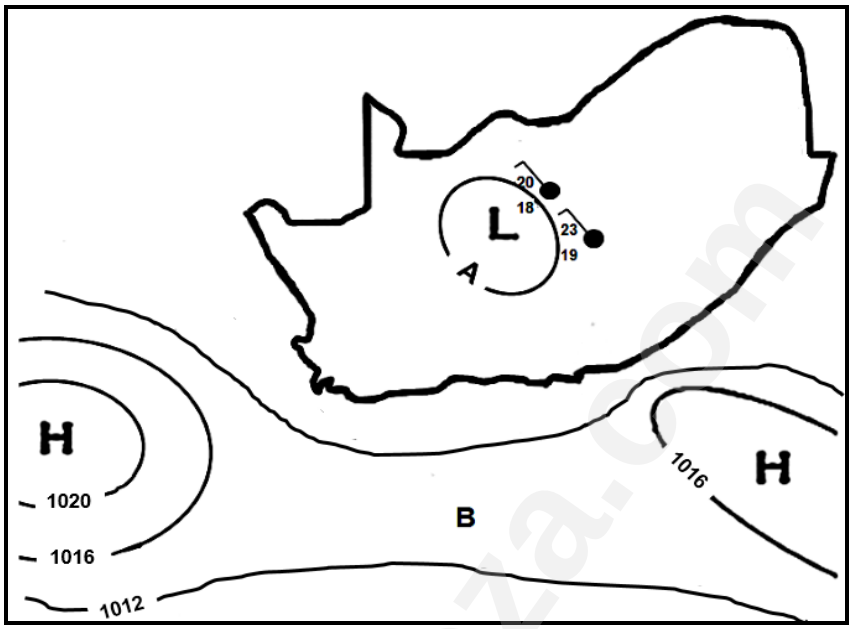


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Refer to the sketch below to answer QUESTIONS 1.1.4 to 1.1.6.



[Source: Examiner's own sketch]

1.1.4 The atmospheric pressure reading at **A** is … hPa.

A 1004
B 1008
C 1012
D 1016

1.1.5 Feature **B** is known as a …

A ridge.
B trough.
C wedge.
D saddle.

1.1.6 The low-pressure cell over the interior has caused north-westerly winds because of … circulation and overcast conditions due to … of air.

(i) clockwise
(ii) anticlockwise
(iii) descending
(iv) ascending

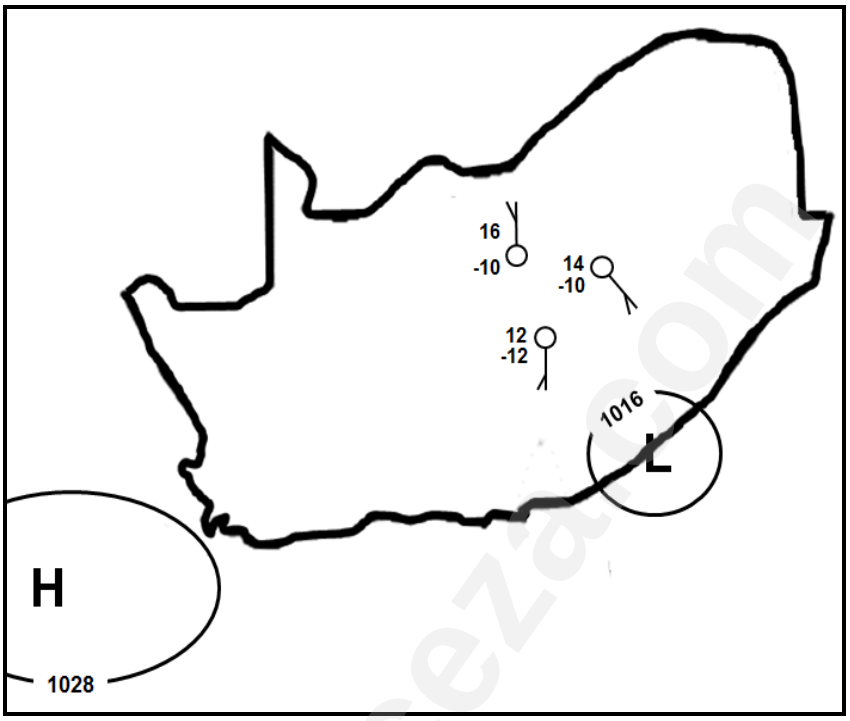
A (i) and (iii)
B (ii) and (iv)
C (i) and (iv)
D (ii) and (iii)

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Refer to the sketch below to answer QUESTIONS 1.1.7 and 1.1.8.



[Source: Examiner's own sketch]

1.1.7 The low-pressure cell in the sketch is a …

A mid-latitude cyclone.
B tropical depression.
C coastal low.
D thermal low.

1.1.8 The interior of South Africa experiences … conditions with a greater temperature variation due to … climatic conditions.

(i) unstable
(ii) stable
(iii) continental
(iv) maritime

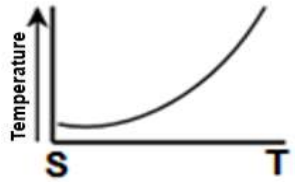
A (i) and (iii)
B (ii) and (iv)
C (i) and (iv)
D (ii) and (iii) (8 x 1) (8)

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1.2 Complete the statements in COLUMN A with the options in COLUMN B. Write down only **Y** or **Z** next to the question numbers (1.2.1 to 1.2.7) in the ANSWER BOOK, e.g. 1.2.8 Y.

	COLUMN A		COLUMN B
1.2.1	Increased absorption of heat in urban areas is due to … surfaces.	**Y** **Z**	natural artificial
1.2.2	The intensity of multiple reflections of heat is increased due to the … dimension of buildings.	**Y** **Z**	vertical horizontal
1.2.3	The air pressure will generally be … in urban areas than in rural areas.	**Y** **Z**	lower higher
1.2.4	The wind speed in urban areas is … than in rural areas.	**Y** **Z**	faster slower
1.2.5	The relative humidity over urban areas is lower than over rural areas due to … evaporation.	**Y** **Z**	more less
1.2.6	Urban areas have a higher frequency of precipitation than rural areas due to …	**Y** **Z**	hygroscopic particles building structures
1.2.7	Temperature graph … represents the change in temperature from the urban areas (**S**) to the rural areas (**T**).	**Y** **Z**	 

(7 x 1) (7)

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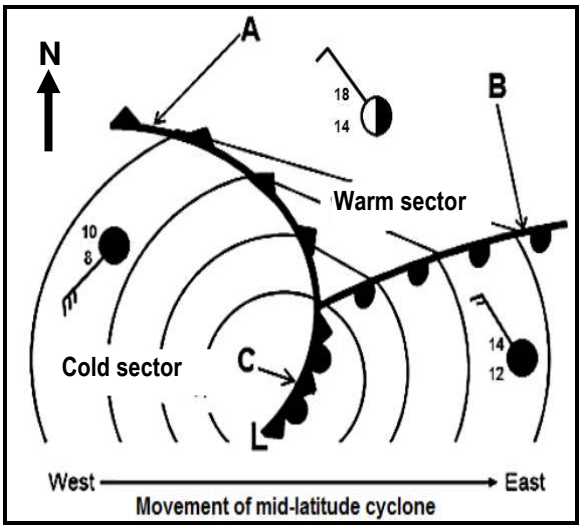
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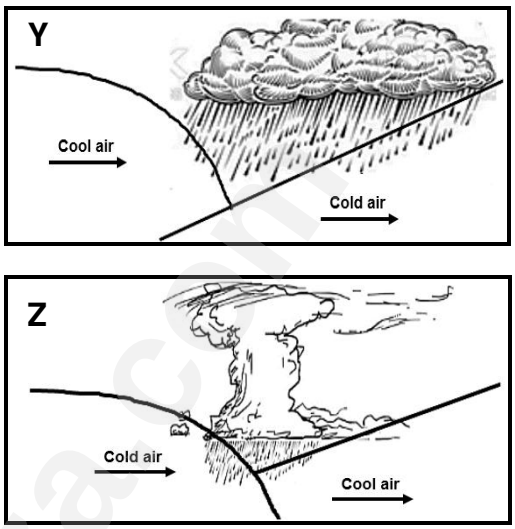
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1.3 Refer to the sketches below on a mid-latitude cyclone.

PLAN VIEW



CROSS-SECTIONS



[Source: Examiner's own sketch]

1.3.1 Name the wind belt that causes the easterly movement of the mid-latitude cyclone. (1 x 1) (1)

Refer to the plan view.

1.3.2 Identify front **A**. (1 x 1) (1)

1.3.3 Which ONE of fronts **A** or **B** is moving faster? (1 x 1) (1)

1.3.4 Give a reason for your answer to QUESTION 1.3.3. (1 x 2) (2)

1.3.5 Give evidence from the sketch that the mid-latitude cyclone is found in the Southern Hemisphere. (1 x 2) (2)

Refer to the cold front occlusion **C** and the cross-sections.

1.3.6 (a) Which ONE of the cross-sections **Y** or **Z** represents the cold front occlusion at **C**? (1 x 2) (2)

(b) Give evidence that **C** is a cold front occlusion. (1 x 2) (2)

(c) Explain how the cold front occlusion developed. (2 x 2) (4)

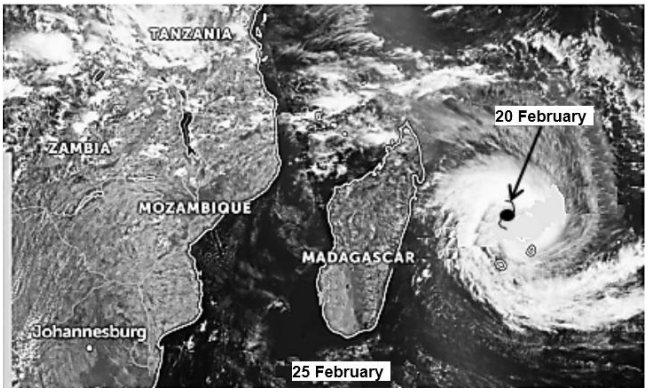
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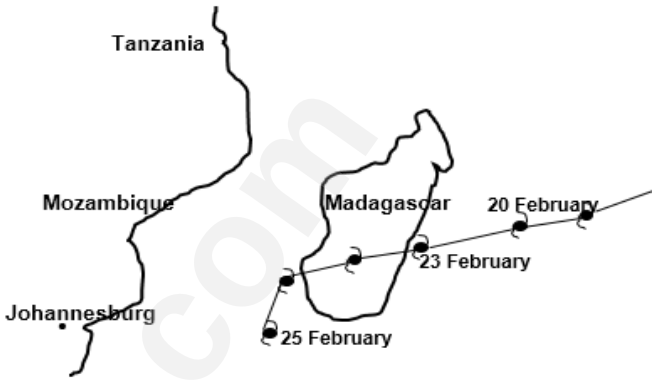
1.4 Refer to the infographic below on Tropical Cyclone Batsirai.

Satellite image of Tropical Cyclone Batsiria



[Adapted from https://twitter.com/kwang/poon/status]

Path of Tropical Cyclone Batsiria



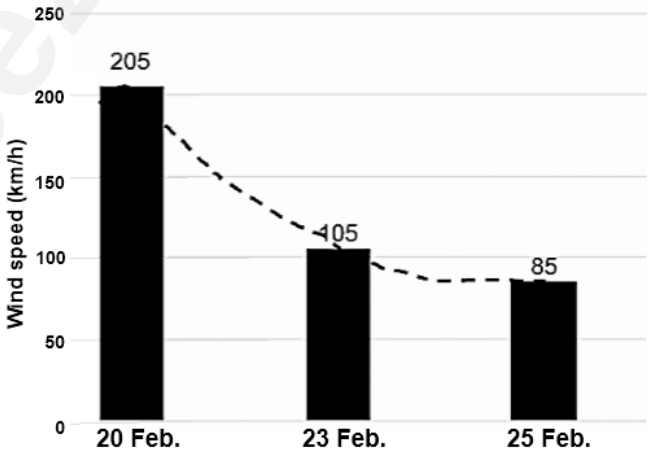
[Source: Examiner's own sketch]

Tropical Cyclone Batsirai – February 2022

Tropical Cyclone Batsirai intensified and moved westward across the South Indian Ocean. The forward movement was approximately 19 kilometres per hour (km/h). Batsirai made landfall on Saturday night. Tropical Cyclone Batsirai's wind and rains caused considerable damage to roads and transport links, leaving some of the hardest-hit areas inaccessible. In addition, Tropical Cyclone Batsirai caused storm surges.

[Adapted from https://reliefweb.int/disaster/tc-2022-000160-mdg]

Wind speed associated with Tropical Cyclone Batsirai



[Source: Examiner's own sketch]

1.4.1 Give the date on which Tropical Cyclone Batsirai reached the mature stage. (1 x 1) (1)

1.4.2 According to the infographic, Tropical Cyclone Batsirai moved westward across the South Indian Ocean. Give ONE reason for this movement. (1 x 2) (2)

1.4.3 Suggest TWO reasons for the large decrease in wind speed between 20 and 25 February 2022. (2 x 2) (4)

1.4.4 How could storm surges negatively impact the physical environment on the east coast of Madagascar? (4)

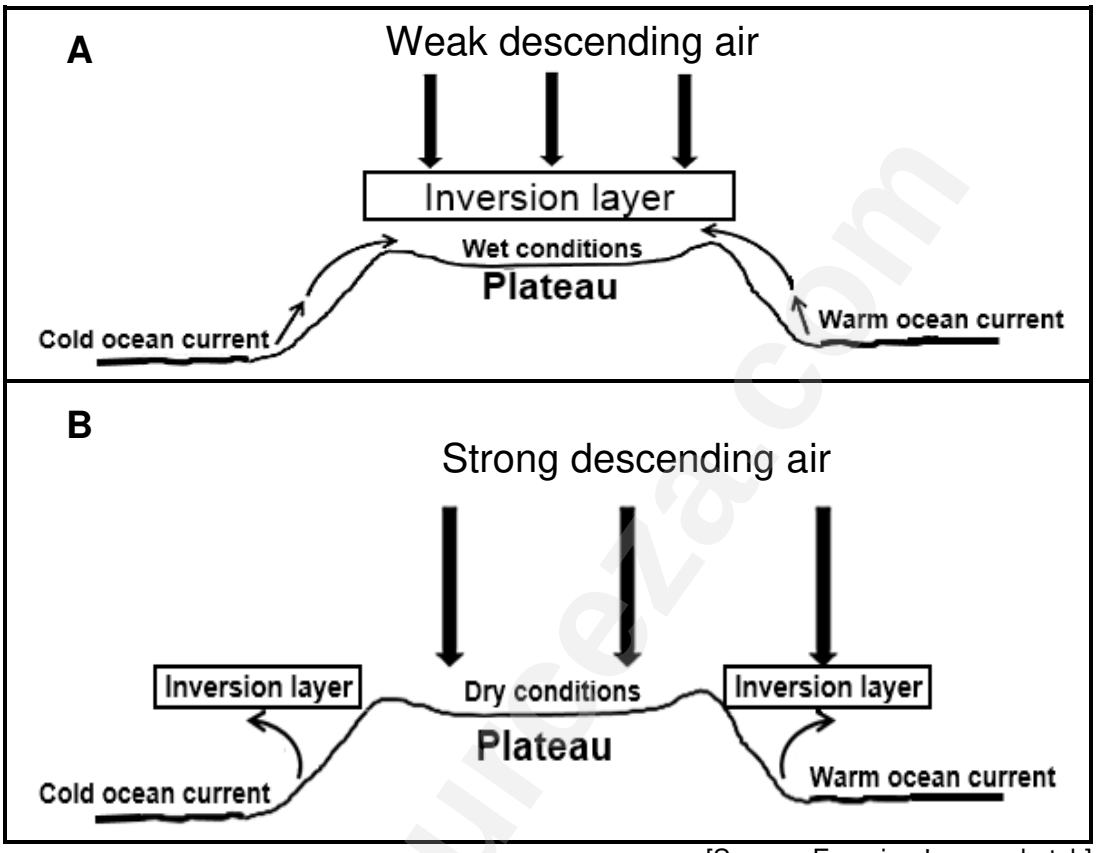
1.4.5 Explain the importance of monitoring tropical cyclones like Batsirai for Madagascar. (2 x 2) (4)

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1.5 Refer to the sketches below showing the changes in the position of the inversion layer over South Africa.



[Source: Examiner's own sketch]

Refer to sketch **A**.

1.5.1 Identify the season illustrated in sketch **A**. (1 x 1) (1)

1.5.2 Give a reason for your answer to QUESTION 1.5.1. (1 x 2) (2)

Refer to sketch **B**.

1.5.3 Identify TWO factors, visible in the sketch, which influence the climate of South Africa. (2 x 1) (2)

1.5.4 Explain the role played by descending air in the development of the inversion layer. (1 x 2) (2)

Refer to sketches **A** and **B**.

1.5.5 In a paragraph of approximately EIGHT lines, describe how the position of the inversion layer in sketches **A** and **B** influences the amount of rainfall in the interior of South Africa. (4 x 2) (8)

[60]

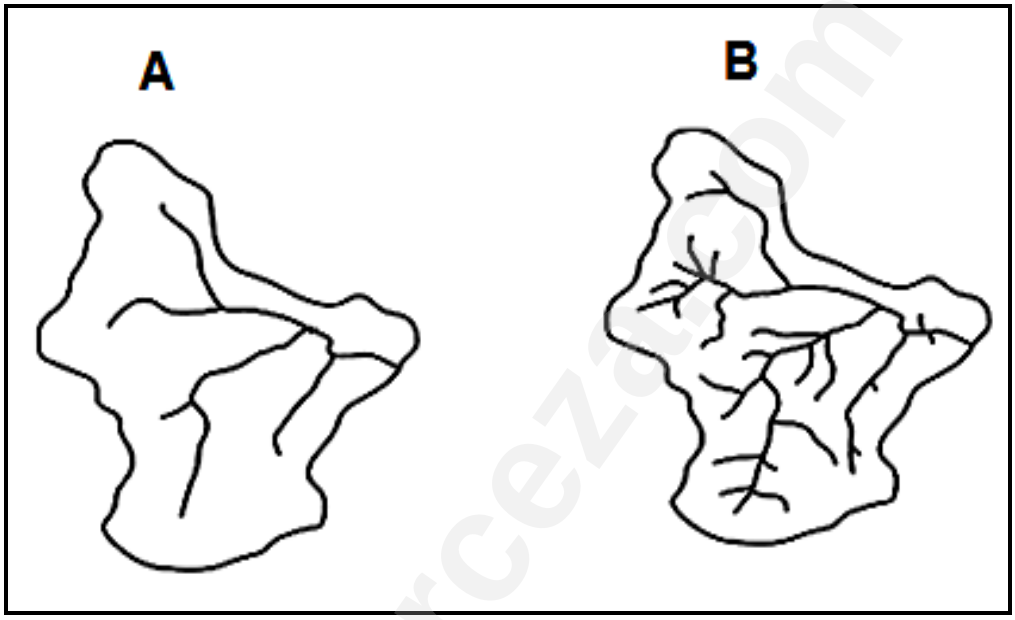
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QUESTION 2: GEOMORPHOLOGY

2.1 Refer to drainage basins **A** and **B** below which have different drainage densities. Match the descriptions in QUESTIONS 2.1.1 to 2.1.8 with **A** and **B**. Write down only **A** or **B** next to the question numbers (2.1.1 to 2.1.8) in the ANSWER BOOK, e.g. 2.1.9 **A**.



[Source: https://www.google.com/search?q=drainage basins]

2.1.1 Higher drainage density

2.1.2 Lower infiltration rate

2.1.3 Denser vegetation

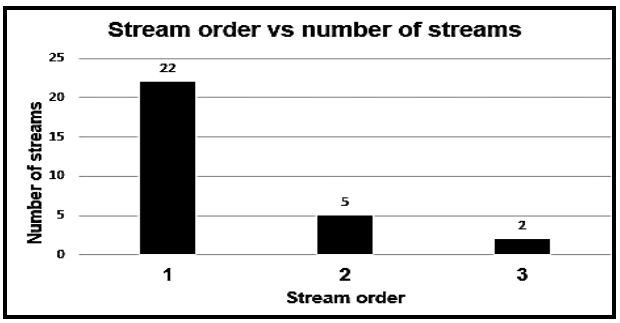
2.1.4 Higher soil moisture content

2.1.5 Developed on the least resistant (soft) rock

2.1.6 Lower degree of permeability

2.1.7 Higher stream order

2.1.8 The graph below represents this drainage basin.



(8 x 1) (8)

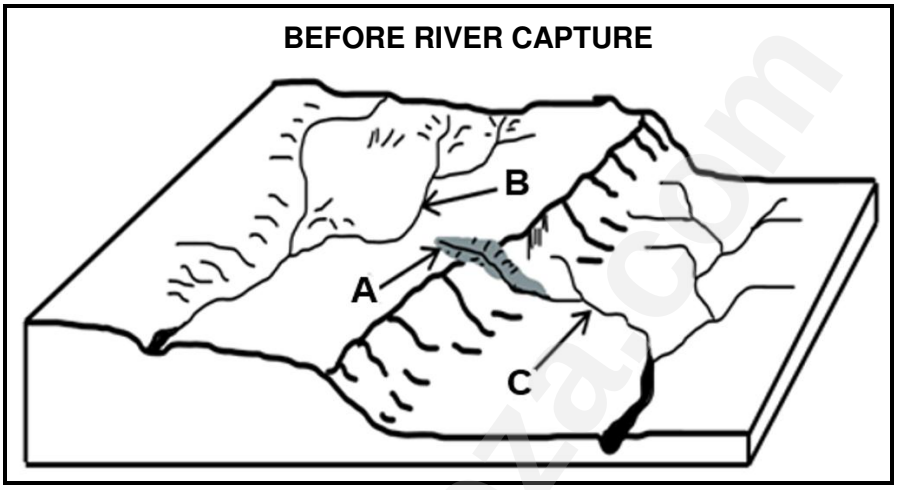
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2.2 Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A–D) next to the question numbers (2.2.1 to 2.2.7) in the ANSWER BOOK, e.g. 2.2.8. D.

Refer to the sketch below to answer QUESTIONS 2.2.1 to 2.2.3.



[Source: Examiner's own sketch]

2.2.1 … erosion at **A** is responsible for the lengthening of the river.

A Vertical
B Lateral
C Sheet
D Headward

2.2.2 The landform caused by the type of erosion in QUESTION 2.2.1 is a …

A spur.
B rapid.
C gorge.
D meander.

2.2.3 River **C** will eventually capture river **B** because it flows on a … gradient and over … rock.

(i) gentler
(ii) steeper
(iii) softer
(iv) harder

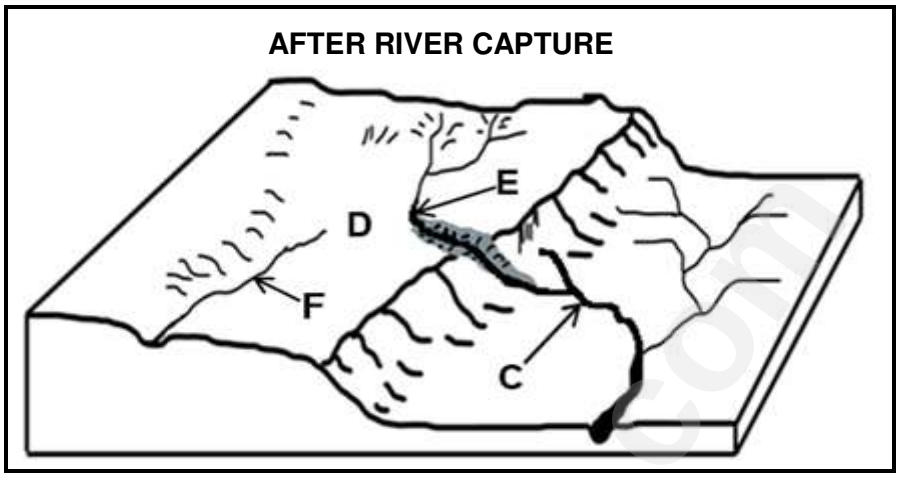
A (i) and (iii)
B (i) and (iv)
C (ii) and (iii)
D (ii) and (iv)

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Refer to the sketch below to answer QUESTIONS 2.2.4 to 2.2.7.



[Source: Examiner's own sketch]

2.2.4 River **C** is known as the … stream.

A captive
B captor
C captured
D misfit

2.2.5 Feature **D** is referred to as …

A a waterfall.
B river gravel.
C a wind gap.
D an elbow of capture.

2.2.6 The resultant fluvial landform of river capture at **E** is a/an …

A meander.
B waterfall.
C misfit stream.
D oxbow lake.

2.2.7 The characteristics of river **F** are that it flows in a … valley and the volume of water …

(i) wide
(ii) narrow
(iii) increases
(iv) decreases

A (i) and (iii)
B (ii) and (iv)
C (i) and (iv)
D (ii) and (iii)

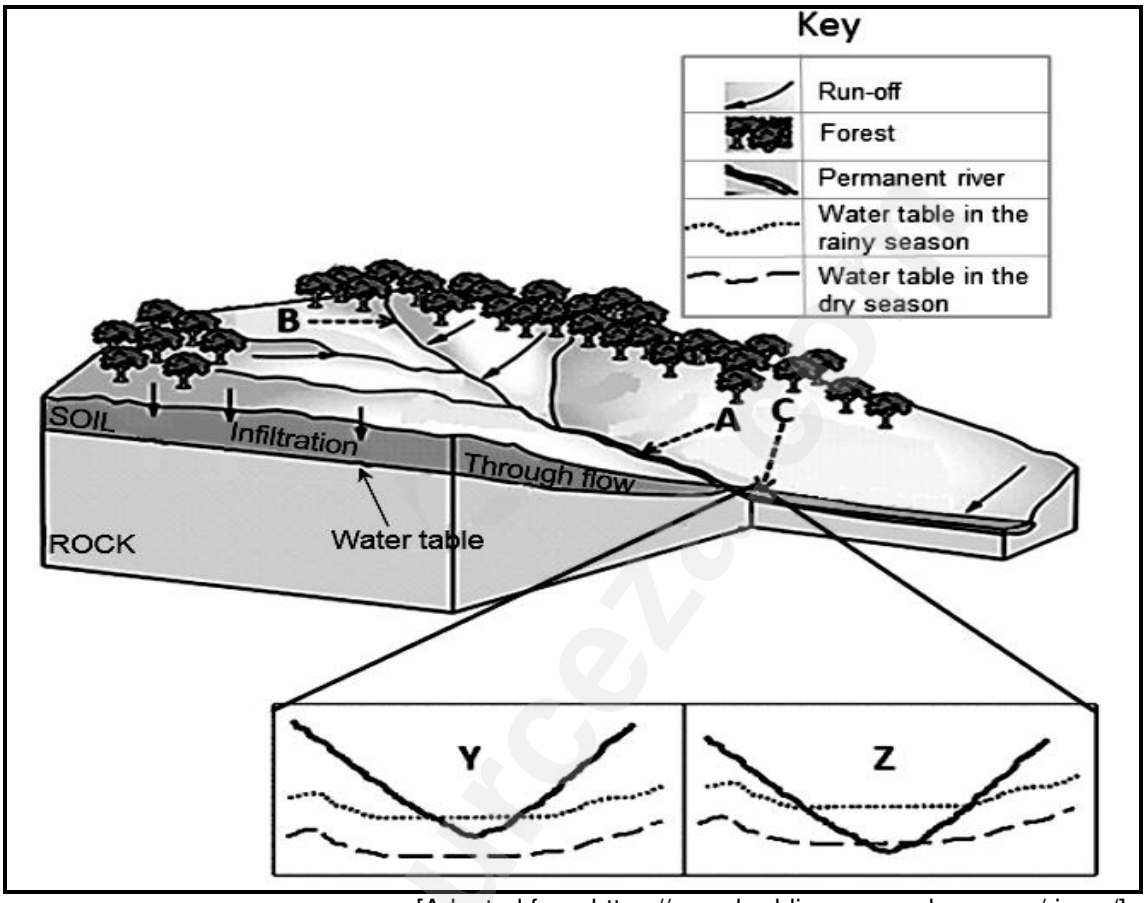
(7 x 1) (7)

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2.3 Refer to the drainage basin below.



[Adapted from https://www.buddinggeographers.com/rivers/]

2.3.1 The river illustrated in the sketch is (permanent/periodic). (1 x 1) (1)

2.3.2 State TWO characteristics of the river system evident in the sketch. (2 x 1) (2)

2.3.3 Give evidence from the sketch that the surface run-off is greater at **A** than at **B**. (2 x 2) (4)

2.3.4 Refer to **C**.

(a) Which ONE of the cross-sections **Y** or **Z** represents the river at point **C**? (1 x 2) (2)

(b) Give a reason for your answer to QUESTION 2.3.4(a). (1 x 2) (2)

2.3.5 How will a decrease in precipitation affect the following:

(a) Water table (1 x 2) (2)

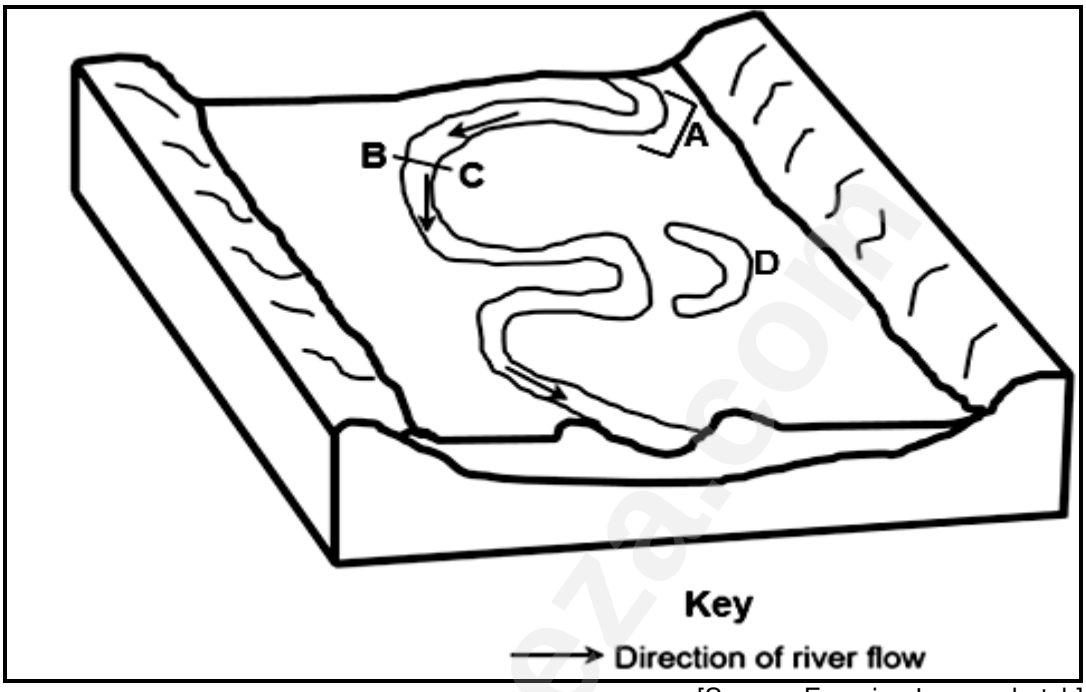
(b) Type of river (1 x 2) (2)

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2.4 Refer to the sketch on fluvial landforms below.



[Source: Examiner's own sketch]

2.4.1 The fluvial landforms, illustrated in the sketch, are mainly found in the (middle/lower) course. (1 x 1) (1)

2.4.2 Identify fluvial landform **A** on the sketch. (1 x 1) (1)

2.4.3 (a) Draw a rough cross-section from **B** to **C**. (2 x 1) (2)

(b) Will erosion take place at **B** or **C**? (1 x 1) (1)

(c) Give a reason for your answer to QUESTION 2.4.3(b). (1 x 2) (2)

2.4.4 In a paragraph of approximately EIGHT lines, describe the processes that resulted in the change of fluvial landform **A** to an ox-bow lake at **D**. (4 x 2) (8)

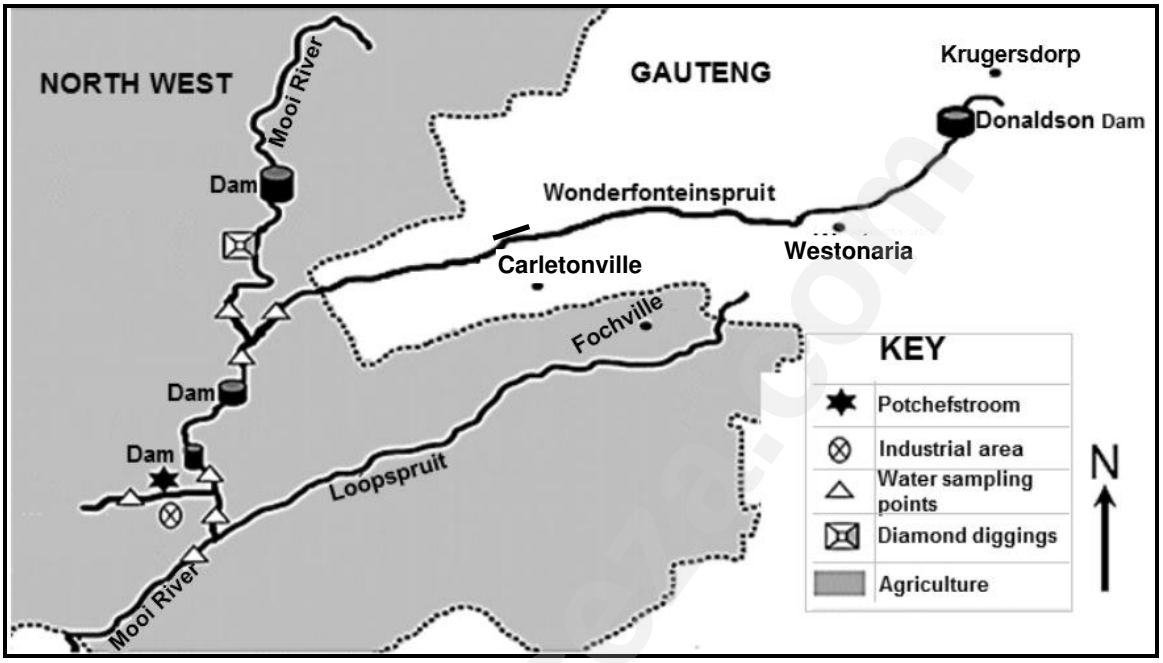
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2.5 Refer to the case study below on catchment and river management.

MOOI RIVER CATCHMENT AREA



The Mooi River has two major tributaries, namely Wonderfonteinspruit and Loopspruit. The Donaldson Dam in the upper Wonderfonteinspruit receives water from various sources, such as sewage facilities, mining areas and informal settlements, that has a negative impact on the quality of water.

The Mooi River flows south, through agricultural land, from where it eventually joins the Vaal River. The main types of land use in the Mooi River catchment area are crop farming and grazing.

According to the Department of Water Affairs (DWA), irrigation and farming are the two major activities polluting the waters of the Mooi River drainage basin, following the removal of natural vegetation. Some small-scale diamond diggings also occur along the Mooi River, destroying the flood plain and riparian (wetlands next to river banks) habitats.

[Adapted from a case study by S Barnard, A Venter and CE van Ginkel]

2.5.1 What does the abbreviation *DWA* in the extract stand for? (1 x 1) (1)

2.5.2 Refer to the case study and identify TWO sources that negatively impact the quality of water of the Donaldson Dam. (2 x 1) (2)

2.5.3 Why are the water sampling points (testing points) important? (1 x 2) (2)

2.5.4 How do agricultural practices in the Mooi River catchment area cause water pollution of the river system? (2 x 2) (4)

2.5.5 Suggest THREE sustainable strategies that can be implemented in order to maintain the quality of water in the Mooi River catchment area. (3 x 2) (6)

[60]

TOTAL SECTION A: 120

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SECTION B

QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES

GENERAL INFORMATION ON MERRIVALE



Coordinates: 29°31'S; 30°14'E

Merrivale is a town in the Umgungundlovu District Municipality in KwaZulu-Natal. It is 145 km north-west of Durban and 5 km south-east of Howick.

Merrivale experiences warm wet summers and dry winter seasons. The temperatures between winter and summer range from 5 °C to 32 °C. The topography within the surroundings of Merrivale varies in elevation from 1 018 metres to 2 308,8 metres above sea level.

[Adapted from https://en.wikipedia.org/wiki/Merrivale]

The following English terms and their Afrikaans translations are shown on the topographic map:

ENGLISH	AFRIKAANS
Diggings	Delwery
Mooi River	Mooirivier
Sewerage Works	Rioolwerke
Nature Reserve	Natuurreservaat

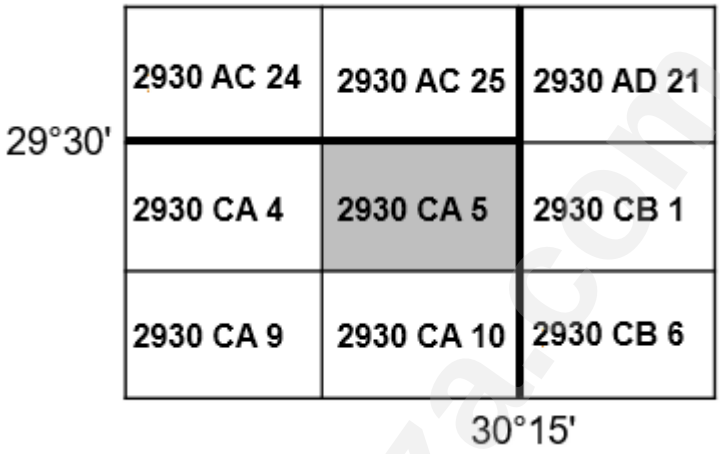
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3.1 MAP SKILLS AND CALCULATIONS

3.1.1 Study the information below. The orthophoto index map sheet west of 2930 CA 5 is …



A 2930 CB 1.
B 2930 CA 4.
C 2930 CB 6.
D 2930 CA 9. (1 x 1) (1)

3.1.2 The scale of 1 **:** 50 000 shows a … area and … detail as it is a smaller scale than 1 **:** 10 000.

(i) larger
(ii) smaller
(iii) less
(iv) more

A (i) and (iii)
B (i) and (iv)
C (ii) and (iii)
D (ii) and (iv) (1 x 1) (1)

Refer to the orthophoto map.

3.1.3 Calculate the straight-line distance in metres (m) that the power line covers from **6** in block **B3** to **7** in block **C5**.

Formula: **Actual Distance** = **Map distance x Map scale** (2 x 1) (2)

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Refer to the topographic map.

3.1.4 Draw a freehand cross-section from the recreation facility at point **F** in block **D2** to point **G** in block **D3**. Indicate **F** and **G** on your cross-section. (2 x 1) (2)

3.1.5 Is the recreation facility at **F** in block **D2** intervisible from point **G** in block **D3**? (1 x 1) (1)

3.1.6 Calculate the magnetic declination for 2022. The difference in years is 6 years and the annual change is 9' westwards. (3 x 1) (3)

3.2 MAP INTERPRETATION

3.2.1 The wind that blows during the night in block **C2** on the orthophoto map is a/an ... wind.

A anabatic
B valley
C katabatic
D slope (1 x 1) (1)

Refer to block **D4** on the orthophoto map.

3.2.2 (a) Which time of the day (morning/afternoon) was the photograph taken? (1 x 1) (1)

(b) Give a reason for your answer to QUESTION 3.2.2(a). (1 x 2) (2)

3.2.3 Give a climatological reason for the large number of perennial water sources (dams) and furrows found on the topographic map. (1 x 2) (2)

Refer to river **H** in block **B1** on the topographic map.

3.2.4 (a) River **H** in block **B1** generally flows in a north-easterly direction. Give map evidence to support this statement. (1 x 1) (1)

(b) Give evidence why the type of flow of river **H** is associated with laminar flow. (1 x 2) (2)

3.2.5 The drainage pattern **I** encircled in blocks **C3** and **D3** on the topographic map is …

A trellis.
B dendritic.
C radial.
D rectangular. (1 x 1) (1)

3.2.6 Describe the underlying rock structure that is responsible for the drainage pattern (answer to QUESTION 3.2.5). (1 x 2) (2)

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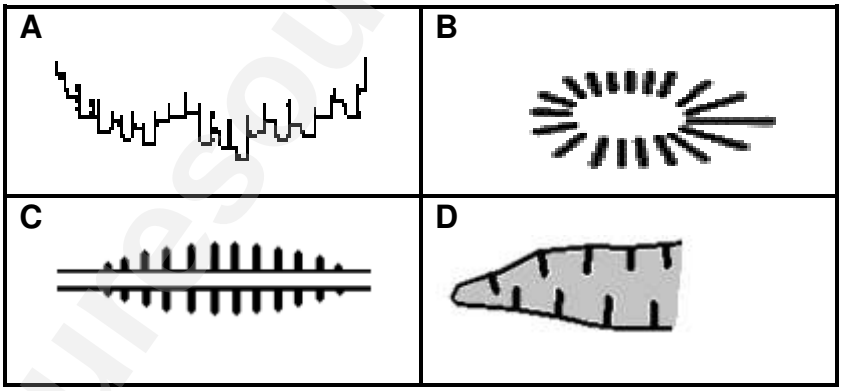
3.3 GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

Refer to the photograph below that shows an environmental issue in block **C2** on the topographic map.



[Source :https://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=5574]

3.3.1 Which symbol represents the environmental issue depicted in the photograph?



(1 x 1) (1)

3.3.2 Classify the photograph as either primary or secondary data. (1 x 1) (1)

3.3.3 Give a reason for the high resolution of the photograph. (1 x 1) (1)

3.3.4 How would the high resolution of the photograph assist a GIS specialist to find a solution to the environmental issue depicted (answer to QUESTION 3.3.1)? (1 x 2) (2)

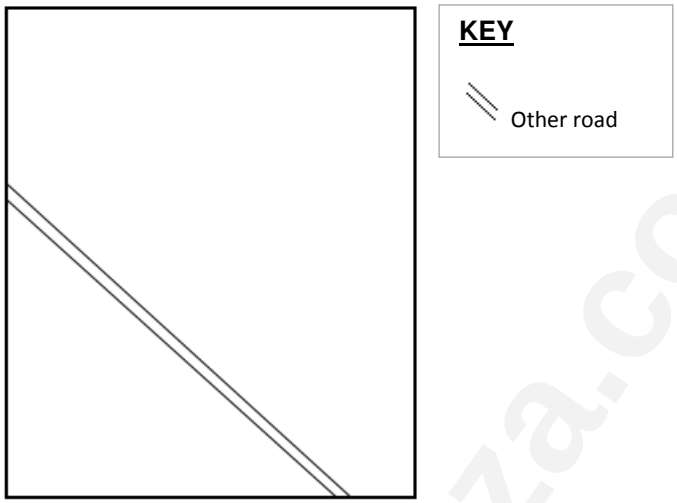
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Refer to the sketch below of the infrastructure data layer in block **C3** on the orthophoto map.

Infrastructure data layer



3.3.5 Identify the missing infrastructure data layer, excluded (not indicated) on the sketch above. (1 x 1) (1)

3.3.6 Using the correct reference symbol, redraw the sketch and insert the infrastructure data layer identified in QUESTION 3.3.5. (2 x 1) (2)

TOTAL SECTION B: 30
GRAND TOTAL: 150

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basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

GEOGRAPHY P1

NOVEMBER 2022

MARKING GUIDELINES

MARKS: 150

These marking guidelines consist of 13 pages.

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MARKING PRINCIPLES FOR GEOGRAPHY- NSC NOVEMBER 2022 AND NSC/SC JUNE 2023

The following marking principles have been developed to standardise marking in all provinces.

MARKING

- ALL questions MUST be marked, irrespective of whether it is correct or incorrect
- Where the maximum marks have been allocated for a particular question, place an over the remainder of the text to indicate the maximum marks have been achieved.
- A clear, neat tick must be used: ✓
  - If ONE mark is allocated, ONE tick must be used: ✓
  - If TWO marks are allocated, TWO ticks must be used: ✓✓
  - The tick must be placed at the FACT that a mark is being allocated for
  - Ticks must be kept SMALL, as various layers of moderation may take place
- Incorrect answers must be marked with a clear, neat cross: ✗
  - Use MORE than one cross across a paragraph/discussion style questions to indicate that all facts have been considered
  - Do NOT draw a line through an incorrect answer
  - Do NOT underline the incorrect facts

For the following action words, ONE word answers are acceptable: **list**, **name**, **state**, **identify**
For the following action words, a FULL sentence must be written: **describe**, **explain**, **evaluate**, **analyse**, **suggest**, **differentiate**, **distinguish**, **define**, **discuss**, **why**, **how**
The following action words need to be read within its context to determine whether a ONE- word answer or FULL sentence is required: **provide**, **what**, **tabulate** and **give**

NOTE THE FOLLOWING

- If the numbering is incorrect or left out, as long as the sequence of answers to questions is followed candidates can be credited
- Spelling errors if recognisable, award the marks provided the meaning is correct.
- Be sensitive to the sense of an answer, which may be stated in a different way
- In questions where a letter is the accepted response, but the learner writes the actual answer- award marks.
- There will be additional guidelines for the marking of certain questions. (*)

TOTALLING AND TRANSFERRING OF MARKS

- Each sub-question must be totalled
  - Questions in Section A has five sub-sections, therefore five sub-totals per question required. Section B has three sub-sections and three sub-totals.
  - Sub-section totals to be written in the right-hand margin at the end of the sub-section and underlined
  - Sub-totals must be written legibly
  - Leave room to write in moderated marks on different levels
- Total sub-totals and transfer total to top left-hand margin next to question number
- Transfer total to cover of answer book

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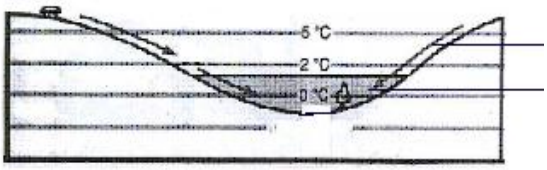
QUESTION 1

1.1.1 A (South Atlantic High) (1) ✓
1.1.2 B (Kalahari High) (1) ✓
1.1.3 B (South Indian) (1) ✗ **2**

1.2.1 Melting snow ✓
1.2.2 Mouth ✗
1.2.3 Third order ✓ **2**

1.3.1 Katabatic ✗
1.3.2 **1** occurs during the day while **2** occurs at night ✓✓

1.3.3 Cold air rolls down into the valley and forms an inversion ✓✓



✓✓ **6**

1.4.1 Shape of front concave ✗
Steep gradient of front ✓

1.4.2 Warm air undercuts the cold air ✗

1.4.3 Air behind the cold front is colder than the air in front. Cold air moves faster than warm air ahead of it. Cold front catches up with the warm front. ✓✓ ✓✓ ✓✓ **7**

1.5.1 (a) A river that only flows all year round ✗

(b) The river channel is wide ✗

(c) Regularity of rainfall and the soil type over which the streams flow. ✓✓ ✓✓

1.5.2 Gauteng and the Eastern Cape ✓ ✗

1.5.3 The cost of food production will increase at it is costly to buy purified water. Farmers will have to buy more chemicals to purify water. Chemicals cost a lot and this will increase production costs. It will be costly to purify water for use in electricity generation. These costs will be included in electricity prices. Costs will increase the price of electricity during production. There will be less clean water to generate hydro- electricity. ✓✓ ✓✓ ✓✓ **13**

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SECTION A: CLIMATE AND WEATHER AND GEOMORPHOLOGY

QUESTION 1: CLIMATE AND WEATHER

1.1	1.1.1	D (1)		
	1.1.2	B (1)		
	1.1.3	A (1)		
	1.1.4	B (1)		
	1.1.5	D (1)		
	1.1.6	C (1)		
	1.1.7	C (1)		
	1.1.8	D (1)	(8 x 1)	(8)
1.2	1.2.1	Z (1)		
	1.2.2	Y (1)		
	1.2.3	Y (1)		
	1.2.4	Z (1)		
	1.2.5	Z (1)		
	1.2.6	Y (1)		
	1.2.7	Z (1)	(7 x 1)	(7)

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1.3 1.3.1 Westerlies (1) (1 x 1) (1)

1.3.2 Cold front (1) (1 x 1) (1)

1.3.3 A (1) (1 x 1) (1)

1.3.4 GIVE A REASON FOR YOUR ANSWER TO QUESTION 1.3.3.
The windspeed behind the cold front is faster (30 knots) (2)
The windspeed behind the warm front is slower (10 knots) (2)
Ahead of the cold front the air is warmer/less dense/lighter (2)
Ahead of the warm front the air is colder/denser/heavier (2)
Warm front use energy to move forward and rise (2)
The pressure gradient associated with the cold front is steeper (2)
[ANY ONE] (1 x 2) (2)

1.3.5 GIVE EVIDENCE FROM THE SKETCH THAT THE MID-LATITUDE CYCLONE IS FOUND IN THE SOUTHERN HEMISPHERE
Clockwise circulation of air (2)
Position of the low pressure is south of the system (2)
Warm sector / Cold front is to the north (2)
Cold sector / Warm front is to the south (2)
Backing of the wind occurs (2)
Apex is to the south (2).
[ANY ONE] (1 x 2) (2)

1.3.6 (a) Z (2) (1 x 2) (2)

GIVE EVIDENCE THAT **C** IS A COLD FRONT OCCLUSION.

(b) The air behind the cold front is colder (10˚C) than the cool air in front of the warm front (14˚C) (2)
The cold front symbol is at the apex of the mid-latitude cyclone (2)
Cold front touches the surface (2)
Cold front has uplifted the warm front (2)
Cumulonimbus clouds evident (2)
[ANY ONE] (1 x 2) (2)

EXPLAIN HOW THE COLD FRONT OCCLUSION DEVELOPED.
*

(c) The cold front which is moving faster undercuts/overtakes (√) the warm front (2)
The warm air is forced to rise (√), resulting in the narrowing of the warm sector (2)
The cool air (in front of the warm front) (√) is completely uplifted (2)
[ANY TWO – Accept 2 x 1 if not qualified] (2 x 2) (4)
Part marking guideline
Process: 1. undercutting
2. Upliftment
3. Position

1.4 1.4.1 20 February (1) (1 x 1) (1)

1.4.2 **GIVE** ONE REASON FOR THIS MOVEMENT.
Batsirai is located in the tropical easterly wind belt (2)
Driven by the easterlies/trade winds (2)
[ANY ONE] (1 x 2) (2)

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1.4.3 **SUGGEST** TWO REASONS FOR THE LARGE DECREASE IN WIND SPEED BETWEEN 20 AND 25 FEBRUARY 2022.

The tropical cyclone reached the land (Madagascar) (2)
Frictional drag over Madagascar (2)
Decrease in moisture content (2)
Less latent heat available (2)
The tropical cyclone entered higher latitudes/cooler waters (2)
Atmospheric pressure increases (2)
[ANY TWO] (2 x 2) (4)

1.4.4 **HOW COULD** STORM SURGES NEGATIVELY IMPACT THE PHYSICAL ENVIRONMENT ON THE EAST COAST OF MADAGASCAR ?

Coastal areas would be flooded (2)
Re-shaping of coastline (accept examples) (2)
Increased soil erosion (2)
Possibility of mass movement (accept examples) (2)
Destruction of biodiversity (accept examples)(2)
Destruction of habitats (accept examples) (2)
Pollution of water sources (2)
Pollution of soil (2)
(Accept) Damage to Infrastructure (accept examples) (2)
[ANY TWO] (2 x 2) (4)

1.4.5 **EXPLAIN THE IMPORTANCE** OF MONITORING TROPICAL CYCLONES LIKE BATSIRAI FOR MADAGASCAR.

The area is prone to tropical cyclones (2)
To observe the **path** of a tropical cyclone (2)
To observe the **development** of a tropical cyclone (2)
Enables advanced weather **predictions** (2)
Enables the **collection** of data on rainfall rates/wind speed (2)
Effective in providing early **warning systems** (2)
To **reduce the level of impact** of the system (accept examples) (2)
To be prepared and **limit possible damages** (accept examples) (2)
To have enough **time to evacuate** (2)
To **plan/prepare emergency** procedures (accept examples) (2)
[ANY TWO] (2 x 2) (4)

1.5 1.5.1 Summer (1) (1 x 1) (1)

1.5.2 GIVE A REASON FOR YOUR ANSWER TO QUESTION 1.5.1.

Weak descending air (2)
The inversion layer is above the escarpment/plateau (2)
Moist (onshore) winds will reach the interior (2)
Wet conditions over the interior (2)
[ANY ONE] (1 x 2) (2)

1.5.3 IDENTIFY TWO FACTORS, VISIBLE IN THE SKETCH, WHICH INFLUENCE THE CLIMATE OF SOUTH AFRICA.

Plateau (1)
Height above sea level (1)
Ocean currents (1)
Inversion layer (1)
Descending air/Kalahari HP (Anticyclonic movement) (1)
Distance from the ocean (1)
[ANY TWO] (2 x 1) (2)

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1.5.4 **EXPLAIN** DESCENDING AIR IN THE DEVELOPMENT OF THE INVERSION LAYER.

As air subsides it **compresses and heats** up (2)
Adiabatic heating due to subsiding air (2)
[ANY ONE] (1 x 2) (2)

1.5.5 IN A PARAGRAPH OF APPROXIMATELY EIGHT LINES, DESCRIBE HOW THE POSITION OF THE INVERSION LAYER IN SKETCHES **A** AND **B** INFLUENCES THE AMOUNT OF RAINFALL IN THE INTERIOR OF SOUTH AFRICA.

Sketch (A)
Inversion layer is above the level of the plateau/escarpment (2)
Moist air flows into the interior (2)
Unstable conditions cause air to rise (2)
Condensation occurs and clouds form (2)
Results in more rainfall (2)

Sketch (B)
Inversion layer below the level of the plateau/escarpment (2)
Moist air cannot reach the interior (2)
Stable conditions cause clear skies (2)
Less/No condensation occurs (2)
Results in less/no rainfall (2)
[ANY FOUR – MUST INCLUDE CONDITIONS OF SKETCH A AND SKETCH B] (4 x 2) (8)
[60]

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QUESTION 2 - GEOMORPHOLOGY

2.1 2.1.1 B (1)

2.1.2 B (1)

2.1.3 A (1)

2.1.4 B (1)

2.1.5 A (1)

2.1.6 B (1)

2.1.7 B (1)

2.1.8 B (1) (8 x 1) (8)

2.2 2.2.1 D (1)

2.2.2 C (1)

2.2.3 C (1)

2.2.4 B (1)

2.2.5 C (1)

2.2.6 B (1)

2.2.7 C (1) (7 x 1) (7)

2.3 2.3.1 Permanent (1) (1 x 1) (1)

2.3.2 STATE TWO CHARACTERISTICS OF THE RIVER SYSTEM EVIDENT IN THE SKETCH

Dendritic drainage pattern (1)
Volume of water increases from source to mouth (1)
High water table (1)
Tributaries are divided by Interfluves (1)
2nd order stream (1)
Low drainage density (Few tributaries) (1)
Permanent / Perennial river (1)
The river intercepts the water table (in wet and dry season) (1)
Gentle gradient (1)
The tributaries are joining the mainstream at an acute angle (1)
[ANY TWO] (2 x 1) (2)

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2.3.3 GIVE EVIDENCE FROM THE SKETCH THAT THE SURFACE RUN-OFF IS GREATER AT **A** THAN AT **B**.

Less vegetation at A (2)
More tributaries feed the channel at A (2)
The channel at A is wider (2)
Higher volume of water at A (The line indicating the river is thicker at A) (2)
A is in the middle or lower course (2)
Higher stream order at A (2)
[ANY TWO – MAY ANSWER WITH REFERENCE TO B] (2 x 2) (4)

2.3.4 (a) Z (2) (1 x 2) (2)

(b) The river intercepts the wet and dry water tables (2) (1 x 2) (2)

2.3.5 HOW WILL A DECREASE IN PRECIPITATION AFFECT THE FOLLOWING

(a) WATER TABLE

It will **lower** the water table (2) (1 x 2) (2)

HOW WILL A DECREASE IN PRECIPITATION AFFECT THE FOLLOWING

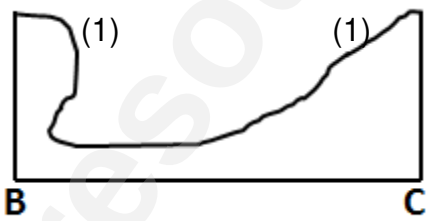
(b) TYPE OF RIVER

It changes to a periodic or episodic river (non-perennial) (2)
The type of the river remains unchanged (permanent) (2)
[ANY ONE] (1 x 2) (2)

2.4.1 Lower (1) (1 x 1) (1)

2.4.2 Meander (1) (1 x 1) (1)

2.4.3 (a) DRAW A ROUGH CROSS-SECTION FROM **B** TO **C**.



Marks to be allocated for the correct shape of the undercut (steep) and the slip-off slopes (gentler) (2 x 1) (2)

(b) B (1) (1 x 1) (1)

(c) GIVE A REASON FOR YOUR ANSWER TO QUESTION 2.4.3(b).

The river **flow is faster** (at the outer bank) (2)
The river has **more energy** (2)
[ANY ONE] (1 x 2) (2)

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2.4.4 IN A **PARAGRAPH** OF APPROXIMATELY EIGHT LINES, **DESCRIBE** THE PROCESSES THAT RESULTED IN THE CHANGE OF FLUVIAL LANDFORM **A** TO AN OX-BOW LAKE AT **D**.

The outer bank of the river gets eroded (2)
Deposition takes place on the inner bank (2)
Continuous erosion and deposition cause the neck to become narrower (2)
Meander loop develops (2)
During flooding, the river cuts through the meander neck (2)
Deposition occurs at the neck of the meander loop (2)
The meander loop is now separated from the main stream forming an oxbow lake (2)
[ANY FOUR] (4 x 2) (8)

2.5 2.5.1 Department of Water Affairs (1) (1 x 1) (1)

2.5.2 **IDENTIFY** TWO SOURCES THAT NEGATIVELY IMPACT THE QUALITY OF WATER OF THE **DONALDSON DAM**.

Sewage facilities (1)
Mining areas (1)
Informal settlements (1)
[ANY TWO] (2 x 1) (2)

2.5.3 WHY ARE THE WATER SAMPLING POINTS (TESTING POINTS) IMPORTANT?

Test / monitor the water quality (2) (accept examples)
Identify the origin of the water pollution (2)
Check the level of water pollution (2)
Ensure that the ecosystem remains healthy (2)
Ensure that the ecosystem remains in balance (2)
Preserve the biodiversity (2)
To do ongoing research and predictions (2)
To ensure water is safe for people to use (2)
To assist with proper water management (2)
To avoid people getting (waterborne) diseases (2) (accept examples)
[ANY ONE] (1 x 2) (2)

2.5.4 HOW DO AGRICULTURAL PRACTICES IN THE MOOI RIVER CATCHMENT AREA CAUSE WATER POLLUTION OF THE RIVER SYSTEM?

The pesticides/herbicides end up in the rivers (2) (accept examples)
The cattle droppings/waste is washed into rivers (2)
Fertilizers end up in the rivers (2)
Poor farming methods cause soil erosion (2) (accept examples)
Removing of vegetation increases run-off of more polluted material in water (2)
Irrigation/farming pollute the water (2)
[ANY TWO] (2 x 2) (4)

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2.5.5 SUGGEST THREE SUSTAINABLE STRATEGIES THAT CAN BE IMPLEMENTED IN ORDER TO MAINTAIN THE QUALITY OF WATER IN THE MOOI RIVER CATCHMENT AREA.

Decrease the use of pesticides/herbicides (2)
Buffering of the Mooi River catchment area (2)
Practice green agriculture (accept examples) (2)
Close the mines along the banks (2)
Manage dumping of industrial waste (accept examples) (2)
Reduce deforestation (2)
Reduce pollution of (ground) water (2)
Implement legislation (accept examples) (2)
Provide incentives (accept examples) (2)
Create awareness (accept examples) (2)
Implement wastewater treatment (2)
Ensure stormwater management (2)
Ensure conservation of wetlands (2)
Proper land use planning (accept examples) (2)
Regular testing (accept examples) (2)
Improve infrastructure in informal settlements (accept examples) (2)
Maintain water purifying plants (2)
Regular environmental impact assessment studies (2)
Afforestation / Recover the flood plain/riparian zone (2)
[ANY THREE] (3 x 2) (6)

[60]

TOTAL SECTION A: 120

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SECTION B

QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES

3.1 3.1.1 B (1) (1 x 1) (1)

3.1.2 A (1) (1 x 1) (1)

3.1.3 Distance = **Map distance x Map scale**

= 9 (1) cm x 100 (Range 8.9 to 9.1)

= 900 m (1) (Range 890 m to 910 m) (2 x 1) (2)

3.1.4 DRAW A FREEHAND CROSS-SECTION FROM THE RECREATION FACILITY AT POINT **F** IN BLOCK **D2** TO POINT **G** IN BLOCK **D3**. INDICATE **F** AND **G** ON YOUR CROSS-SECTION.



[AWARD 1 MARK FOR CORRECT SHAPE WITHOUT LABELS] (2 x 1) (2)

3.1.5 Yes (1) (1 x 1) (1)

3.1.6 CALCULATE THE MAGNETIC DECLINATION FOR 2022. THE DIFFERENCE IN YEARS IS 6 YEARS AND THE ANNUAL CHANGE IS 9' WESTWARDS.

Total change: 9' x 6 years = 54' (1)
Magnetic declination for 2022: 24º 42'
+(1) 54'
24º 96'
25º 36' west of true north (1) (3 x 1) (3)

3.2 3.2.1 C (1) (1 x 1) (1)

3.2.2 (a) morning (1) (1 x 1) (1)

(b) The shadows fall in a south-westerly direction (2) (1 x 2) (2)

3.2.3 Rainfall is seasonal (2) (1 x 2) (2)

3.2.4 RIVER **H** IN BLOCK **B1** GENERALLY FLOWS IN A NORTH-EASTERLY DIRECTION. GIVE MAP EVIDENCE TO SUPPORT THIS STATEMENT.

(a) The river flows towards the dam (1)
The V-shape contour lines point in a south-westerly direction (1)
Height decreases in a northerly direction (1)
[ANY ONE] (1 x 1) (1)

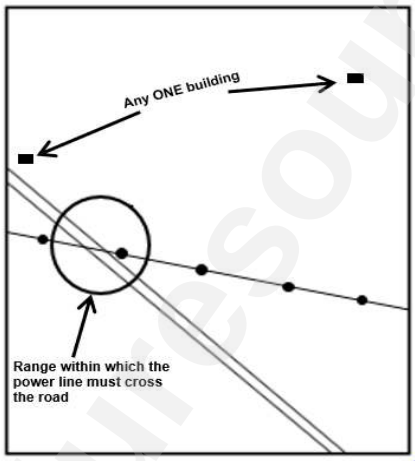
GIVE EVIDENCE WHY THE TYPE OF FLOW OF RIVER **H** IS ASSOCIATED WITH LAMINAR FLOW

(b) Flat/Gently sloping (2)
Widely spaced contour lines (2)
[ANY ONE] (1 x 2) (2)

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	3.2.5	B (1)	(1 x 1)	(1)
	3.2.6	Uniform/homogenous resistance (2) Horizontally layered (2) **[ANY ONE]**	(1 x 2)	(2)
3.3	3.3.1	D (1)	(1 x 1)	(1)
	3.3.2	primary (1)	(1 x 1)	(1)
	3.3.3	Higher number of pixels was used (1) The pixels are smaller (1) Close up view (1) Better quality camera or lens used (1) **[ANY ONE]**	(1 x 1)	(1)
	3.3.4	Features are clearly visible (accept examples) (2)	(1 x 2)	(2)
	3.3.5	Power line (1) Buildings (1) **[ANY ONE]**	(1 x 1)	(1)
	3.3.6	Infrastructure data layer		



1 mark for correct reference symbol (relating to QUESTION 3.3.5).
1 mark for redrawing the power line crossing the road /1 mark for the correct position of the building (2 x 1) (2)

TOTAL SECTION B: 30
GRAND TOTAL: 150

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basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS/
NATIONAL SENIOR CERTIFICATE EXAMINATIONS

GEOGRAPHY P1

2022

MARKS: 150

TIME: 3 hours

This question paper consists of 19 pages.

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INSTRUCTIONS AND INFORMATION

1. This question paper consists of TWO SECTIONS.

   SECTION A
   QUESTION 1: CLIMATE AND WEATHER (60 MARKS)
   QUESTION 2: GEOMORPHOLOGY (60 MARKS)

   SECTION B
   QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES (30 MARKS)

2. Answer ALL THREE questions.

3. ALL diagrams are included in the QUESTION PAPER.

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. Do NOT write in the margins of the ANSWER BOOK.

8. Draw fully labelled diagrams when instructed to do so.

9. Answer in FULL SENTENCES, except when you have to state, name, identify or list.

10. Units of measurement MUST be indicated in your final answer, e.g. 1 020 hPa, 14 °C and 45 m.

11. You may use a non-programmable calculator.

12. You may use a magnifying glass.

13. Write neatly and legibly.

SPECIFIC INSTRUCTIONS AND INFORMATION FOR SECTION B

14. A 1 : 50 000 topographic map 3422AA MOSSEL BAY and a 1 : 10 000 orthophoto map 3422AA 18, AA 19 and AA 23 MOSSEL BAY are provided.

15. The area demarcated in RED/BLACK on the topographic map represents the area covered by the orthophoto map.

16. Show ALL calculations. Marks will be allocated for this.

17 You must hand in the topographic and orthophoto map to the invigilator at the end of the examination.

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SECTION A: CLIMATE AND WEATHER AND GEOMORPHOLOGY

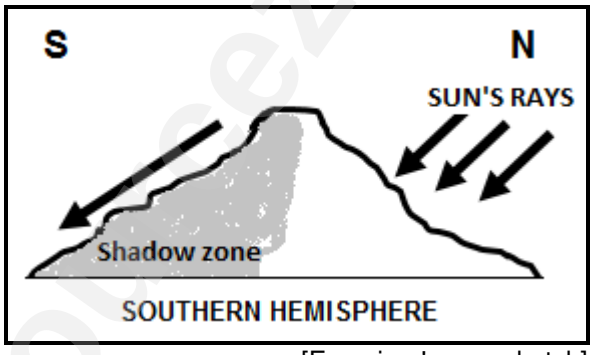
QUESTION 1: CLIMATE AND WEATHER

1.1 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 numbers (1.1.1 to 1.1.8) in the ANSWER BOOK, e.g. 1.1.9 D.

1.1.1 Climate of a very small area is known as a …

A city climate.
B microclimate.
C macroclimate.
D valley climate.

1.1.2 The slope in the diagram that receives the direct rays of the sun is …-facing.



[Examiner's own sketch]

A south
B east
C north
D west

1.1.3 South-facing slopes in the Southern Hemisphere can be described as … natural vegetation.

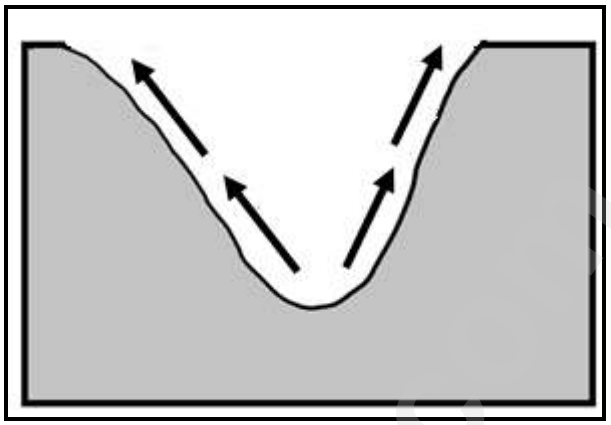
A dry with sparse
B moist with dense
C moist with sparse
D dry with dense

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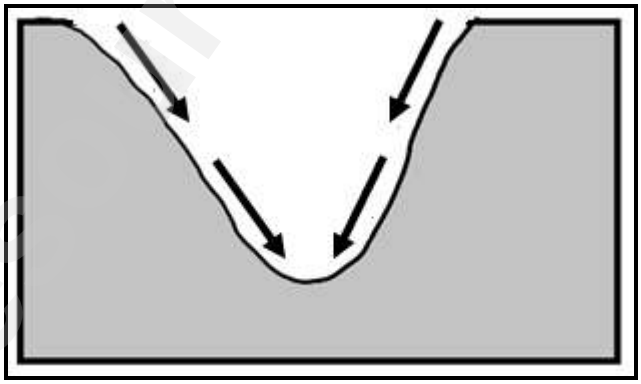
1.1.4 The air movement shown in the sketch can result in …



[Source: Examiner's own sketch]

A frost pockets.
B the dispersal of pollutants.
C radiation fog.
D a thermal belt.

1.1.5 The downslope movement of air occurs because of cooling due to …



[Source: Examiner's own sketch]

A solar radiation.
B reflection.
C terrestrial radiation.
D insolation.

1.1.6 Precipitation that forms due to terrestrial cooling at night:

A Radiation fog
B Drizzle
C Snow
D Advection fog

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1.1.7 The wind associated with a temperature inversion in a valley is a/an … wind.

A anabatic
B offshore
C onshore
D katabatic

1.1.8 The CORRECT sequence in which a temperature inversion develops:

(i) Mountain slopes cool
(ii) Warm air is displaced and rises from the valley floor
(iii) Cold air sinks due to the force of gravity
(iv) Temperature increases with height

A (i), (ii), (iii), (iv)
B (iv), (iii), (ii), (i)
C (i), (iii), (ii), (iv)
D (i), (ii), (iv), (iii)

(8 x 1) (8)

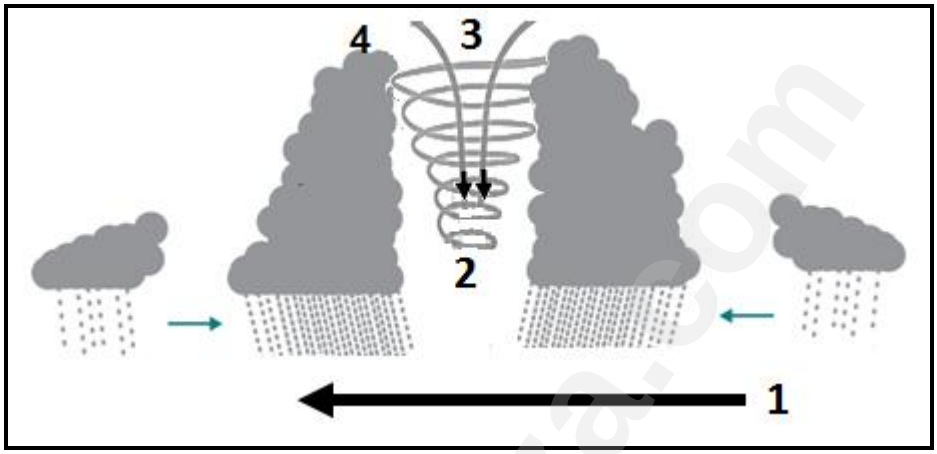
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1.2 The sketch shows a cross-section through a tropical cyclone in the Southern Hemisphere. Choose the word/term from COLUMN B that completes the statement in COLUMN A. Write only **Y** or **Z** next to the question numbers (1.2.1 to 1.2.7) in the ANSWER BOOK, e.g. 1.2.8 **Z**.



[Adapted from https://maritimesa.org/grade-11/2016/09/23/influence-of-weather]

	COLUMN A	COLUMN B
1.2.1	Wind **1** that steers the tropical cyclone is known as the …	**Y** westerlies **Z** easterlies
1.2.2	**2** is known as the …	**Y** eye **Z** centre
1.2.3	Circulation of air around **2** is …	**Y** clockwise **Z** anticlockwise
1.2.4	The air pressure at **2** …	**Y** decreases **Z** increases
1.2.5	The air at **3** is …	**Y** ascending **Z** descending
1.2.6	The cloud type at **4** is …	**Y** cumulonimbus **Z** stratus
1.2.7	The type of precipitation associated with cloud type **4** is …	**Y** drizzle **Z** thunderstorms

(7 x 1) (7)

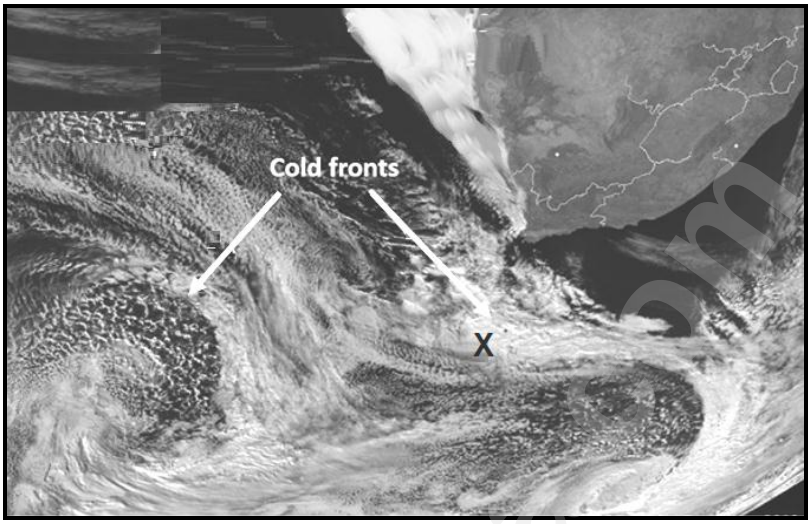
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1.3 Refer to the extract and the satellite image of mid-latitude cyclones.

COLD FRONTS MOVE OVER THE WESTERN CAPE: AUGUST 2021



Parts of the Western Cape are already in the grips of cold and rainy weather and this will continue as a series of cold fronts reach the province this weekend.

As the last and strongest cold front makes landfall on Sunday morning, widespread rain will start over the Peninsula, the Cape Winelands and the Overberg, where weather prediction models have currently indicated a further 20–30 mm of rain in Cape Town and more than 50 mm in the mountainous areas. With the area already becoming water-logged, this heavy rainfall may lead to localised flooding. Rainfall will spread along the south coast, west coast and Namakwa districts on Sunday.

Maximum temperatures will drop to 12 °C in the Western Cape. Snow will start falling on Sunday evening into Monday morning across the high ground of the Western and Northern Cape, reaching the Eastern Cape and Lesotho on Monday. Snowfalls will not be confined to the mountains of these provinces as some towns and mountain passes can expect light snowfall as well.

[Adapted from https://www.enca.com/weather/here-comes-the-cold]

1.3.1 Give the general direction of movement of the mid-latitude cyclones. (1 x 1) (1)

1.3.2 Give a reason for the direction of movement of the mid-latitude cyclones. (1 x 2) (2)

1.3.3 Quote evidence from the extract for the localised flooding. (1 x 2) (2)

1.3.4 Why do cold fronts affect the Western Cape mainly in winter? (1 x 2) (2)

1.3.5 How will snowfall influence the water supply in the Western Cape? (1 x 2) (2)

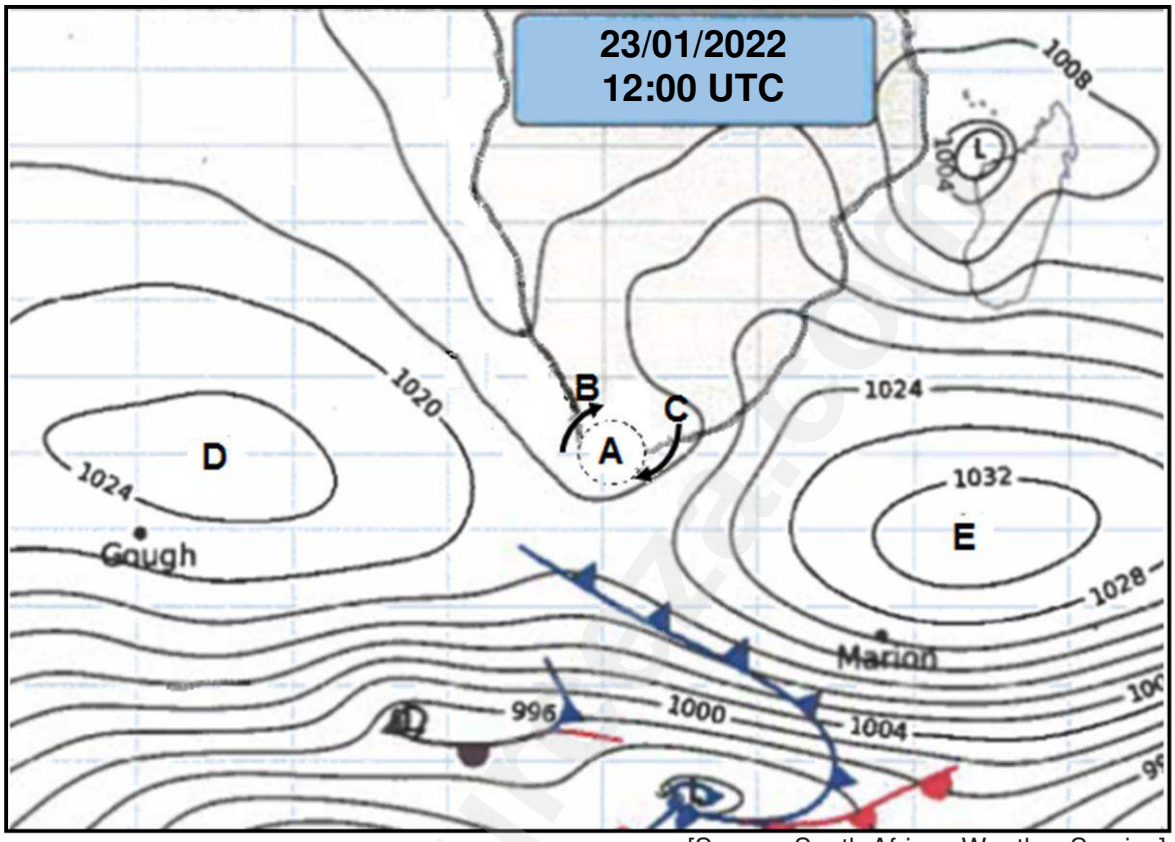
1.3.6 Describe the processes that resulted in the formation of cumulonimbus clouds along the cold front at **X**. (3 x 2) (6)

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1.4 Refer to the South African synoptic weather map.



[Source: South African Weather Service]

1.4.1 Name low-pressure cell **A**. (1 x 1) (1)

1.4.2 Why is pressure cell **A** known as a travelling disturbance? (1 x 2) (2)

1.4.3 Why is there a greater possibility of precipitation at **B** than at **C**? (2 x 2) (4)

1.4 4 Give evidence that this synoptic weather map represents typical summer conditions. (2 x 2) (4)

1.4.5 (a) Which anticyclone, **D** or **E**, has a greater subsidence (descending) of air? (1 x 2) (2)

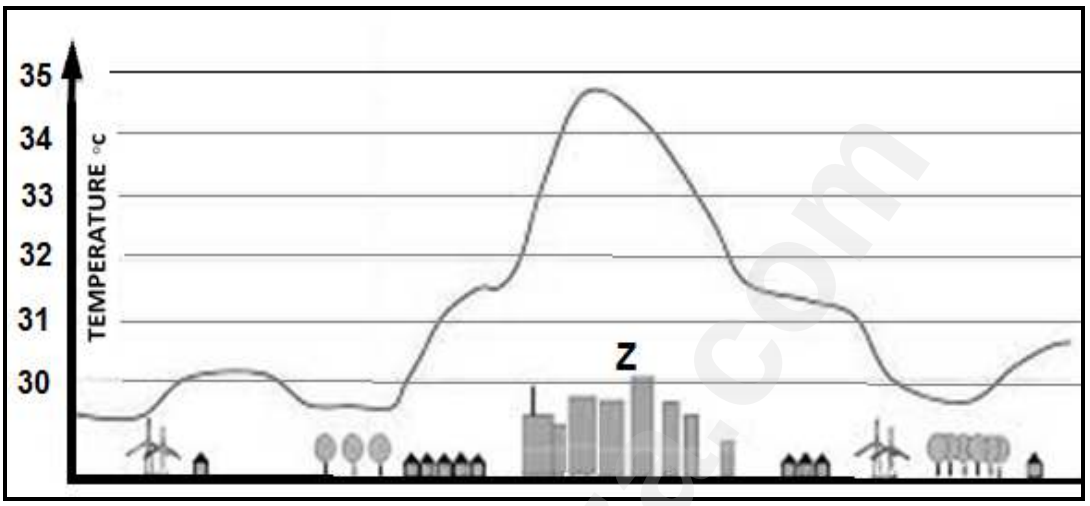
(b) Use the pressure readings on the synoptic weather map to support your answer to QUESTION 1.4.5(a). (1 x 2) (2)

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1.5 Refer to the graph showing the difference between rural and urban temperatures.



[Source: https://www.google.com/url?sa=i&url=https%3A%environment%2F2021-heat-island]

1.5.1 Define the concept *urban heat island*. (1 x 2) (2)

1.5.2 Give the highest temperature recorded. (1 x 1) (1)

1.5.3 Explain TWO ways in which the buildings at **Z** contribute to the high temperatures. (2 x 2) (4)

1.5.4 In a paragraph of approximately EIGHT lines, suggest sustainable building strategies to reduce the urban heat island effect. (4 x 2) (8)

[60]

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QUESTION 2: GEOMORPHOLOGY

2.1 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 numbers (2.1.1 to 2.1.8) in the ANSWER BOOK, e.g. 2.1.9 D.

2.1.1 This type of river only flows after heavy rainfall:

A Perennial
B Periodic
C Exotic
D Episodic

2.1.2 … rivers are found mostly in the eastern half of South Africa.

A Perennial
B Periodic
C Exotic
D Episodic

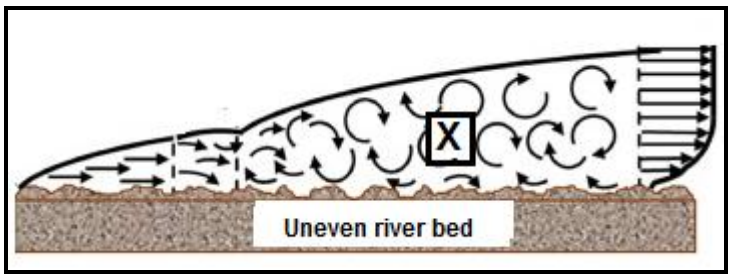
2.1.3 … rivers originate in a high-rainfall region and flow through a dry region.

A Perennial
B Periodic
C Exotic
D Episodic

2.1.4 … rivers only cut through the water table in the wet season.

A Perennial
B Periodic
C Exotic
D Episodic

2.1.5 **X** illustrates a … flow.



[Source: https://www.google.com/url?sa=i&url=https%2Fwww.sciencedirect.com]

A laminar
B base
C turbulent
D sheet

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2.1.6 The ability of rock to allow water to pass through:

A Permeability
B Evaporation
C Porosity
D Precipitation

2.1.7 TWO factors that will result in a higher rate of infiltration:

(i) Drizzle
(ii) Thunderstorms
(iii) Steep gradient
(iv) Gentle gradient

A (i) and (ii)
B (ii) and (iii)
C (iii) and (iv)
D (i) and (iv)

2.1.8 A higher rate of infiltration will result in a:

(i) Lower stream order
(ii) Lower drainage density
(iii) Lower water table
(iv) Lower soil moisture content

A (i) and (ii)
B (ii) and (iii)
C (iii) and (iv)
D (i) and (iv)

(8 x 1) (8)

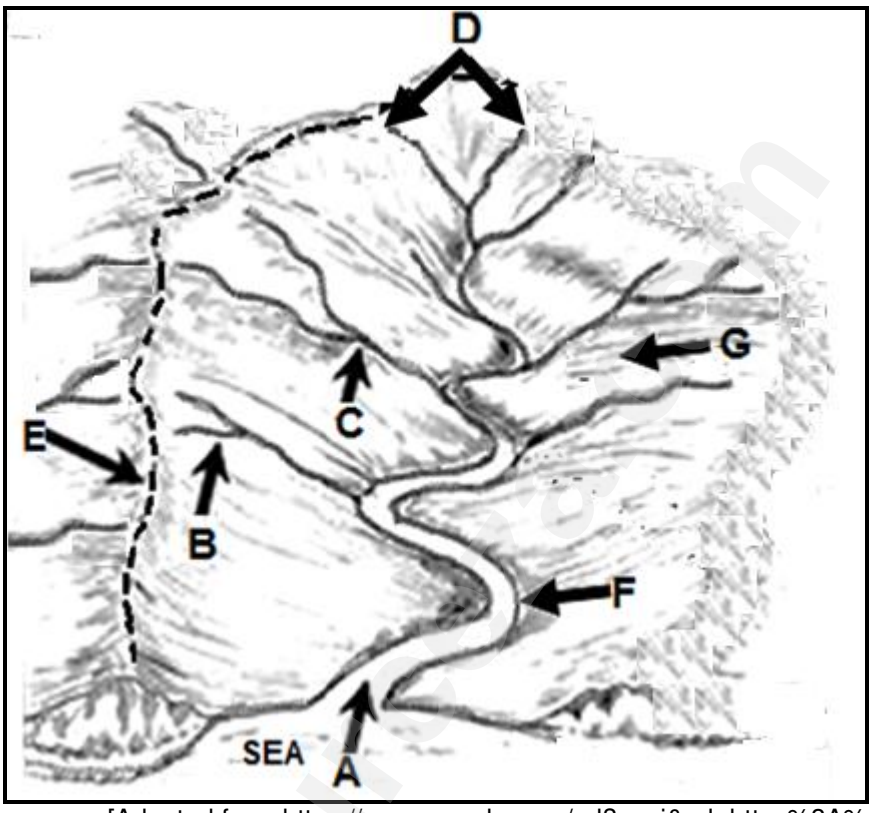
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2.2 Refer to the drainage basin and match the labels (**A** to **G**) with the term/concept (2.2.1 to 2.2.7), e.g. 2.2.8 **H**.



[Adapted from https://www.google.com/url?sa=i&url=https%3A%2Fdrainage-basin-gram%]

2.2.1 Source

2.2.2 Confluence

2.2.3 Watershed

2.2.4 Main stream

2.2.5 Tributary

2.2.6 Interfluve

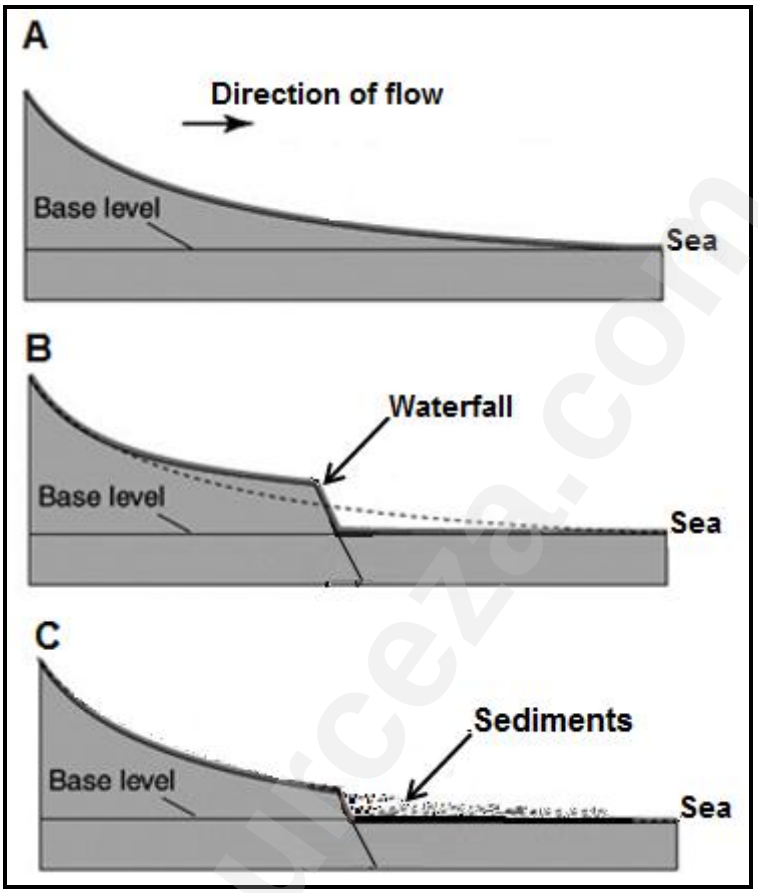
2.2.7 Mouth (7 x 1) (7)

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2.3 Refer to the sketches showing the profile and grading of a river.



[Adapted from file:///T:/Fluvial%20Landforms.pdf]

Refer to sketch **A**.

2.3.1 Define the concept *longitudinal profile*. (1 x 2) (2)

2.3.2 State TWO characteristics of the longitudinal profile evident in sketch **A**. (2 x 1) (2)

2.3.3 Does sketch **A** represent a graded or an ungraded river? (1 x 1) (1)

2.3.4 Give a reason for your answer to QUESTION 2.3.3. (1 x 2) (2)

Refer to sketches **B** and **C**.

2.3.5 Identify a temporary and a permanent base level of erosion in sketch **B**. (2 x 1) (2)

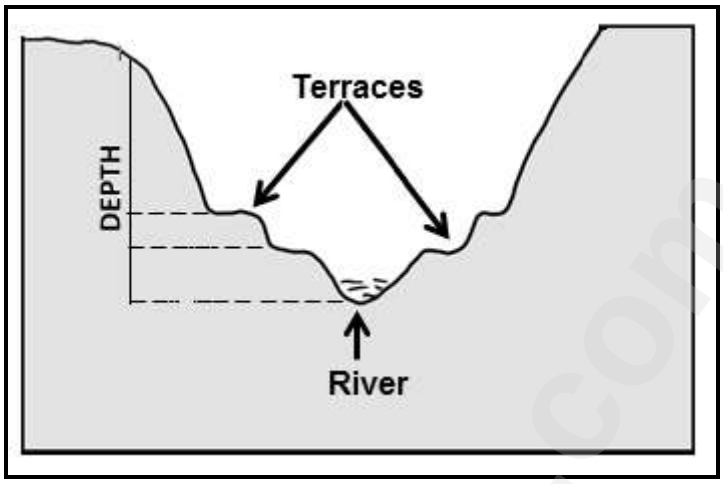
2.3.6 Describe the processes that the river in sketches **B** and **C** would undergo to reach a graded state. (3 x 2) (6)

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2.4 Refer to the sketch on river rejuvenation.



[Source: Examiner's own sketch]

2.4.1 Define the concept *river rejuvenation.* (1 x 2) (2)

2.4.2 State ONE factor that causes river rejuvenation. (1 x 1) (1)

2.4.3 Describe the relationship between vertical erosion and the depth of the valley. (1 x 2) (2)

2.4.4 Identify TWO features of river rejuvenation evident in the sketch. (2 x 1) (2)

2.4.5 Explain how river rejuvenation is responsible for the formation of the features identified in QUESTION 2.4.4. (2 x 2) (4)

2.4.6 What negative impact will a rejuvenated river have on the physical environment? (2 x 2) (4)

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2.5 Refer to the extract on catchment and river management.

A RIVER OF POLLUTION FLOWS THROUGH OUR LAND

The Olifants River is one of Southern Africa's most important river catchments. The river is critical to the economies of both South Africa and Mozambique. The 30 dams along the course supply three provinces with water in times of drought. Ten million people rely on this river for water.

The water from the Olifants River irrigates farms in western Mpumalanga and powers Eskom's coal-fired power stations in the area. The river flows through Limpopo's platinum belt, supplying water to valleys that otherwise would be dry. The river cuts through the Drakensberg irrigating farms in the Lowveld, providing water to the Kruger National Park and finally joining the Limpopo River in Mozambique.

The above-mentioned activities have had a negative impact on the quality of water in the river. Management strategies implemented so far have proven to be ineffective. This puts the water of the Olifants River in danger of being declared too contaminated (polluted) to be used. Strategies need to be put in place to improve the quality of water in the river in order to ensure a sustainable source of water.

[Adapted from https://mg.co.za/article/2017-04-13-00-a-river-of-sewage-chemicals-metals-flows-through-our-land/]

2.5.1 What is *river management*? (1 x 2) (2)

2.5.2 According to the extract, how many people rely on the Olifants River for water? (1 x 1) (1)

2.5.3 Quote evidence from the extract indicating how water from the Olifants River is used. (2 x 1) (2)

2.5.4 What negative impact would Eskom's coal-fired power stations have on the Olifants River? (1 x 2) (2)

2.5.5 In a paragraph of approximately EIGHT lines, explain FOUR strategies that could be implemented so that the Olifants River becomes a sustainable source of water. (4 x 2) (8)

[60]

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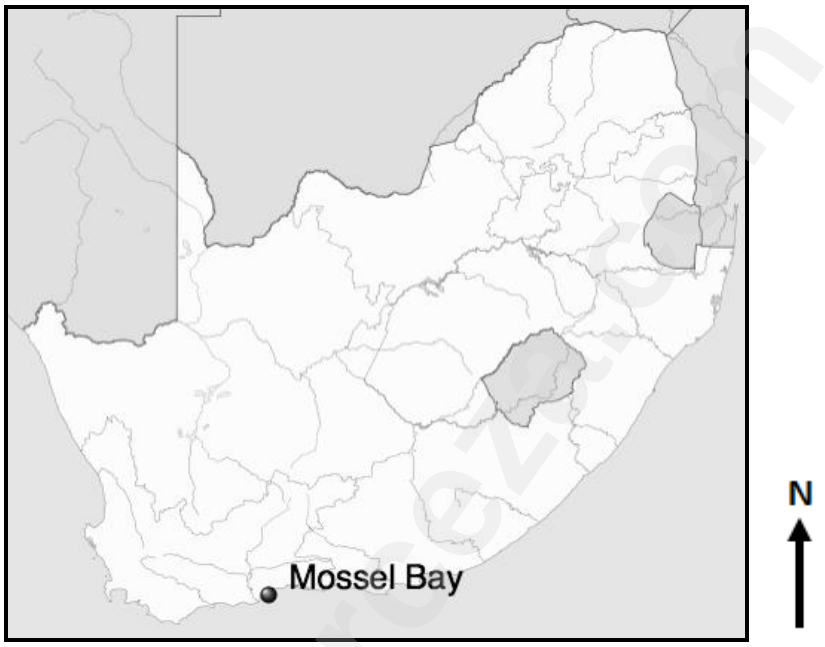
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SECTION B

QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES

GENERAL INFORMATION ON MOSSEL BAY



Coordinates; 34º06'S; 22º03'E

Mossel Bay is a coastal town with a population of 99 319. It lies at the western end of a stretch of scenic coastline called the Garden Route. Mossel Bay is a bustling holiday resort in summer and an ideal retreat in winter as it is located on a spectacular sun-washed peninsula embraced by the warm Indian Ocean. The onshore winds bring cool sea breezes creating pleasant conditions for tourists.

The average annual difference between the maximum and minimum temperature for Mossel Bay is 6 °C. This temperature range is small due to the moderating influence of the ocean. Mossel Bay has warm temperatures and a significant amount of rainfall throughout the year.

[Adapted from https//:www.visitmosselbay.co.za]

The following English terms and their Afrikaans translations are shown on the topographic map:

ENGLISH	AFRIKAANS
Diggings	Delwerye
Golf Course	Gholfbaan
River	Rivier
Sewerage Works	Rioolwerke
Estate	Landgoed
Mud flats	Modderplate
Nature Reserve	Natuurreservaat

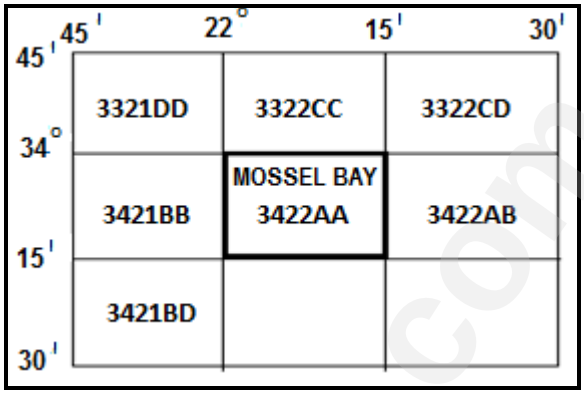
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3.1 MAP SKILLS AND CALCULATIONS

3.1.1 3322CD is located … of Mossel Bay on the index sheet.



A south-east
B north-west
C north-east
D south-west (1 x 1) (1)

3.1.2 The value of the index contour line **F** in block **C2** on the topographic map is … metres.

A 80
B 100
C 103
D 120 (1 x 1) (1)

3.1.3 Calculate, in km², the area covered by the orthophoto map using the following converted measurements:

Length: 2,1 km
Breadth: 1,9 km

Formula: **Area = Length x Breadth** (1 x 1) (1)

3.1.4 Why does the demarcated area of the orthophoto map appear smaller on the topographic map? (1 x 1) (1)

3.1.5 Calculate the average gradient from **6** in block **B3** to **7** in block **B4** on the orthophoto map.

Formula: $\textbf{Average gradient} = \frac{\textbf{vertical interval (VI)}}{\textbf{horizontal equivalent (HE)}}$

(5 x 1) (5)

3.1.6 Is the average gradient calculated in QUESTION 3.1.5 generally considered steep or gentle? (1 x 1) (1)

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3.2 **MAP INTERPRETATION**

Refer to **G** in block **D3** on the topographic map.

3.2.1 Name the wind that blows down the slopes of the valley at **G** during the night. (1 x 1) (1)

3.2.2 Explain how the wind identified in QUESTION 3.2.1 negatively influences crops grown on the valley floor at **G**. (1 x 2) (2)

Refer to block **A4** on the orthophoto map and the general information on Mossel Bay.

3.2.3 The annual temperature range for Mossel Bay is considered to be (small/large). (1 x 1) (1)

3.2.4 Why does the holiday resort, labelled **10**, experience a moderate climate? (1 x 2) (2)

Refer to blocks **A4** and **B4** on the topographic map.

3.2.5 The Hartenbos River in blocks **A4** and **B4** on the topographic map is in the … course.

A upper
B middle
C lower
D youth (1 x 1) (1)

3.2.6 Give evidence from blocks **A4** and **B4** to support your answer to QUESTION 3.2.5. (1 x 2) (2)

Refer to block **A3** on the orthophoto map.

3.2.7 The slope found between **8** and **9** in block **A3** is a … slope.

A convex
B concave
C uniform
D terrace (1 x 1) (1)

3.2.8 Use the evidence from the orthophoto map to support your answer to QUESTION 3.2.7. (1 x 2) (2)

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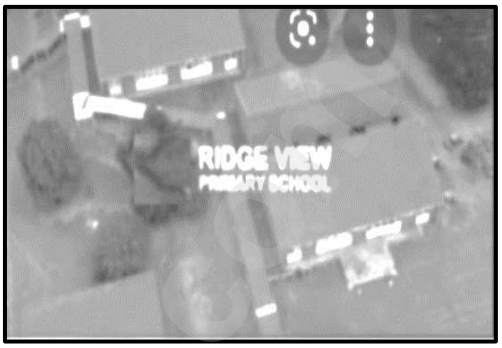
3.3 GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

Refer to the images, **A** and **B**, of a school in Mossel Bay.

A



B



[Source: Ridge+view+school+mossel bay]

3.3.1	Images **A** and **B** are stored as (pixels/symbols).	(1 x 1)	(1)
3.3.2	Which image, **A** or **B**, has a higher resolution?	(1 x 1)	(1)
3.3.3	Give a reason for your answer to QUESTION 3.3.2.	(1 x 2)	(2)

Refer to block **A1** on the topographic map.

3.3.4	Define the concept *data layer*.	(1 x 2)	(2)
3.3.5	How will the drainage data layer encourage crop farming in the area?	(1 x 2)	(2)

[30]

TOTAL: 150

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REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS/ NATIONAL SENIOR CERTIFICATE EXAMINATIONS

GEOGRAPHY P1

2022

MARKING GUIDELINES

MARKS: 150

These marking guidelines consist of 11 pages.

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PRINCIPLES FOR MARKING GEOGRAPHY- NSC NOVEMBER 2021 AND SC JUNE 2022

The following marking principles have been developed to standardise marking in all provinces.

MARKING

- ALL questions MUST be marked, irrespective of whether it is correct or incorrect
- Where the maximum marks have been allocated for a particular question, place an over the remainder of the text to indicate the maximum marks have been achieved.
- A clear, neat tick must be used: ✓
  - If ONE mark is allocated, ONE tick must be used: ✓
  - If TWO marks are allocated, TWO ticks must be used: ✓✓
  - The tick must be placed at the FACT that a mark is being allocated for
  - Ticks must be kept SMALL, as various layers of moderation may take place
- Incorrect answers must be marked with a clear, neat cross: ×
  - Use MORE than one cross across a paragraph/discussion style questions to indicate that all facts have been considered
  - Do NOT draw a line through an incorrect answer
  - Do NOT underline the incorrect facts

M

For the following action words, ONE word answers are acceptable: **list**, **name**, **state**, **identify**
For the following action words, a FULL sentence must be written: **describe**, **explain**, **evaluate**, **analyse**, **suggest**, **differentiate**, **distinguish**, **define**, **discuss**, **why**, **how**
The following action words need to be read within its context to determine whether a ONE- word answer or FULL sentence is required: **provide**, **what**, **tabulate** and **give**

NOTE THE FOLLOWING

- If the numbering is incorrect or left out, as long as the sequence of answers to questions is followed candidates can be credited
- Spelling errors if recognisable, award the marks provided the meaning is correct.
- Be sensitive to the sense of an answer, which may be stated in a different way
- In questions where a letter is the accepted response but the learner writes the actual answer- award marks. This concession remains until June 2022.

TOTALLING AND TRANSFERRING OF MARKS

- Each sub-question must be totalled
  - Questions in Section A has five sub-sections, therefore five sub-totals per question required. Section B has three sub-sections and three sub-totals.
  - Sub-section totals to be written in the right hand margin at the end of the sub-section and underlined
  - Sub-totals must be written legibly
  - Leave room to write in moderated marks on different levels
- Total sub-totals and transfer total to top left hand margin next to question number
- Transfer total to cover of answer book

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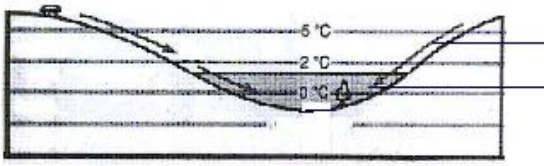
QUESTION 1

1.1.1 A (South Atlantic High) (1) ✓
1.1.2 B (Kalahari High) (1) ✓
1.1.3 B (South Indian) (1) ✗ **2**

1.2.1 Melting snow ✓
1.2.2 Mouth ✗
1.2.3 Third order ✓ **2**

1.3.1 Katabatic ✗
1.3.2 **1** occurs during the day while **2** occurs at night ✓✓

1.3.3 Cold air rolls down into the valley and forms an inversion ✓✓



Air flows downslope ✓✓ **6**

1.4.1 Shape of front concave ✗
Steep gradient of front ✓

1.4.2 Warm air undercuts the cold air ✗

1.4.3 Air behind the cold front is colder ✓✓ than the air in front. Cold air moves faster ✓✓ than warm air ahead of it. Cold front catches up with the warm front. ✓✓ **7**

1.5.1 (a) A river that only flows all year round ✗

(b) The river channel is wide ✗

(c) Regularity ✓✓ of rainfall and the soil type ✓✓ over which the streams flow.

1.5.2 Gauteng ✓ and the Eastern Cape ✗

1.5.3 The cost of food production will increase at it is costly to buy purified water. Farmers will have to buy more chemicals ✓✓ to purify water. Chemicals cost a lot and this ✓✓ will increase production costs. It will be costly to purify water ✓✓ for use in electricity generation. These costs will be included in electricity prices. Costs will increase the price of electricity during production. M There will be less clean water to generate hydro- electricity. **13**

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SECTION A: CLIMATE AND WEATHER AND GEOMORPHOLOGY

QUESTION 1: CLIMATE AND WEATHER

1.1	1.1.1	B (1)	
	1.1.2	C (1)	
	1.1.3	B (1)	
	1.1.4	B (1)	
	1.1.5	C (1)	
	1.1.6	A (1)	
	1.1.7	D (1)	
	1.1.8	C (1)	(8 x 1) (8)
1.2	1.2.1	Z (1)	
	1.2.2	Y (1)	
	1.2.3	Y (1)	
	1.2.4	Y (1)	
	1.2.5	Z (1)	
	1.2.6	Y (1)	
	1.2.7	Z (1)	(7 x 1) (7)

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1.3	1.3.1	West to east/eastwards (1)	(1 x 1) (1)
	1.3.2	Driven by the westerlies (2)	(1 x 2) (2)
	1.3.3 QUOTE EVIDENCE FOR LOCALISED FLOODING	'series of cold fronts' (2) 'widespread rain' (2) '20-30 mm of rain' (2) 'more than 50 mm' (2) 'waterlogged' (2) 'heavy rainfall' (2) **[ANY ONE]**	(1 x 2) (2)
	1.3.4 WHY DO COLD FRONTS AFFECT WC MAINLY IN WINTER?	Shifting of the ITCZ to the north (2) South Atlantic High has migrated northwards (2) Mid-latitude cyclones migrate further north (2) Pressure belts follow the perpendicular sunrays northwards (2). **[ANY ONE]**	(1 x 2) (2)
	1.3.5 HOW WILL SNOWFALL INFLUENCE WATER SUPPLY?	Increases (2)	(1 x 2) (2)
	1.3.6 DESCRIBE THE **PROCESSES** THAT RESULTED IN CB CLOUDS	The cold air undercuts the warm air (2) Rapid upliftment of warm air occurs (2) Rising warm air cools and condenses (2) Condensation results in cumulonimbus clouds (2) **[ANY THREE]**	(3 x 2) (6)
1.4	1.4.1	Coastal Low (1)	(1 x 1) (1)
	1.4.2	It is a **moving** system (2)	(1 x 2) (2)
	1.4.3 WHY IS THERE A GREATER POSSIBILITY OF PRECIPITATION AT B THAN C?	Moist air is carried over the land at B (2) Onshore winds at B (2) Dry air is moving from land to sea at C (2) Offshore winds at C (2) **[ANY TWO]**	(2 x 2) (4)
	1.4.4 EVIDENCE FOR TYPICAL SUMMER CONITIONS	23.01.2022 (Date) (2) The high pressure cells are in a Southerly position (2) Cold fronts/mid-latitude cyclones are further south (2) A tropical depression is evident (2) **[ANY TWO]**	(2 x 2) (4)
	1.4.5 USE THE PRESSURE READINGS TO SUPPORT YOUR ANSWER	(a) E (2) (b) E has a higher pressure (1032hPa) reading than D (1024hPa) (2) D has a lower pressure (1024hPa) reading than E (1032hPa) (2) **[ANY ONE]**	(1 x 2) (2) (1 x 2) (2)

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1.5 1.5.1 DEFINITION URBAN HEAT ISLAND

An urban area of higher temperature surrounded by a rural area of lower temperature (2)
[CONCEPT] (1 x 2) (2)

1.5.2 **Accept:** 34,6 °C to 34,8 °C (1) (1 x 1) (1)

1.5.3 **EXPLAIN** TWO WAYS **BUILDINGS** AT Z CONTRIBUTE TO HIGH TEMPERATURES

High building density traps in heat (2)
Tall buildings create a larger surface area for heating (2)
Multiple reflections of heat between the buildings (2)
Dark painted buildings/roofs absorb heat (2)
Building materials (accept examples) result in more heat being absorbed (2)
Taller buildings limit air flow in cities (2)
Air conditioning used in the buildings cause more heat (2)
[ANY TWO] (2 x 2) (4)

1.5.4 **PARAGRAPH**

SUGGEST SUSTAINABLE BUILDING STRATEGIES TO REDUCE URBAN HEAT ISLAND EFFECT

Paint roofs or buildings with light colours (2)
Develop rooftop gardens (2)
Replace tar and concrete with cobble stones (2)
Minimise large glass windows/ structures (2)
Using green energy in buildings (2)
Use low energy light bulbs (2)
Decrease building density (2)
Improve insolation in buildings (2)
Use eco-friendly/natural building materials (2)
Restrict the height of buildings (2)
Use mirrored glass which is more reflective (2)
Planned areas for parks/planting trees/water features (2)
[ANY FOUR] (4 x 2) (8)
[60]

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QUESTION 2

2.1 2.1.1 D (1)

2.1.2 A (1)

2.1.3 C (1)

2.1.4 B (1)

2.1.5 C (1)

2.1.6 A (1)

2.1.7 D (1)

2.1.8 A (1) (8 x 1) (8)

2.2 2.2.1 D (1)

2.2.2 C (1)

2.2.3 E (1)

2.2.4 F/A (1)

2.2.5 B (1)

2.2.6 G (1)

2.2.7 A (1) (7 x 1) (7)

2.3 2.3.1 The **side view** of a river from **source to mouth** (2)
LONGITUDINAL PROFILE **[CONCEPT]** (1 x 2) (2)

2.3.2 Smooth/Graded (1)
STATE TWO CHARACTERISTICS OF LONGITUDINAL PROFILE EVIDENT IN SKETCH Concave shaped (1)
Steeper in the high-lying area (1)
Gentle in the low-lying area (1)
(Accept) Permanent base level (1)
(Accept) No temporary base levels/ waterfall (1)
[ANY TWO] (2 x 1) (2)

2.3.3 Graded (1) (1 x 1) (1)

2.3.4 Temporary base levels not evident (2)
GIVE A REASON FOR ANSWER It has a smooth concave profile (2)
[ANY ONE] (1 x 2) (2)

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2.3.5 Temporary base level: waterfall (1)
Permanent base level: sea (1) (2 x 1) (2)

2.3.6 **DESCRIBE THE PROCESSES THAT RIVER IN SKETCH B AND C UNDERGOES TO REACH A GRADED STATE**
Erosion of softer layers of rock below waterfall (2)
Headward/backward erosion will cause the waterfall to migrate upstream (2)
Downward erosion deepens the plunge pool (2)
Hard layer of rock falls into plunge pool as not supported by underlying softer rock (2)
Deposition of sediments in plunge pool and continues towards the lower course (2)
Equilibrium between erosion and deposition will maintain a graded state (2)
[ANY THREE] (3 x 2) (6)

2.4 2.4.1 **RIVER REJUVENATION**
The **increase** in the energy of a river to **erode** (2)
[CONCEPT] (1 x 2) (2)

2.4.2 **STATE ONE FACTOR THAT CAUSES RIVER REJUVINATION**
Change in the gradient (1)
Accept: Isostatic uplift (1)
Drop in sea level (1)
Increase in volume of water (1)
Accept: River capture (1)
Increase in precipitation (1)
Fast flowing river joining (1)
[ANY ONE] (1 x 1) (1)

2.4.3 **DESCRIBE RELATIONSHIP BETWEEN VERTICAL EROSION AND DEPTH**
Directly proportional relationship (2)
The greater the vertical erosion the deeper the valley (2)
[ANY ONE] (1 x 2) (2)

2.4.4 **IDENTIFY TWO FEATURES OF REJUVINATION**
Terraces (1)
Valley in a valley (1) (2 x 1) (2)

2.4.5 **EXPLAIN HOW REJUVINATION RESPONSIBLE FOR FORMATION OF FEATURES**
As a result of vertical erosion the floor of the old river valley forms terraces on either side of the river (2)
Due to vertical erosion a new valley is carved into the old valley resulting in a valley in a valley (2) (2 x 2) (4)

2.4.6 **WHAT NEGATIVE IMPACT-REJUVINATED RIVER-ON PHYSICAL ENVIRONMENT**
Increase in erosion (2)
Erosion results in the loss of fertile soil/arable land (2)
Erodes/collapse of river banks (2)
River can overflow its banks (2)
Soils become saturated/water-logged (2)
Destruction of fluvial landforms (accept examples) (2)
Disruption of food chains / food webs (2)
Damages the natural vegetation/biodiversity (2)
Less land available for natural habitats (2)
[ANY TWO] (2 x 2) (4)

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2.5 2.5.1 The management of water sources (2)
RIVER MANAGMENT
[CONCEPT] (1 x 2) (2)

2.5.2 Ten million (1) (1 x 1) (1)

2.5.3 '30 dams along the course supply three provinces with water'
QUOTE USAGE OF WATER FROM OLIFANTS RIVER
'irrigates farms' (1)
'powers Eskom's coal-fired power stations' (1)
'supplying water to valleys' (1)
'irrigating farms' (1)
'providing water to the Kruger National Park' (1)
[ANY TWO] (2 x 1) (2)

2.5.4 Water will be polluted (accept examples) (2)
WHAT **NEGATIVE IMPACT-** ESKOM'S COAL FIRED POWER STATIONS –ON OLIFANTS RIVER
Quality of the water decreases (2)
It raises the temperature of the water (2)
It will influence the aquatic ecosystems negatively (accept examples) (2)
Negative impact on biodiversity (2)
[ANY ONE] (1 x 2) (2)

2.5.5 Create a buffer zone to prevent development too close to the river (2)
PARAGRAPH- **EXPLAIN** FOUR STRATEGIES COULD BE IMPLEMENTED SO THAT THE OLIFANTS RIVER BECOMES A SUSTAINABLE SOURCE OF WATER
Implement legislation to discourage pollution of the river (2)
Issue fines for illegal dumping/polluting of the river (2)
Monitoring/testing the quality of the water to ensure it is suitable for domestic and industrial use (2)
Educate farmers on sustainable farming methods (2)
Educating people about the importance of river management (2)
Awareness campaigns to prevent dumping and pollution of river (accept examples) (2)
Encourage or promote the planting of trees to reduce surface run-off or soil erosion (2)
Protect natural vegetation to reduce surface run-off or soil erosion (2)
Promote recycling of waste water before releasing back into river (2)
Conserve wetlands to preserve the quality of the water (2)
[ANY FOUR] (4 x 2) (8)
[60]

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QUESTION 3

3.1 3.1.1 C (1) (1 x 1) (1)

3.1.2 B (1) (1 x 1) (1)

3.1.3 Formula: Area = **Length x Breadth**

Area = 2.1 km x 1.9 km
= 3.99 km² (1) (1 x 1) (1)

3.1.4 The scale of the topographic map is (5 times) smaller (1)
The scale of the orthophoto map is (5 times) larger (1)
[ANY ONE] (1 x 1) (1)

3.1.5 Formula: **Average gradient** = $\frac{\textbf{vertical interval (VI)}}{\textbf{horizontal equivalent (HE)}}$

VI: 70m – 20m = 50 (1) m

HE: 5.4 (1) cm x 100m (RANGE: 5.3cm – 5.5cm)
= 540 (1) m (RANGE: 530m – 550m)

Average Gradient = $\frac{50(m)}{540\ (m)}$ (1) (For correct substitution)

Average Gradient = $\frac{1}{10.8}$

Average Gradient = 1:10.8 (1) (RANGE: 1:10.6 – 1:11.0) (5 x 1) (5)

3.1.6 Steep (1) (1 x 1) (1)

3.2 3.2.1 Katabatic wind (1) (1 x 1) (1)

3.2.2 EXPLAIN HOW THE WIND IDENTIFIED NEGATIVELY INDLUENCES CROPS
Decreases temperature which might affect crops that are sensitive to low temperatures (2)
Can contribute to the formation of frost that might damage crops (2)
[ANY ONE] (1 x 2) (2)

3.2.3 Small (1) (1 x 1) (1)

3.2.4 WHY DOES HOLIDAY RESORT EXPERIENCE MODERATE CLIMATE
Close proximity to the ocean (2)
The influence of the onshore airflow (2)
[ANY ONE] (1 x 2) (2)

3.2.5 C (1) (1 x 1) (1)

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	3.2.6 GIVE EVIDENCE FROM **A4**/ **B4** FOR LOWER COURSE OF RIVER	River is wider (2) River is meandering (2) Evidence of deposition (2) Presence of mud flats (2) Evidence of a flood plain (2) Gradual/flat slope (2) **[ANY ONE]**	(1 x 2) (2)
	3.2.7	A (1)	(1 x 1) (1)
	3.2.8 CONVEX-EVIDENCE-ORTHOPHOTO	Contour lines are far apart at high lying area (**8**) and close together at low lying area (**9**) (2)	(1 x 2) (2)
3.3	3.3.1	pixels (1)	(1 x 1) (1)
	3.3.2	A (1)	(1 x 1) (1)
	3.3.3 GIVE REASON FOR HIGH RESOLUTION- A	Image **A** has a higher amount of pixels (2) Image **A** has more clarity (clearly visible) (2) **[ANY ONE]**	(1 x 2) (2)
	3.3.4 DATA LAYER	A layer of information (based on a theme) (2) **[CONCEPT]**	(1 x 2) (2)
	3.3.5 **HOW-** DRAINAGE DATA LAYER ENCOURAGES CROP FARMING	Supply water for irrigation of crops (2) There is no need for water infrastructure like pipe lines/furrows/canals (2) The layer will supply information on water supply for the purpose of cultivation (2)	(1 x 2) (2)

[30]

TOTAL: 150

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basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

GEOGRAPHY P1

NOVEMBER 2021

MARKS: 150

TIME: 3 hours

This question paper consists of 19 pages.

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INSTRUCTIONS AND INFORMATION

1. This question paper consists of TWO SECTIONS:

   SECTION A:
   QUESTION 1: Climate and Weather (60)
   QUESTION 2: Geomorphology (60)

   SECTION B:
   QUESTION 3: Geographical Skills and Techniques (30)

2. Answer all THREE questions.

3. ALL diagrams are included in the QUESTION PAPER.

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. Do NOT write in the margins of the ANSWER BOOK.

8. Draw fully labelled diagrams when instructed to do so.

9. Answer in FULL SENTENCES, except when you have to state, name, identify or list.

10. Units of measurement MUST be indicated in your final answer, e.g. 1 020 hPa, 14 °C and 45 m.

11. You may use a non-programmable calculator.

12. You may use a magnifying glass.

13. Write neatly and legibly.

SPECIFIC INSTRUCTIONS AND INFORMATION FOR SECTION B

14. A 1 : 50 000 topographic map 2331CC PHALABORWA and a 1 : 10 000 orthophoto map 2331 CC 18 PHALABORWA (NORTH) are provided.

15. The area demarcated in RED/BLACK on the topographic map represents the area covered by the orthophoto map.

16. Show ALL calculations. Marks will be allocated for this.

17 You must hand in the topographic and the orthophoto map to the invigilator at the end of this examination session.

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SECTION A: CLIMATE AND WEATHER AND GEOMORPHOLOGY

QUESTION 1: CLIMATE AND WEATHER

1.1 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 numbers (1.1.1 to 1.1.8) in the ANSWER BOOK, e.g. 1.1.9 D.

1.1.1 A mid-latitude cyclone occurs between … north and south of the equator.

A 5° and 25°
B 30° and 60°
C 0° and 5°
D 60° and 90°

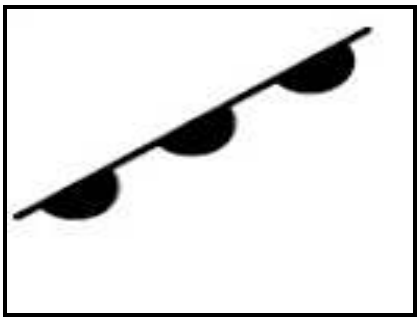
1.1.2 A mid-latitude cyclone is steered (driven) by the …

A easterlies.
B polar easterlies.
C trade winds.
D westerlies.

1.1.3 The change in wind direction of the mid-latitude cyclone in the Southern Hemisphere is called …

A veering.
B backing.
C rotating.
D converging.

1.1.4 The front below is a … front.



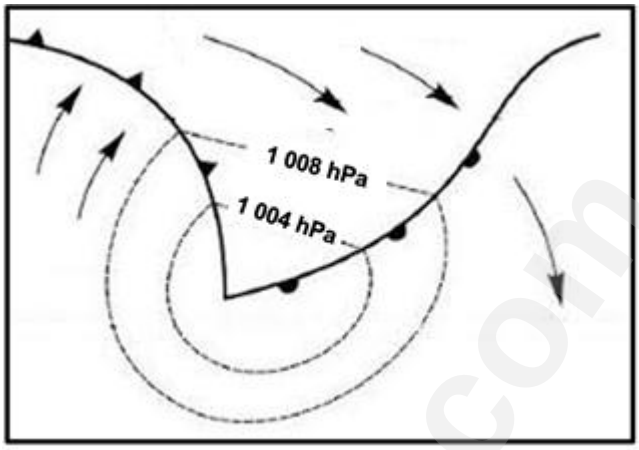
A cold
B occluded
C warm
D stationary

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1.1.5 The mid-latitude cyclone below is in the … stage.



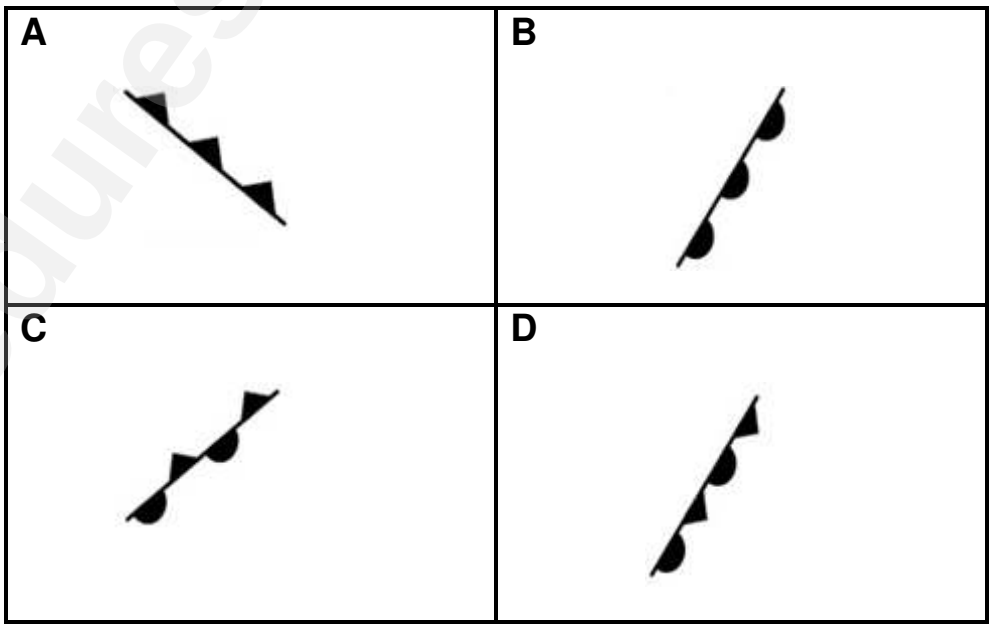
[Source: https://www.google.com/search?q=mid-latitude]

A initial
B wave
C mature
D occluded

1.1.6 The conditions experienced behind a cold front are a/an …

A increase in pressure and decrease in temperature.
B decrease in pressure and decrease in temperature.
C increase in pressure and increase in temperature.
D decrease in pressure and increase in temperature.

1.1.7 Which symbol below illustrates the merging of a cold and warm front?

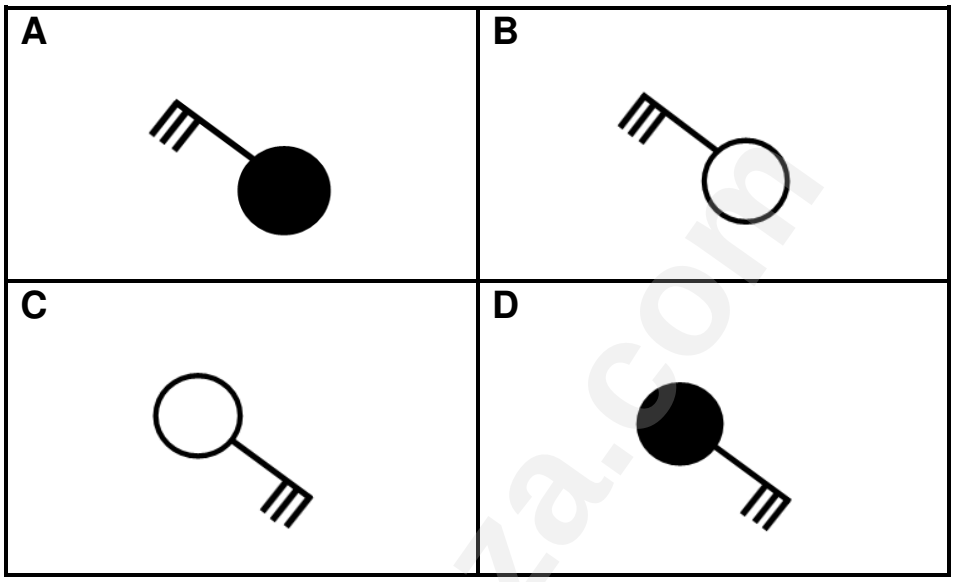


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1.1.8 The station model generally associated with a cold front in the Southern Hemisphere:



(8 x 1) (8)

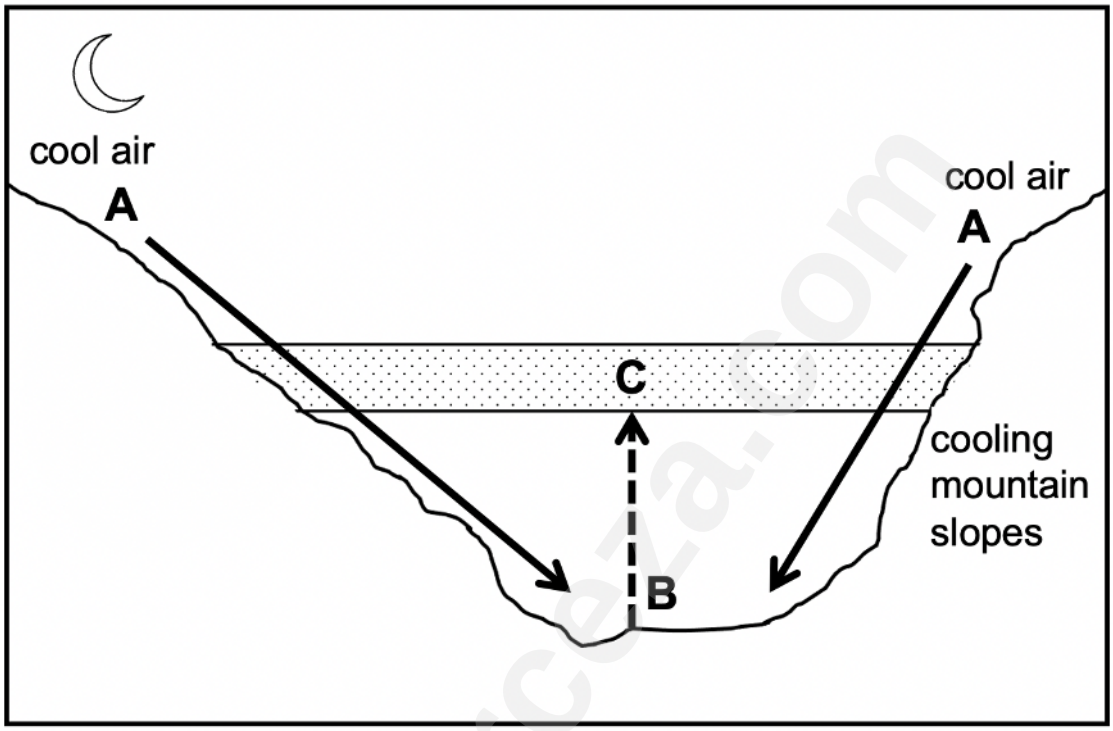
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1.2 Choose the correct word(s) from those given in brackets. Write only the word(s) next to the question numbers (1.2.1 to 1.2.7) in the ANSWER BOOK.



[Source: Examiner's own sketch]

1.2.1 Air at **A** cools because of (solar/terrestrial) radiation.

1.2.2 Downward movement of air along the valley slopes occurs during the (night/day).

1.2.3 Air movement from **A** to **B** results in a/an (anabatic/katabatic) wind.

1.2.4 Dew point temperature drops to below freezing point at (**A**/**B**) at night.

1.2.5 Precipitation that forms at **B** when the dew point temperature drops below 0 °C is (frost/radiation fog).

1.2.6 Displaced air from the valley results in a/an (inversion layer/thermal belt) developing at **C**.

1.2.7 Layer **C** is more developed during the (day/night). (7 x 1) (7)

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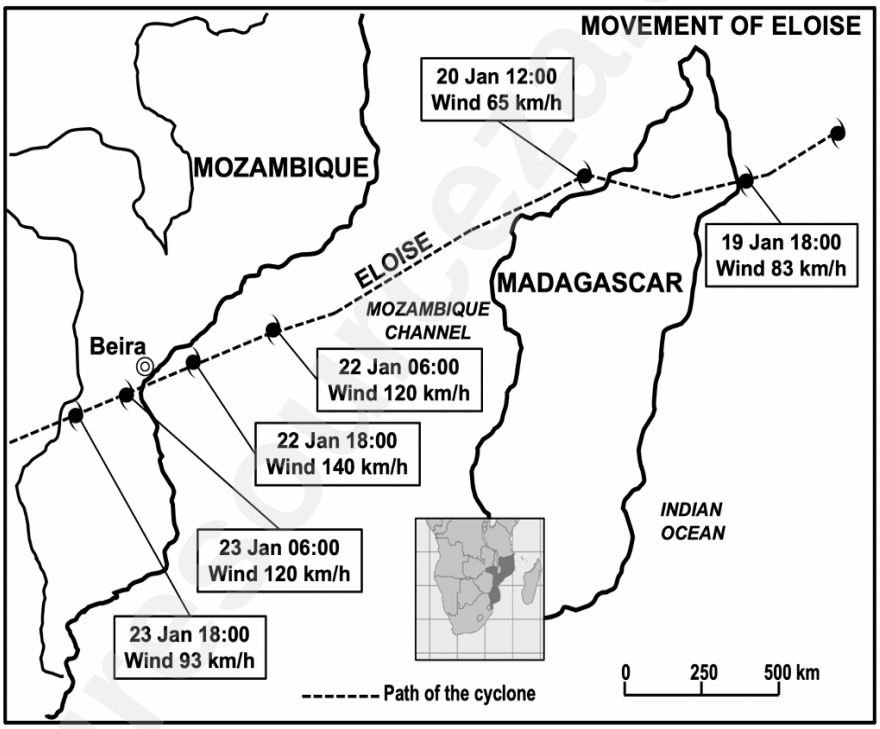
1.3 Refer to the infographic on Tropical Cyclone Eloise.

DESCRIPTION OF THE DISASTER

Tropical Cyclone Eloise made landfall on 23 January 2021, 20 km south of Beira in Mozambique, as a category 2 tropical cyclone. Wind speeds of up to 160 km/h were recorded. Tropical Cyclone Eloise also caused heavy rainfall with 250 mm of rain in 24 hours. Other areas were already flooded ahead of Eloise's landfall, resulting in thousands of displaced people.

ELOISE IN NUMBERS

Affected	441 686 people
Displaced people	42 327
Deaths	7
Injured	15
Houses destroyed	20 798
Houses damaged	35 566
Houses flooded	27 127
Impassable roads	63
Flooded areas	219 124 ha



1.3.1 Give ONE piece of evidence in the infographic that the tropical cyclone is in the Southern Hemisphere. (1 x 1) (1)

1.3.2 State TWO weather conditions associated with tropical cyclones indicated in the infographic. (2 x 1) (2)

1.3.3 Give ONE reason for the decrease in wind speed from 19 January to 20 January 2021. (1 x 2) (2)

1.3.4 Account for the increase in wind speed of Tropical Cyclone Eloise from the 20 January to 22 January 2021. (2 x 2) (4)

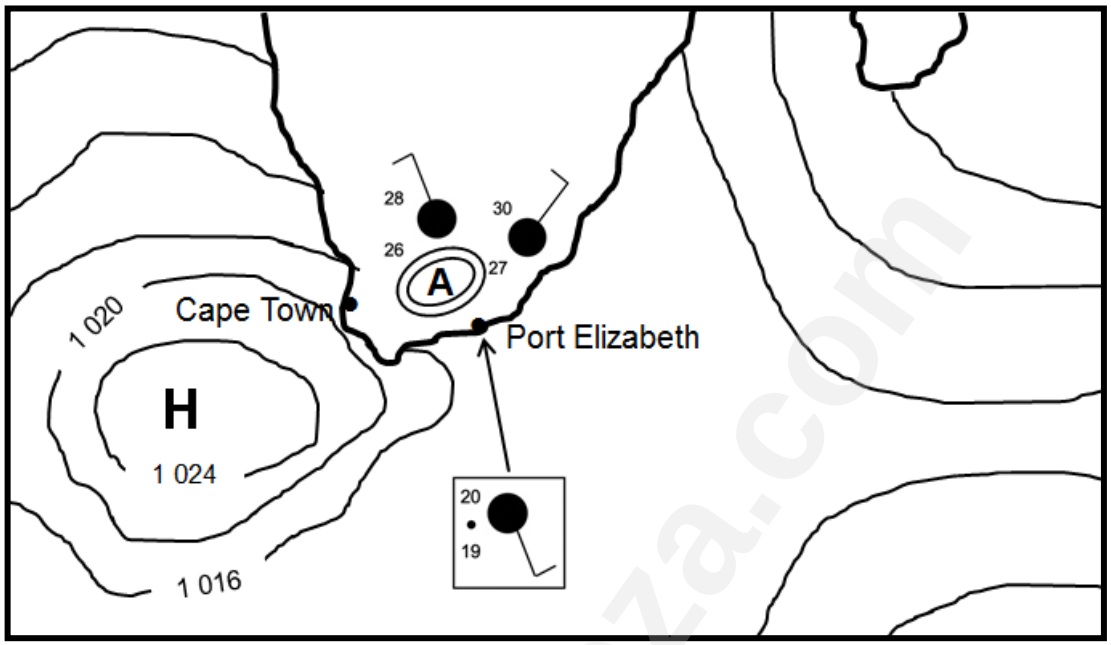
1.3.5 According to the infographic the negative impact of Tropical Cyclone Eloise was devastating. Suggest THREE strategies that could be put in place to reduce this impact. (3 x 2) (6)

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1.4 Refer to the South African synoptic weather map.



[Source: Examiner's own sketch]

1.4.1 Identify low-pressure system **A** on the synoptic weather map. (1 x 1) (1)

1.4.2 Give a reason for the formation of this low-pressure system over the interior. (1 x 2) (2)

1.4.3 Give evidence from the synoptic weather map that the South Atlantic high is ridging. (1 x 2) (2)

1.4 4 Why does the ridging of the South Atlantic high result in onshore winds? (2 x 2) (4)

1.4.5 Describe the weather conditions at Port Elizabeth as a result of the onshore winds. (3 x 2) (6)

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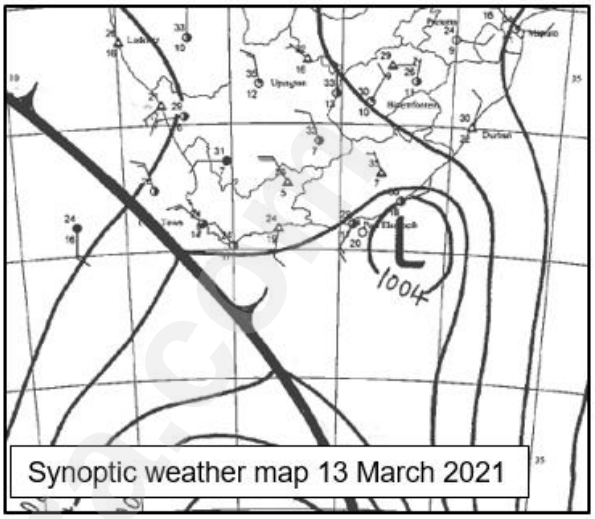
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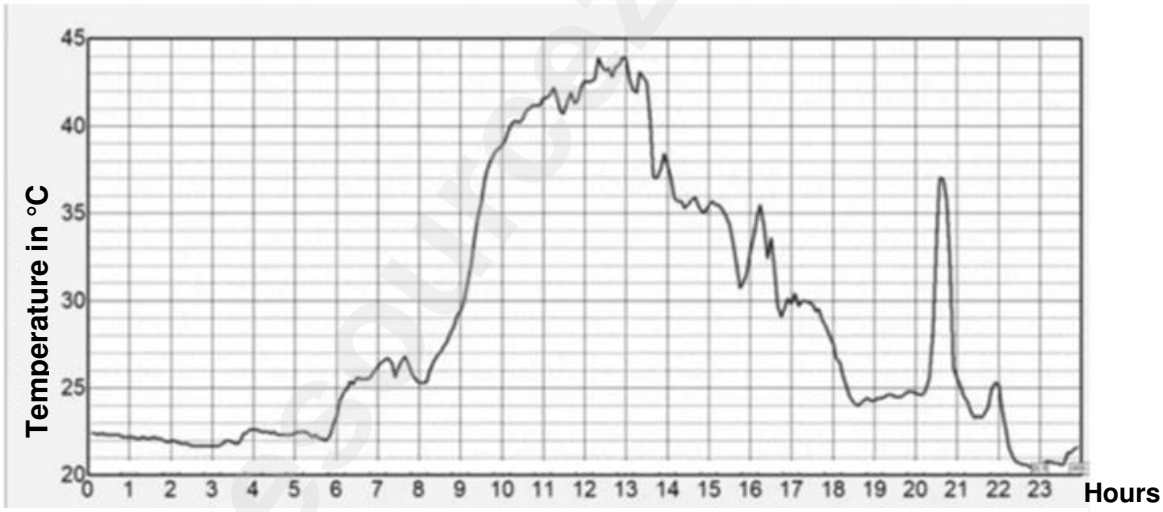
1.5 Refer to the infographic on the South African berg wind.

Record-breaking heatwave hits East London
Matthew Field
18 March 2021

East London residents were subject to sweltering heat last Saturday after a record-breaking heatwave resulted in a peak temperature of 43,9 °C. According to the South African Weather Service (SAWS), the heatwave was a result of berg wind conditions, when hot dry winds blow down to the coast from the country's high central plateau.



Synoptic weather map 13 March 2021



A graph tracking the temperature in East London over the course of Saturday 13 March
Picture: SA Weather Service

1.5.1 Name TWO pressure systems that are necessary for berg winds to develop. (2 x 1) (2)

1.5.2 Determine the highest temperature that was recorded on 13 March 2021. (1 x 1) (1)

1.5.3 What role did the escarpment play in increasing the temperature of the berg wind between 10:00 and 14:00? (2 x 2) (4)

1.5.4 In a paragraph of approximately EIGHT lines, explain the impact of berg wind conditions on the physical (natural) environment. (4 x 2) (8)

[60]

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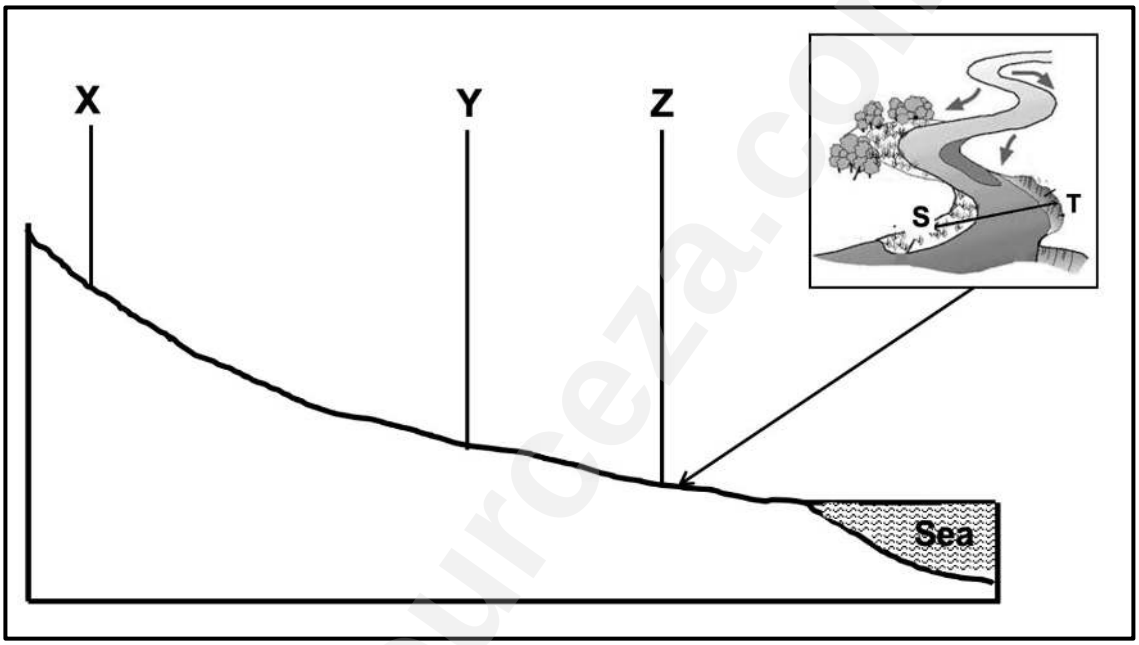
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QUESTION 2: GEOMORPHOLOGY

2.1 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 numbers (2.1.1 to 2.1.8) in the ANSWER BOOK, e.g. 2.1.9 D.

Points **X**, **Y** and **Z** shows the different stages (courses) from the source to the mouth of a river and the points **S**-**T** along the meander found at **Z**.



[Source: Examiner's own sketch]

2.1.1 The profile from the source to the mouth shows the … of the river.

A volume
B length
C width
D depth

2.1.2 The stages (courses) represented by **X**, **Y** and **Z** are …

A middle, upper, lower.
B lower, middle, upper.
C upper, middle, lower.
D upper, lower, middle.

2.1.3 … describes the river valley at **X**.

A Wide and shallow
B Wide and deep
C Narrow and shallow
D Narrow and deep

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2.1.4 At **Z** the river has a laminar flow due to a … riverbed.

A rough and uneven
B steep and even
C gently sloping and even
D rocky (rock-filled)

2.1.5 Slope **T** on the meander is the ... slope.

A slip-off
B convex
C undercut
D gentle

2.1.6 Slope **S** on the meander is associated with a …

A steep gradient and deposition.
B gentle gradient and erosion.
C concave slope with erosion.
D convex slope with deposition.

2.1.7 The narrowing of the neck in the meander will eventually form a/an …

A braided stream.
B ox-bow lake.
C flood plain.
D river delta.

2.1.8 The meander will migrate … on the floodplain.

A upstream
B laterally
C downstream
D headwards (8 x 1) (8)

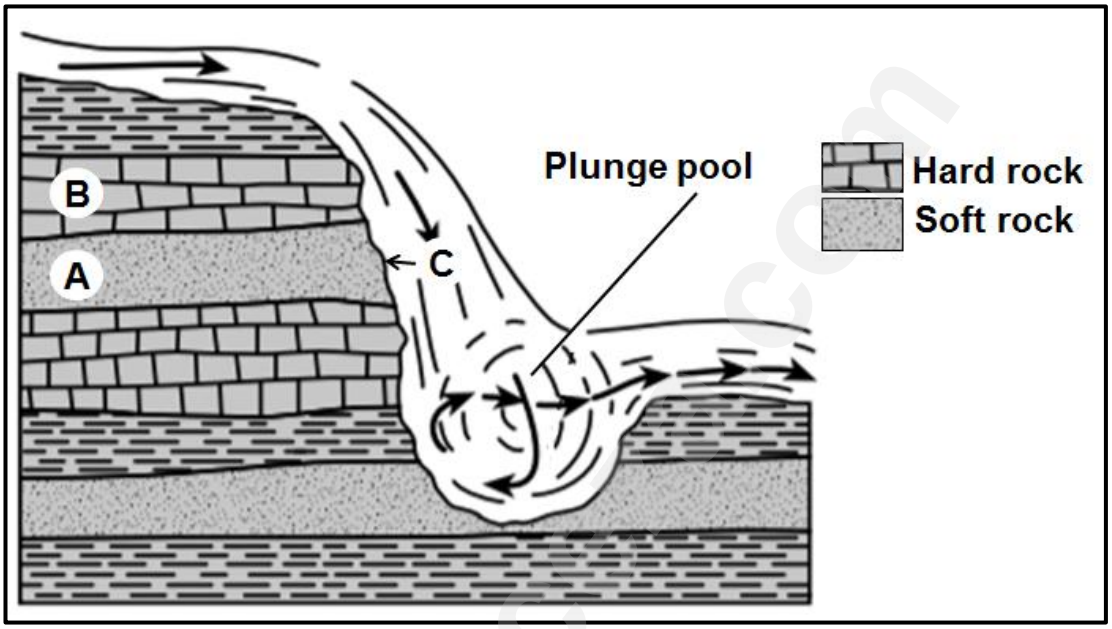
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2.2 Refer to the sketch, which shows a waterfall with a plunge pool. Complete the statements in COLUMN A with the options in COLUMN B. Write only **X** or **Y** next to the question numbers (2.2.1 to 2.2.7) in the ANSWER BOOK, e.g. 2.2.8 Y.



[Source: Examiner's own sketch]

	COLUMN A	COLUMN B
2.2.1	Waterfalls form when …	**X:** there are alternate layers of hard and soft rock. **Y:** there are only soft rocks.
2.2.2	Waterfalls are likely to be found in the …	**X:** lower course. **Y:** upper course.
2.2.3	… refers to the softer rock that erodes faster.	**X:** Rock type **A** **Y:** Rock type **B**
2.2.4	The plunge pool is formed by …	**X:** deposition. **Y:** erosion.
2.2.5	When the softer rock at **C** erodes, it will cause ...	**X:** the rock at **A** to collapse into the plunge pool. **Y:** waterfalls to retreat downstream.
2.2.6	The retreat of the waterfall will result in the formation of a …	**X:** gorge. **Y:** rapid.
2.2.7	An advantage of a waterfall is …	**X:** hydro-electricity. **Y:** promoting water transport.

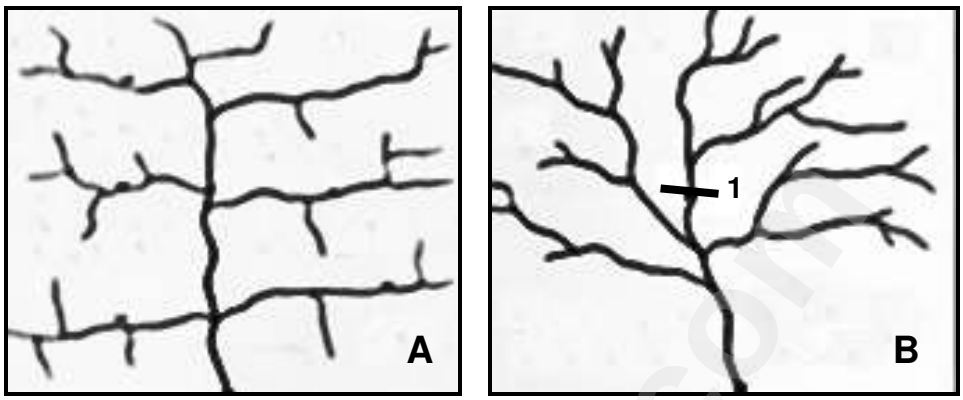
(7 x 1) (7)

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2.3 Refer to the diagrams showing drainage patterns.



[Adapted from https://www.google.com/search?q=trellis+and+dendritic+drainage+patterns]

2.3.1 Identify drainage patterns **A** and **B**. (2 x 1) (2)

2.3.2 Differentiate between the underlying rock structure of drainage patterns **A** and **B** respectively. (2 x 2) (4)

2.3.3 Why are the tributaries of the main stream parallel to each other in drainage pattern **A**? (1 x 2) (2)

2.3.4 Determine the stream order at point **1** in drainage pattern **B**. (1 x 2) (2)

2.3.5 Choose the CORRECT word between brackets to make the statement TRUE.

The higher the stream order, the (higher/lower) the drainage density. (1 x 1) (1)

2.3.6 Refer to drainage pattern **B** and describe the relationship between;

(a) Drainage density and low rainfall (2)

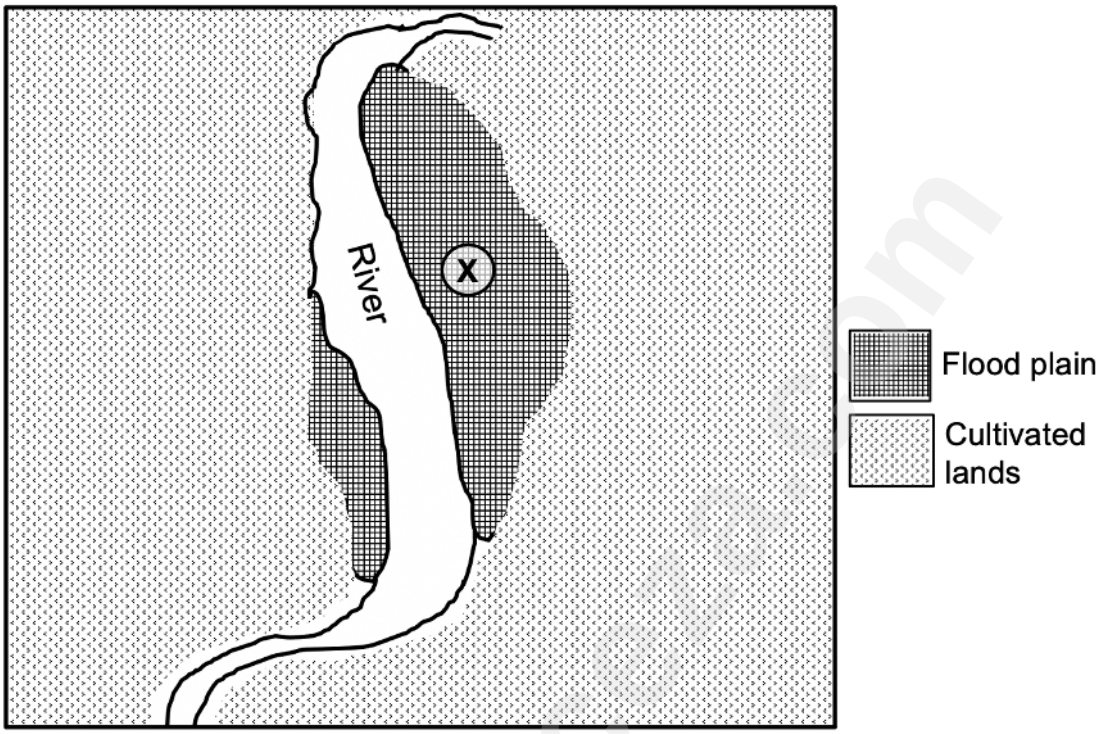
(b) Drainage density and steep gradient (2)

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2.4 Refer to the diagram of a flood plain.



2.4.1 State the geomorphological process that gave rise to the formation of the flood plain. (1 x 1) (1)

2.4.2 Describe the gradient at **X**. (1 x 2) (2)

2.4.3 Suggest TWO reasons for the wide flood plain at **X**. (2 x 2) (4)

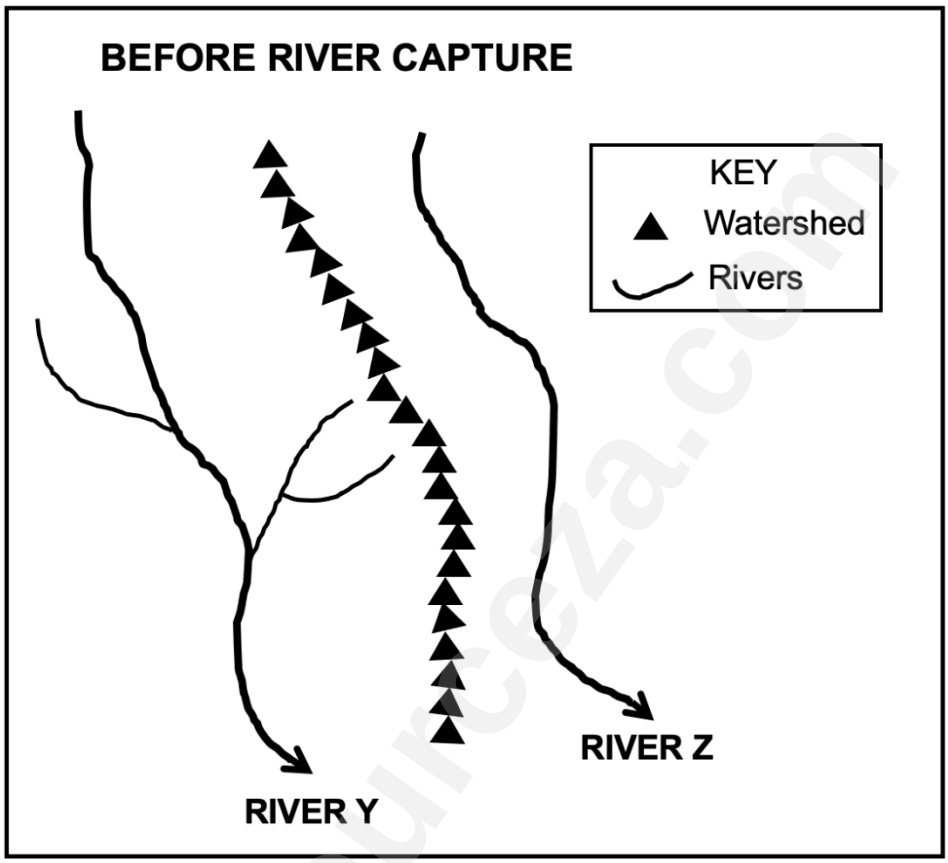
2.4.4 In a paragraph of approximately EIGHT lines, explain the physical (natural) impact of flooding on the flood plain. (4 x 2) (8)

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2.5 Refer to the sketch map of rivers **Y** and **Z** before river capture has taken place.



[Source: Examiner's own sketch]

2.5.1 Define the concept *river capture*. (1 x 2) (2)

2.5.2 State ONE condition needed for river capture to take place. (1 x 2) (2)

2.5.3 Draw a sketch to illustrate the area after river capture has taken place.

Marks will be awarded for the accuracy of the sketch and indicating the following labels:

- Elbow of capture
- Misfit stream
- Wind gap (1 + 3) (4)

2.5.4 Will river **Y** or **Z** experience rejuvenation after river capture? (1 x 1) (1)

2.5.5 Give a reason for your answer to QUESTION 2.5.4. (1 x 2) (2)

2.5.6 Refer to your answer to QUESTION 2.5.5 and explain the impact of the change on the captor stream. (2 x 2) (4)

[60]

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SECTION B

QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES

GENERAL INFORMATION ON PHALABORWA



Coordinates: 23°52' S ; 31°04' E

Phalaborwa is a town in Limpopo, South Africa. It is located near the confluence of the Ga-Selati River and the Olifants River, along the western border of the Kruger National Park in the Lowveld. Tourism and wildlife play dominant roles in the life of this town. Attractions, such as the Blyde River Canyon, the Three Rondavels, God's Window, Bourke's Luck Potholes and river cruises on the Olifants River, make Phalaborwa an important tourist destination in this province.

[Adapted from https://en.wikipedia.org/wiki/Phalaborwa]

The following English terms and their Afrikaans translations are shown on the topographic map:

ENGLISH	AFRIKAANS
Diggings	Uitgrawings
Golf course	Gholfbaan
River	Rivier
Sewerage works	Rioolwerke
Estate	Landgoed
Salt pan	Soutpan
Nature reserve	Natuurreservaat

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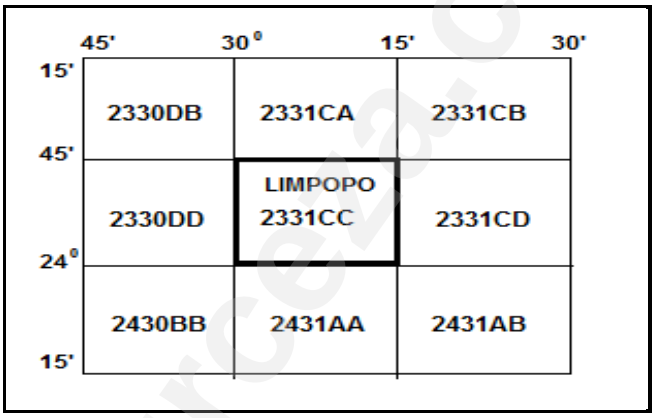
3.1 MAP SKILLS AND CALCULATIONS

3.1.1 In which province is Phalaborwa? (1 x 1) (1)

3.1.2 31 in the map index 2331CC refers to …

A longitude.
B latitude.
C graticule.
D code. (1 x 1) (1)

3.1.3 What is the map index south-west of 2331CC?



A 2331CD
B 2431AB
C 2430BB
D 2330DB (1 x 1) (1)

3.1.4 Calculate the area covered by feature **6** in blocks **D4/5** and **E4/5** on the orthophoto map in m².

Use the following information:
Measured length (map distance) = 2 cm

Formula: **Area = Length (L) x Breadth (B)** (4 x 1) (4)

3.1.5 Why does feature **6** appear larger on the orthophoto map than on the topographic map? (1 x 1) (1)

3.1.6 Determine the true bearing from spot height 445, **I** in block **A4** to spot height 421, **J** in block **C4** on the topographic map. (1 x 1) (1)

3.1.7 The magnetic declination for 2021 is 17°10' west of true north. Use the true bearing in your answer to QUESTION 3.1.6 to calculate the magnetic bearing.

Formula: **MB = True bearing (TB) + Magnetic declination (MD)**
(1 x 1) (1)

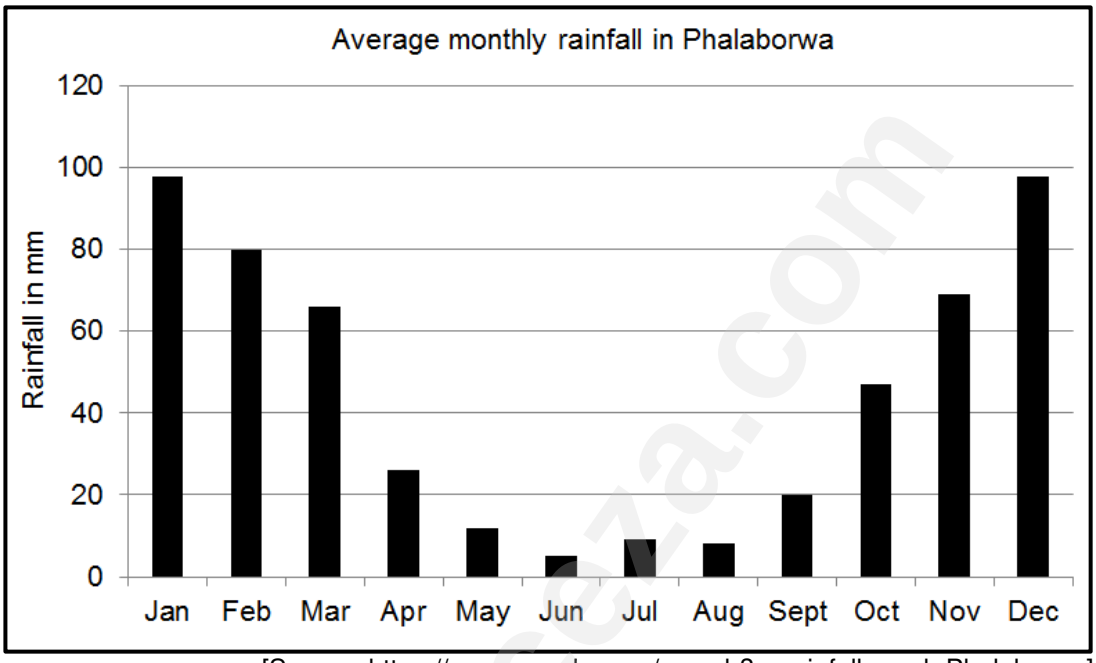
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3.2 MAP INTERPRETATION

Refer to the seasonal rainfall graph and the topographic map of Phalaborwa.



[Source: https://www.google.com/search?q=rainfall graph Phalaborwa]

3.2.1 (a) In which season is the lowest rainfall experienced in Phalaborwa? (1 x 1) (1)

(b) Identify the type of river that show that the mapped area receives seasonal rainfall. (1 x 1) (1)

(c) State ONE strategy in block **A2** that has been implemented to overcome water shortages. (1 x 2) (2)

3.2.2 The wind direction in blocks **B4** and **C4** on the topographic map is either north-north-west or south-south-east. Give evidence from the blocks above to support this statement. (1 x 2) (2)

3.2.3 Landform **7** in block **B1** on the orthophoto map is a …

A gap.
B pass.
C gorge.
D saddle. (1 x 1) (1)

3.2.4 The feature at **F** in block **C5** on the topographic map is a/an …

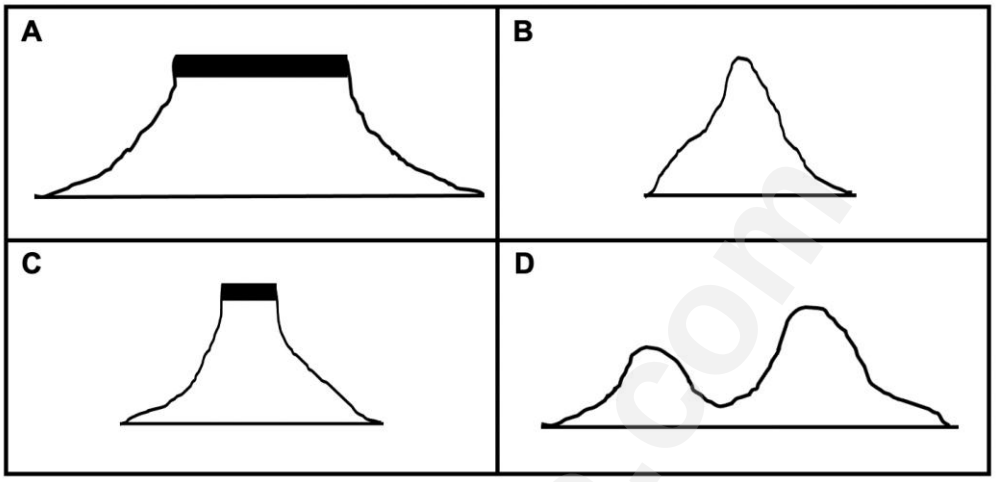
A interfluve.
B confluence.
C watershed.
D catchment. (1 x 1) (1)

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3.2.5 Match landform **8** in block **C1** on the orthophoto map with the correct freehand cross-section.



(1 x 1) (1)

Refer to block **A4** on the topographic map.

3.2.6 Give the general direction in which river **G** is flowing. (1 x 1) (1)

3.2.7 How do tributaries assist in identifying the direction in which river **G** flows? (1 x 2) (2)

3.3 GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

Refer to the demarcated area in block **A1** on the topographic map.

3.3.1 The non-perennial rivers in the demarcated area are an example of (raster/vector) data. (1 x 1) (1)

3.3.2 Which GIS concept describes the process of demarcation in block **A1**?

A Buffering
B Fencing
C Security
D Querying (1 x 1) (1)

3.3.3 Give evidence to show how this process was implemented to demarcate the non-perennial rivers. (1 x 2) (2)

Refer to block **B4** on the topographic map.

3.3.4 Identify TWO examples of data layers that were considered by GIS specialists before developing the landing strip in block **B4**. (2 x 1) (2)

3.3.5 Why was it important for GIS specialists to utilise the layers identified in QUESTION 3.3.4? (1 x 2) (2)

[30]

TOTAL: 150

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NATIONAL SENIOR CERTIFICATE

GRADE 12

GEOGRAPHY P1

NOVEMBER 2021

MARKING GUIDELINES

MARKS: 150

This marking guideline consists of 11 pages.

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SECTION A

QUESTION 1: CLIMATE AND WEATHER

1.1 1.1.1 B (1)

1.1.2 D (1)

1.1.3 B (1)

1.1.4 C (1)

1.1.5 C (1)

1.1.6 A (1)

1.1.7 D (1)

1.1.8 A (1) (8 x 1) (8)

1.2 1.2.1 terrestrial (1)

1.2.2 night (1)

1.2.3 katabatic (1)

1.2.4 B (1)

1.2.5 frost (1)

1.2.6 thermal belt (accept inversion layer) (1)

1.2.7 night (1) (7 x 1) (7)

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1.3 1.3.1 GIVE ONE PIECE OF EVIDENCE FOR S HEM

Date /January indicates summer (1)
Mozambique (1)
Madagascar (1)
Beira (in Mozambique) (1)
South-westerly movement (1)
Clockwise circulation symbol (1)
Located over the South Indian Ocean (1)
Mozambique channel (1)
Tropical Cyclone (Eloise) (1)
Map of Southern Africa (1)
[ANY ONE] (1 x 1) (1)

1.3.2 STATE TWO WEATHER CONDITIONS IN THE INFOGRAPHIC

Heavy rainfall / Rainfall of 250mm in 24 hours (1)
Wind speeds up to 140-160 km/hr (1)
(2 x 1) (2)

1.3.3 GIVE ONE REASON FOR DECREASE IN WIND SPEED

Increased frictional drag (2)
System moves over land (2)
Decrease in latent heat (2)
Decrease in moisture levels (2)
[**ANY ONE**] (1 x 2) (2)

1.3.4 ACCOUNT FOR INCREASE IN WIND SPEED

Movement over the warm Mozambique channel (2)
Less friction over Warm Mozambique channel/ ocean (2)
High temperatures/warm ocean results in increased evaporation (2)
Increased condensation results in the release of latent heat (2)
Latent heat drives the system and increases the wind speed (2)
[ANY TWO] (2 x 2) (4)

1.3.5 THREE STRATEGIES TO REDUCE IMPACT

PRECAUTIONARY MEASURES AND MANAGEMENT STRATEGIES
Early warning systems put in place (2)
Sandbags to reduce flooding (2)
Reinforcing existing infrastructure (2)
Awareness and education programmes (2)
Evacuation protocols and drills (2)
Stocking up of emergency supplies and necessities (2)
Identify high lying areas to evacuate people (2)
Build above flood lines/ coastal zoning (2)
Tracking the movement of the tropical cyclone
Good forecasting/ Use of media to update regularly (2)
Improve accessibility to evacuate people (2)
Move people to higher ground (2)
Development of good rescue and emergency services (2)
Storage/ provision of clean water and food supplies (2)
Rescue personnel, police, medical personnel on standby (2)
Maintain coastal vegetation to act as a buffer against storm surges (2)
Request National and international aid if necessary (2)

[ANY THREE- ACCEPT EXAMPLES] (3 x 2) (6)

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1.4 1.4.1 IDENTIFY LOW PRESSURE A
Thermal low (1)
Accept heat low (1) (1 x 1)
(1)

1.4.2 GIVE A REASON FOR THE FORMATION
High temperatures (2)
Rising warm air creates low pressure system (2)
[ANY ONE] (1 x 2) (2)

1.4.3 GIVE EVIDENCE FOR RIDGING
Elongation of isobars (2)
Bending of the isobars towards the low-pressure (2)
Outward extension/bulge of isobars away from the high pressure centre (2)
[**ANY ONE**] (1 x 2) (2)

1.4.4 WHY DOES RIDGING RESULT IN ONSHORE WINDS
Anticlockwise circulation (from the high pressure) (2)
Ridge extends towards the land (low pressure) (2)
Elongation of isobars occurs towards the coastline (2)
[ANY TWO] **(**2 x 2) (4)

1.4.5 DESCRIBE WEATHER CONDITIONS AT PE
Results in SSE winds (anti-clockwise circulation from the high pressure) (2)
Increase in wind speeds/strong /gale force winds (2)
Precipitation in the form of rainfall (2)
Possibility of drizzle (2)
Overcast conditions (increase in cloud cover) (2)
Increasing humidity (small difference between air temperature and dew point temperature) (2)
Decrease in air temperature (as air advects onto the land) (2)
[ANY THREE] (3 x 2) (6)

1.5 1.5.1 NAME TWO PRESSURE SYSTEMS TO SET UP BERG WINDS
Kalahari High (1)
Coastal low (1) Accept Mid-latitude cyclone (1)
(2 x 1)
(2)

1.5.2 DETERMINE HIGHEST TEMP
Accept in the range 43.9°C to 44,1 °C (1) (1 x 1)
(1)

1.5.3 WHAT ROLE DID THE ESCARPMENT PLAY IN INCREASING THE TEMP
The escarpment has a greater vertical height (elevation) (2)
Greater frictional drag as air moves down the escarpment (increases temperature) (2)
Air has a greater vertical descent down the escarpment (1200m-0m) and heats up more (2)
Increased heating (DALR at 1°C/100m) due to vertical distance of the escarpment (2)
[ANY TWO] (2 x 2) (4)

1.5.4 PARAGRAPH EXPLAIN THE IMPACT OF BERG WIND ON PHYSICAL ENVIRO
Plants (Natural vegetation / Pasture) dry out due to the hot dry winds (2)
Reduction of biodiversity (fauna and flora) within the natural environment (2)
Declining ecosystems will disrupt food chains and food web networks (2)
Higher evaporation reduces soil moisture content (2)
Increased loss of moisture in soil will accelerate soil erosion (2)

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The land is left bare and vulnerable and accelerates soil erosion reducing soil fertility (2)
Higher levels of carbon dioxide will increase atmospheric pollution (2)
Water from shallow pools, small non-perennial water bodies can evaporate (2)
Natural vegetation is destroyed by veld fires (2)
Loss of habitat/damage to ecosystems due to veldfires (2)
Increase in carbon dioxide as a result of veldfires impacts negatively on physical environment (2)
Ash of veldfires act as fertilisers for the development and growth of new vegetation (2)
Veldfires can promote seed germination (2)
[ANY FOUR] (4 x 2) (8)
[60]

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QUESTION 2: GEOMORPHOLOGY

2.1 2.1.1 B (1)

2.1.2 C (1)

2.1.3 D (1)

2.1.4 C (1)

2.1.5 C (1)

2.1.6 D (1)

2.1.7 B (1)

2.1.8 B (1) (8 x 1) (8)

2.2 2.2.1 X (1)

2.2.2 Y (1)

2.2.3 X (1)

2.2.4 Y (1)

2.2.5 X (1)

2.2.6 X (1)

2.2.7 X (1) (7 x 1) (7)

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2.3 2.3.1 **A** Trellis (1)
B Dendritic (1) (2 x 1) (2)

2.3.2 DIFFERENTIATE **A** Alternate layers of hard and soft rock/ folded rock structure (2)
B Rock that is uniformly resistant to erosion (2) (2 x 2) (4)

2.3.3 WHY ARE TRIBUTARIES OF MAIN STREAM PARALLEL The streams flow in relation to the folds of the rock (2)
The streams flow over softer rock of the syncline (valley) (2)
Interfluves are parallel (2)
[ANY ONE] (1 x 2) (2)

2.3.4 3rd (order) (2) (1 x 2) (2)

2.3.5 Higher (1) (1 x 1) (1)

2.3.6 DESCRIBE THE RELATIONSHIP (a) The low rainfall will result in a lower drainage density (2)

(b) The steep gradient will result in a higher drainage density (2)

(2 x 2) (4)

2.4.1 Deposition (1) (1 x 1) (1)

2.4.2 Gentle/ flat/ level (2) (1 x 2) (2)

2.4.3 GIVE TWO REASONS FOR WIDE FLOODPLAIN AT X Increased deposition of silt/alluvium/sand on the floodplain (2)
River is shallow resulting in more deposition (2)
Many tributaries deposit sediment (2)
The gentle slope reduces the velocity of the river and the amount of sediment carried (2)
Regular flooding in the area (2)
[ANY TWO] (2 x 2) (4)

2.4.4 PARAGRAPH EXPLAIN PHYSICAL IMACT OF FLOODING ON FLOODPLAIN The deposition of silt increases the width of the floodplain (2)
The deposition of fertile soil materials improves the nature and amount of vegetation available on the floodplain (2)
Deposition of alluvium increases the quality of the soil (2)
Levees form on the floodplain as flooding occurs (2)
Create wetlands which are habitats for living organisms (2)
Increases soil moisture content that supports vegetation/ improves biodiversity (2)
Allows floodwaters to spread out and excess water is stored (2)
Continuous flooding purifies water/increase water quality (2)
The water table rises resulting in marshes and vlei's/ wetlands on the floodplain (2)
The waterlogged soils reduce access to parts of the floodplain (2)
The level of infiltration along the floodplain increases the saturation level of soil (2)
The biodiversity of the floodplain alters to adapt to the changing conditions (2)
Continuous flooding or submergence negatively impacts on the natural vegetation/floodplain (2)
[ANY FOUR] (4 x 2) (8)

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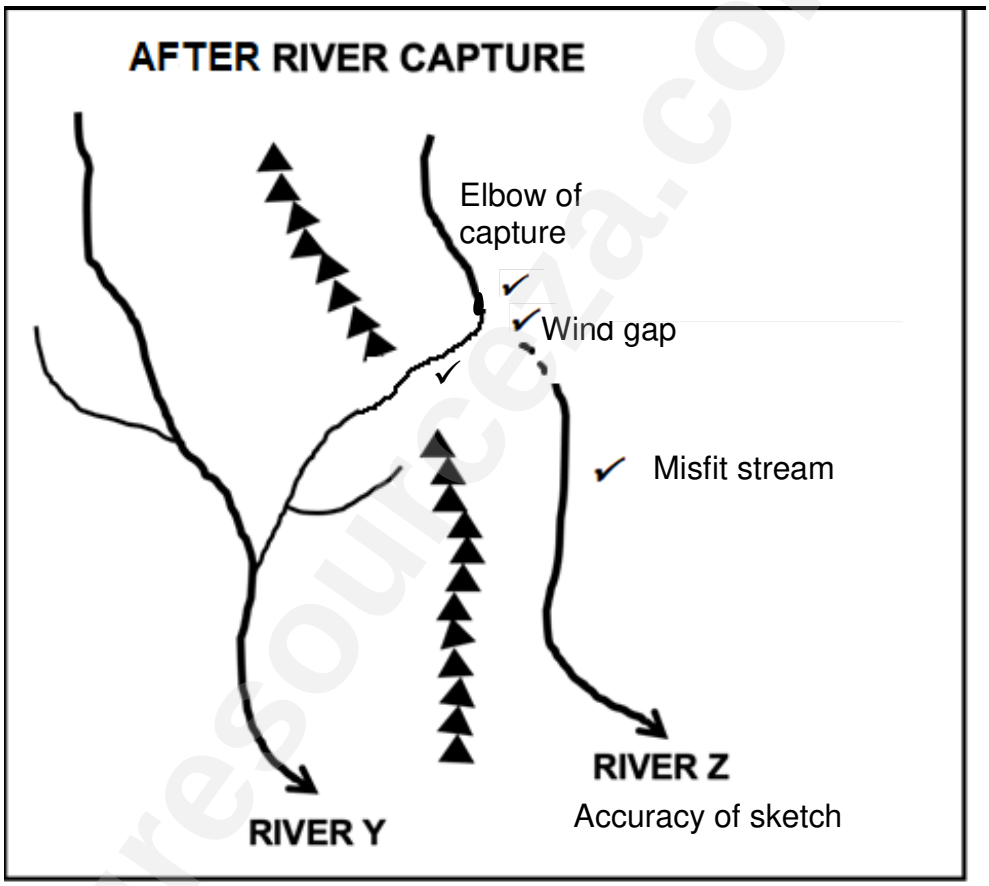
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2.5 2.5.1 When a more energetic river captures the headwaters of a less energetic river (2)
DEFINE
[CONCEPT] (1 x 2) (2)

2.5.2 A steeper gradient (on the one side of the watershed) (2)
STATE ONE CONDITION More rainfall (on one side of the watershed) (2)
Less resistant/softer rock (on the one side of the watershed) (2)
[ANY ONE] (1 x 2) (2)

2.5.3



Marks allocated as follows:
- Accuracy of sketch- any one of two tributaries can be used (1)
- Wind gap (1)
- Elbow of capture (1)
- Misfit stream (1) (1 + 3) (4)

2.5.4 River **Y** (1) (1 x 1) (1)

2.5.5 River **Y** has an increased volume of water (2) (1 x 2) (2)
REASON

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2.5.6 EXPLAIN THE IMPACT OF THE CHANGE IN THE CAPTOR STREAM

Increased vertical erosion due to the increased volume of water in river **Y** (2)
The active erosion of the river cuts into the valley forming terraces (2)
The softer rock in the valley erodes faster resulting in layers/terraces (2)
New valleys form in a valley due to increased river discharge (2)
Terraces form due to recurrent rejuvenation in several valleys (2)
Meanders will become incised/entrenched (2)
A knickpoint can develop along the profile of the river (2)
Increased flooding because of greater volume of water (2)
Increased velocity of water in the river channel because of greater volume of water (2)
The captor stream will be able to carry a greater load/less deposition (2)

[ANY TWO] (2 x 2) (4)

[60]

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SECTION B

QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES

3.1 3.1.1 Limpopo (1) (1 x 1) (1)

3.1.2 A (1) (1 x 1) (1)

3.1.3 C (1) (1 x 1) (1)

3.1.4 **Area = Length (L) x Breadth (B)**

Area = [2 cm x 100] x [1.6 (1) cm x 100] [Range: Breadth (1,5 – 1,7 cm]
= 200 (1) m x 160 (1) m [Range: 150m – 170m]
= 32 000 m² (1) [Range: 30 000 m² – 34 000 m²]
(4 x 1) (4)

3.1.5 WHY FEATURE IS LARGER ON ORTHOPHO TO
The scale of the orthophoto map is (5 times) larger than the scale of the topographic map (1)
(Accept) The scale of the topographic map is (5 times) smaller than the scale of the orthophoto map (1)
[ANY ONE] (1 x 1) (1)

3.1.6 190° (Range: 189 ° - 191°) (1) (1 x 1) (1)

3.1.7 **MB = TB + MD**

MB = 190° + 17°10'
= 207°10′ (1) (Range: 206°10′- 208°10′)
(1 x 1) (1)

3.2 3.2.1 (a) Winter (1) (1 x 1) (1)

TYPE OF RIVER
(b) Non-perennial rivers (1)
Accept Periodic (1)
[ANY ONE] (1 x 1) (1)

STATE ONE STRATEGY
(c) Perennial water (2)
Accept dams (2)
Reservoirs (2)
[ANY ONE] (1 x 2) (2)

3.2.2 **WIND DIRECTIO N**
The orientation of the landing strip (2)
Planes take off and land according to the prevailing wind directions (2)
[ANY ONE] (1 x 2) (2)

3.2.3 D (1) (1 x 1) (1)

3.2.4 B (1) (1 x 1) (1)

3.2.5 B (1) (1 x 1) (1)

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	3.2.6	West north west / North west/ (1)	(1 x 1) (1)
	3.2.7 HOW TRIBUTARIES IDENTIFY DIRECTION	Tributaries join the main river at acute angles (2)	(1 x 2) (2)
3.3	3.3.1	Vector (1)	(1 x 1) (1)
	3.3.2	A (1)	(1 x 1) (1)
	3.3.3 GIVE EVIDENCE TO DEMARCATE	A wall (black line) was used to demarcate the area around the rivers (2) No buildings in the demarcated area (2) No human activity/ no development (2) No cultivation visible (2) **[ANY ONE]**	(1 x 2) (2)
	3.3.4 IDENTIFY LAYERS	Rivers (1) Accept Drainage (1) Roads (1) Accept Infrastructure (1) Buildings (1) Accept Land-use (1) Contour lines (1) Accept Relief/Topography (1) Rock/soil structure (1) Accept Geology (1) **[ANY TWO]**	(2 x 1) (2)
	3.3.5 WHY WAS IT IMPORTANT TO UTILISE THE LAYERS	To determine the level of drainage/waterlogging (2) To assess the possibility of flooding (2) To determine the accessibility of the landing strip (2) To determine the availability of open spaces (2) To determine the nature of the gradient (2) To determine the nature of the soil (2) To determine the (stability of the) geological structure of the underlying rock (2) **[ANY ONE]**	(1 x 2) (2) **[30]**

TOTAL: 150

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SENIOR CERTIFICATE EXAMINATIONS/
NATIONAL SENIOR CERTIFICATE EXAMINATIONS

GEOGRAPHY P1

2021

MARKS: 225

TIME: 3 hours

This question paper consists of 15 pages and an annexure of 11 pages.

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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. Do NOT write in the margins of the ANSWER BOOK.
8. Draw fully labelled diagrams when instructed to do so.
9. Answer in FULL SENTENCES, except when you have to state, name, identify or list.
10. The unit of measurement and direction must be included in the final answer, where applicable, e.g. 12 km, 10 metres, 14 °C.
11. Write neatly and legibly.

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SECTION A: CLIMATE, WEATHER AND GEOMORPHOLOGY

QUESTION 1

1.1 Refer to FIGURE 1.1 that shows an urban heat island effect during the day and night. Match the descriptions below with the diagrams showing DAY and NIGHT. Write only 'day' or 'night' next to the question numbers (1.1.1 to 1.1.7) in the ANSWER BOOK, e.g. 1.1.8 day.

1.1.1 Reflects the highest temperatures in an urban heat island

1.1.2 Pollution is dispersed over a greater area

1.1.3 Artificial heat generation is at its lowest

1.1.4 Increased human discomfort due to higher temperature

1.1.5 Greater difference between air and surface temperatures

1.1.6 Limited multiple reflection of heat

1.1.7 Fewer human activities generating heat (7 x 1) (7)

1.2 Choose a term in COLUMN B that matches the description in COLUMN A. Write only the letter (A–I) next to the question numbers (1.2.1 to 1.2.8) in the ANSWER BOOK, e.g. 1.2.9 J.

COLUMN A		COLUMN B	
1.2.1	Equilibrium between the rate of erosion and rate of deposition	A	ungraded profile
1.2.2	Shows a view of a river from bank to bank	B	temporary base level
1.2.3	Shows a side view of the river from the source to the mouth	C	base level of erosion
1.2.4	Point where a river enters the sea	D	permanent base level
1.2.5	A river that has obstructions along its course	E	graded river
1.2.6	A dam is an example of this base level of erosion	F	source
1.2.7	The lowest level to which a river can erode	G	longitudinal profile
1.2.8	The point where a river originates	H	cross profile
		I	mouth

(8 x 1) (8)

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1.3 Refer to FIGURE 1.3, an extract on mid-latitude cyclones.

1.3.1 Name the type of climate that is found at the south-western tip of the country. (1 x 1) (1)

1.3.2 Describe the climate experienced at the south-western tip of the country during winter as indicated in the extract. (1 x 1) (1)

1.3.3 Why do mid-latitude cyclones migrate (move) further north in winter? (1 x 2) (2)

1.3.4 Describe the changes in the weather associated with the passing of a cold front over Cape Town. (2 x 2) (4)

1.3.5 In a paragraph of approximately EIGHT lines, explain the negative impact of cold fronts on tourism in Cape Town. (4 x 2) (8)

1.4 Refer to FIGURE 1.4 showing slope aspect.

1.4.1 Define the concept *slope aspect*. (1 x 1) (1)

1.4.2 Does **A** or **B** represent the Southern Hemisphere? (1 x 1) (1)

1.4.3 Give a reason evident from the sketch for your answer to QUESTION 1.4.2. (1 x 2) (2)

1.4.4 How does slope aspect influence the microclimate of valley slopes with regard to:

(a) Temperature (1 x 2) (2)

(b) Evaporation (1 x 2) (2)

1.4.5 Explain the influence of slope aspect in the Southern Hemisphere on the following:

(a) Farming (1 x 2) (2)

(b) Human settlements (2 x 2) (4)

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1.5 Refer to FIGURE 1.5 showing drainage density.

1.5.1 Define the concept *drainage density.* (1 x 1) (1)

1.5.2 State the difference in drainage density of drainage basins **A** and **B**. (2 x 1) (2)

1.5.3 How did rock permeability influence the drainage density of drainage basin **A**? (1 x 2) (2)

1.5.4 Determine the stream order of the river system in drainage basin **A** at point **X**. (1 x 2) (2)

1.5.5 Describe the relationship between drainage density and stream order of a river by referring to drainage basins **A** and **B**. (2 x 2) (4)

1.5.6 Explain how the following influences the drainage density in drainage basin **B**:

(a) Steep gradient (1 x 2) (2)

(b) Increase in precipitation (1 x 2) (2)

1.6 Refer to FIGURE 1.6 showing river capture (stream piracy).

1.6.1 Is river **X** or **Y** the captured river? (1 x 1) (1)

1.6.2 Give TWO pieces of evidence in diagram **B** that shows that river capture has taken place. (2 x 1) (2)

1.6.3 What influence does the underlying rock have on river capture? (1 x 2) (2)

1.6.4 How does river capture rejuvenate the captor stream? (1 x 2) (2)

1.6.5 In a paragraph of approximately EIGHT lines, discuss how river capture will have a positive impact on farming at **W**. (4 x 2) (8)

[75]

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QUESTION 2

2.1 With reference to tropical cyclones, match the term in COLUMN B with the description in COLUMN A. Write only the letter (A–I) next to the question numbers (2.1.1 to 2.1.8) in the ANSWER BOOK, e.g. 2.1.9 J.

COLUMN A		COLUMN B	
2.1.1	Provides energy that contributes to the formation of the tropical cyclone	A	dissipating
2.1.2	Local name given to a tropical cyclone in South-east Asia	B	eye wall
2.1.3	Cooler air sinks and there is no rain in this section of the tropical cyclone	C	immature
2.1.4	The stage where cooler air flows into the tropical cyclone, increasing the pressure	D	formative
2.1.5	Pressure drops to below 1 000 hPa and wind speeds increase to approximately 120 km/h in this stage	E	latent heat
2.1.6	The stage characterised by a well-developed forward left-hand quadrant	F	typhoon
2.1.7	The stage where the pressure is above 1 000 hPa and the tropical cyclone starts to develop	G	eye
2.1.8	Created by the upward spiralling movement of air around the centre	H	hurricane
		I	mature

(8 x 1) (8)

2.2 Refer to FIGURE 2.2 showing laminar and turbulent flow of water in a river. Match the descriptions below with either **A** or **B**. Write only the letter A or B next to the question numbers (2.2.1 to 2.2.7) in the ANSWER BOOK, e.g. 2.2.8 B.

2.2.1 Rapids are characteristic of this type of flow

2.2.2 Is associated with an increased volume of water in the lower course

2.2.3 Associated with a higher rate of erosion

2.2.4 Occurs mostly in the upper course of the river

2.2.5 Promotes the formation of flood plains and levees

2.2.6 A level river bed causes water to move in layers

2.2.7 Surface friction causes water to form eddies (swirls) (7 x 1) (7)

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

2.3.1 Give evidence that the synoptic weather map represents a summer condition. (1 x 1) (1)

2.3.2 Determine the isobaric interval on the synoptic weather map. (1 x 1) (1)

2.3.3 Name the high-pressure cell **A**. (1 x 1) (1)

2.3.4 State the wind direction and wind speed of the weather station at Durban. (2 x 1) (2)

2.3.5 Comment on the relationship between wind speed and the arrangement of the isobars in the eastern half of the country. (1 x 2) (2)

2.3.6 In a paragraph of approximately EIGHT lines, explain how high-pressure cell **A** and the low-pressure cell in the interior of the country could contribute to increased rainfall in the eastern half of the country during summer. (4 x 2) (8)

2.4 Read the blog (journal entry) in FIGURE 2.4 based on South African berg winds.

2.4.1 According to the blog, on which side of the mountain do berg winds descend? (1 x 1) (1)

2.4.2 Name the high-pressure system referred to in the blog. (1 x 1) (1)

2.4.3 Berg winds are associated with the presence of a coastal low pressure.

(a) What is a *coastal low pressure*? (1 x 1) (1)

(b) What role does a coastal low pressure play in the formation of berg winds? (1 x 2) (2)

(c) Why are berg winds associated with high temperatures? (1 x 2) (2)

2.4.4 Explain the negative economic impact of the fires mentioned in the blog, on farming in the area. (2 x 2) (4)

2.4.5 Suggest strategies that farmers could implement to reduce the effects of fires associated with berg winds. (2 x 2) (4)

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2.5 FIGURE 2.5 illustrates drainage patterns.

2.5.1 Define the concept *drainage pattern*. (1 x 1) (1)

2.5.2 Identify drainage patterns **A** and **B**. (2 x 1) (2)

2.5.3 Give TWO characteristics of drainage pattern **A** evident in FIGURE 2.5. (2 x 1) (2)

2.5.4 How does the volcanic landscape in FIGURE 2.5 result in drainage pattern **B**? (1 x 2) (2)

2.5.5 Why is drainage pattern **A** more suitable for settlements? (2 x 2) (4)

2.5.6 Explain how the characteristics of the underlying rock structure result in the formation of drainage patterns **A** and **B**. (2 x 2) (4)

2.6 FIGURE 2.6 illustrates fluvial landforms.

2.6.1 Which stage (course) of the river is illustrated in FIGURE 2.6? (1 x 1) (1)

2.6.2 What role did the gradual gradient play in the formation of the meander evident in the sketch? (1 x 2) (2)

2.6.3 Explain the formation of the undercut (outer bank) and slip-off slope (inner bank). (2 x 2) (4)

2.6.4 In a paragraph of approximately EIGHT lines, explain how a meander develops into an oxbow lake. (4 x 2) (8)

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

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 numbers (3.1.1 to 3.1.7) in the ANSWER BOOK, e.g. 3.1.8. D.

3.1.1 … is the maximum distance a customer is willing to travel to buy goods or to use a service.

A Central place
B Sphere of influence
C Range
D Threshold

3.1.2 … goods are used almost daily and are found in most types of settlements.

A High-order
B Threshold
C Low-order
D Comparative

3.1.3 … describes the ranking of urban areas according to their size and degree of specialisation of the functions.

A Central place
B Urban morphology
C Sphere of influence
D Urban hierarchy

3.1.4 An urban service centre supplying goods and services to the surrounding rural area is known as a …

A central place.
B low-order centre.
C rural hamlet.
D high order centre.

3.1.5 … are fewer, draw people from further and offer more specialised services.

A Towns
B Villages
C Farmsteads
D Cities

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3.1.6 … refers to the number of customers a business needs to be profitable.

A Sphere of influence
B Threshold population
C Urban population
D Range of population

3.1.7 The area from which a business draws its customers is a/an …

A range of goods.
B local service centre.
C sphere of influence.
D urban hierarchy. (7 x 1) (7)

3.2 Choose the correct word(s) from those given in brackets. Write only the word(s) next to the question numbers (3.2.1 to 3.2.8) in the ANSWER BOOK.

3.2.1 (Light/Heavy) industries cover large areas and tend to cause more air pollution.

3.2.2 A power station is an example of a (market-/raw material) oriented industry.

3.2.3 The location of (footloose/ubiquitous) industries is not determined by locational factors such as raw materials, transport and market.

3.2.4 (Light/Heavy) industries can be located around the CBD.

3.2.5 (Market-/Raw material) oriented industries generally produce low-order and perishable goods.

3.2.6 (Bridge/Raw material oriented) industries are located near harbours where raw materials are imported.

3.2.7 (Ubiquitous/Market-oriented) industries, like telecommunications, are not determined by any specific locational requirements.

3.2.8 (Market-oriented/Heavy) industries are located close to bulk transport facilities. (8 x 1) (8)

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3.3 Read the extract in FIGURE 3.3 on land reform in South Africa.

3.3.1 What is the aim of land reform? (1 x 1) (1)

3.3.2 Quote TWO ways from the extract in which land reform can 'breathe new life' into the rural economy. (2 x 1) (2)

3.3.3 Why was the target set for land reform not reached? (2 x 2) (4)

3.3.4 In a paragraph of approximately EIGHT lines, explain the positive impact that land reform will have on rural communities. (4 x 2) (8)

3.4 FIGURE 3.4 is a table showing South African urbanisation data.

3.4.1 Define the term *urbanisation*. (1 x 1) (1)

3.4.2 Determine the rate of urbanisation between 1950 and 2050. (1 x 1) (1)

3.4.3 State ONE social pull factor that would influence the rate of urbanisation. (1 x 1) (1)

3.4.4 How will the rate of urbanisation negatively impact on the social pull factor stated in QUESTION 3.4.3? (2 x 2) (4)

3.4.5 Explain how the rate of urbanisation would contribute to traffic congestion in an urban area. (2 x 2) (4)

3.4.6 As an urban and regional planner, give TWO strategies that can be implemented to limit traffic congestion. (2 x 2) (4)

3.5 Refer to FIGURE 3.5 showing statistics on gold mining in South Africa.

3.5.1 According to FIGURE 3.5, where are the world's largest gold resources found? (1 x 1) (1)

3.5.2 Calculate the difference in monetary value (rands) in gold profit between 2018 and 2019. (1 x 2) (2)

3.5.3 Give ONE reason why gold profits increased whilst gold production decreased in 2019. (1 x 2) (2)

3.5.4 Explain the factors responsible for the decline of employment opportunities in the gold mining sector over the last few years. (2 x 2) (4)

3.5.5 Explain how gold mining contributed to industrial development. (3 x 2) (6)

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3.6 Refer to FIGURE 3.6 showing the Platinum Spatial Development Initiative (SDI).

3.6.1 Name a South African province in which the Platinum SDI is located. (1 x 1) (1)

3.6.2 Give evidence from the map that shows the Platinum SDI is an international initiative. (1 x 1) (1)

3.6.3 Quote from the extract to indicate how Rustenburg will benefit from the Platinum SDI. (1 x 1) (1)

3.6.4 Give TWO positive impacts that the Platinum SDI will have on Rustenburg. (2 x 2) (4)

3.6.5 In a paragraph of approximately EIGHT lines, suggest challenges that the Platinum SDI could experience as it aims to stimulate economic development. (4 x 2) (8)

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QUESTION 4

4.1 Choose the correct word(s) from those given in brackets. Write only the word(s) next to the question numbers (4.1.1 to 4.1.8) in the ANSWER BOOK.

4.1.1 Farmsteads are scattered in (nucleated/dispersed) settlements.

4.1.2 (Round/Linear) settlements are generally located along roads, rivers or canals.

4.1.3 The (dispersed/nucleated) settlement is generally associated with fragmented plots of farmland.

4.1.4 (Nucleated/Dispersed) settlements are generally easy targets for criminals because of remoteness.

4.1.5 (Linear/Round) settlements tend to be elongated for accessibility.

4.1.6 The advantage of (nucleated/dispersed) settlements is the sharing of equipment and ideas.

4.1.7 The (nucleated/dispersed) settlements are associated with making the largest profits.

4.1.8 Lack of privacy is a problem in (dispersed/nucleated) settlements.

(8 x 1) (8)

4.2 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 numbers (4.2.1 to 4.2.7) in the ANSWER BOOK, e.g. 4.2.8 D.

4.2.1 ... is an example of a primary economic activity.

A Research
B Construction
C Forestry
D Nursing

4.2.2 The economic sector associated with the provision of services is ...

A quaternary.
B primary.
C tertiary.
D secondary.

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4.2.3 This sector is associated with value-added goods:

A Primary
B Secondary
C Tertiary
D Quaternary

4.2.4 Developing a Covid vaccine will be an example of a ... economic activity.

A primary
B secondary
C tertiary
D quaternary

4.2.5 The economic sector concerned with the extraction of raw materials from the environment:

A Primary
B Secondary
C Tertiary
D Quaternary

4.2.6 ... refer(s) to goods that are purchased by other countries.

A Imports
B Exports
C Local trade
D Foreign investment

4.2.7 ... refers to the exchange of goods and services between countries.

A Informal trade
B International trade
C Domestic trade
D Trade balance (7 x 1) (7)

4.3 Refer to FIGURE 4.3 based on urban land-use zones.

4.3.1 Give evidence from FIGURE 4.3 that the central business district (CBD) is accessible. (1 x 1) (1)

4.3.2 Why does the transition zone have an irregular shape in FIGURE 4.3? (1 x 2) (2)

4.3.3 Explain TWO factors that have attracted heavy industries to **X**.(2 x 2) (4)

4.3.4 In a paragraph of approximately EIGHT lines explain why the CBD is no longer attractive as a location for many businesses. (4 x 2) (8)

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4.4 Refer to the photograph in FIGURE 4.4 on urban settlement issues: informal settlements.

4.4.1 What evidence on the photograph indicates that this is an informal settlement? (1 x 1) (1)

4.4.2 Give TWO economic reasons for the development of informal settlements. (2 x 1) (2)

4.4.3 How will the steep slope impact the informal houses in the vicinity of **X** when there is heavy rainfall? (2 x 2) (4)

4.4.4 Why are residents in informal settlements, like in FIGURE 4.4, more vulnerable to fires than those living in formal settlements? (2 x 2) (4)

4.4.5 Explain TWO measures that local municipalities could implement to assist residents to reduce the risk of fires in informal settlements. (2 x 2) (4)

4.5 Refer to FIGURE 4.5, an extract on food security in South Africa.

4.5.1 Quote TWO reasons from the extract for food insecurity at a household level. (2 x 1) (2)

4.5.2 State the importance of ensuring a country is food secure. (1 x 2) (2)

4.5.3 Why are poverty-stricken households more vulnerable (at risk) to negative economic shocks? (1 x 2) (2)

4.5.4 Explain why households in rural areas are less vulnerable (less at risk) to hunger compared to urban households. (1 x 2) (2)

4.5.5 In a paragraph of approximately EIGHT lines, suggest strategies to improve food security for households in South Africa. (4 x 2) (8)

4.6 Refer to FIGURE 4.6 based on the Port Elizabeth-Uitenhage (Nelson Mandela Metropole) core industrial region.

4.6.1 Along which ocean is the Port Elizabeth-Uitenhage (Nelson Mandela Metropole) core industrial region located? (1 x 1) (1)

4.6.2 Name the main industry located in this core industrial region. (1 x 1) (1)

4.6.3 Explain TWO natural factors that influence the location of this industrial region. (2 x 2) (4)

4.6.4 Why is this industrial region important to the economy of the province? (2 x 2) (4)

4.6.5 How has advancement in technology made industries more competitive in the Port Elizabeth-Uitenhage (Nelson Mandela Metropole) core industrial region? (2 x 2) (4)

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TOTAL: 225

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basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS/ NATIONAL SENIOR CERTIFICATE EXAMINATIONS

GEOGRAPHY P1

2021

ANNEXURE

This annexure consists of 11 pages.

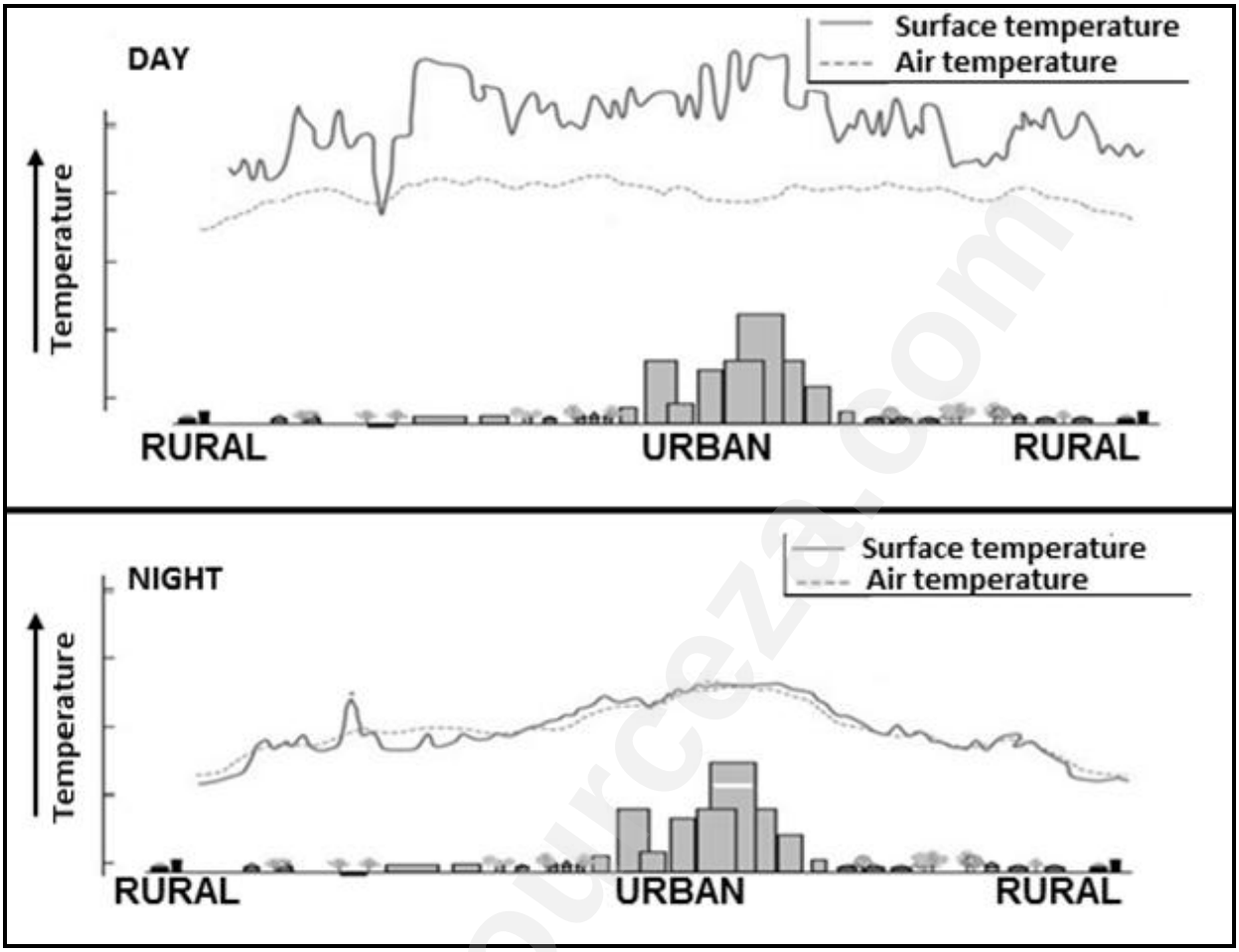
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FIGURE 1.1: URBAN HEAT ISLAND EFFECT DURING THE DAY AND NIGHT



[Adapted from USA 2020, https://www.epa.gov/heatislands/learn-about-heat-island]

FIGURE 1.3: MID-LATITUDE CYCLONES

MID-LATITUDE CYCLONES OVER THE WESTERN CAPE

South Africa is among a handful of countries that experience winter rainfall in some areas and summer rainfall in others. The south-western tip of the country has a Mediterranean climate, with hot dry summers and cool wet winters. This is because mid-latitude cyclones migrate further north during winter, allowing the edge of the cold front arm to sweep across the southernmost part of the country. This results in frontal winter rainfall over the Western Cape. The movement of the cold front over the Western Cape is generally associated with a variety of weather changes. These cyclones can have a positive or negative impact on tourism.

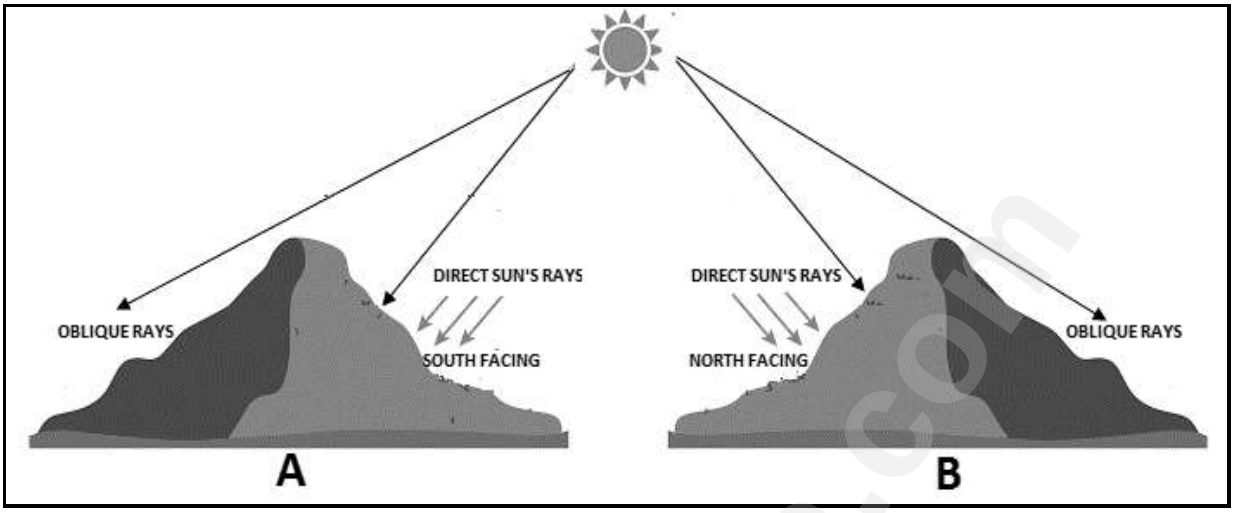
[Source: Examiner's extract]

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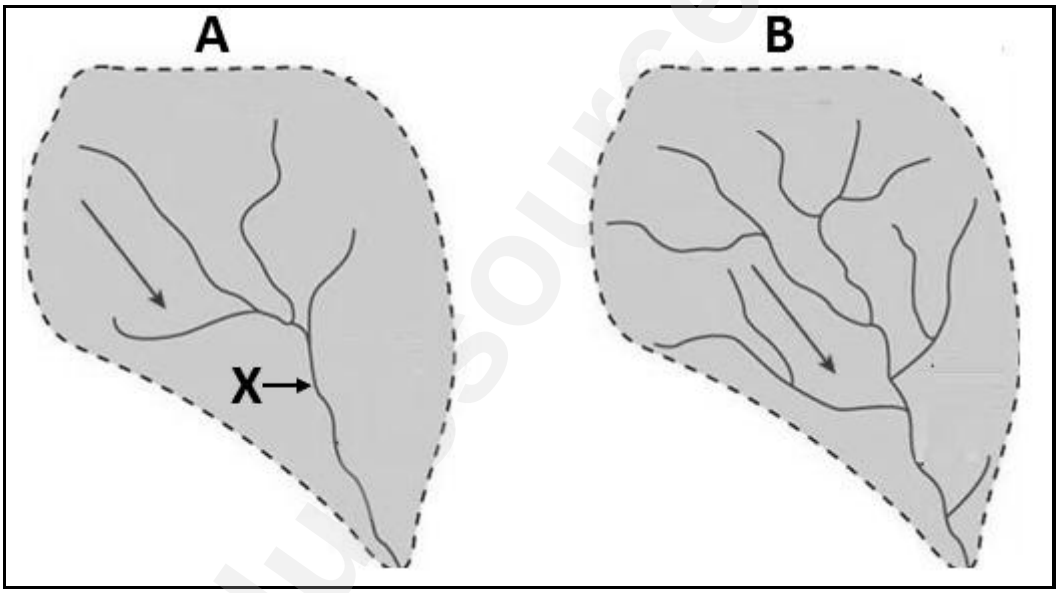
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FIGURE 1.4: SLOPE ASPECT



[Adapted from https://www.pmfias.com/temperature-distribution-earth-heat-budget-heat-balance]

FIGURE 1.5: DRAINAGE DENSITY



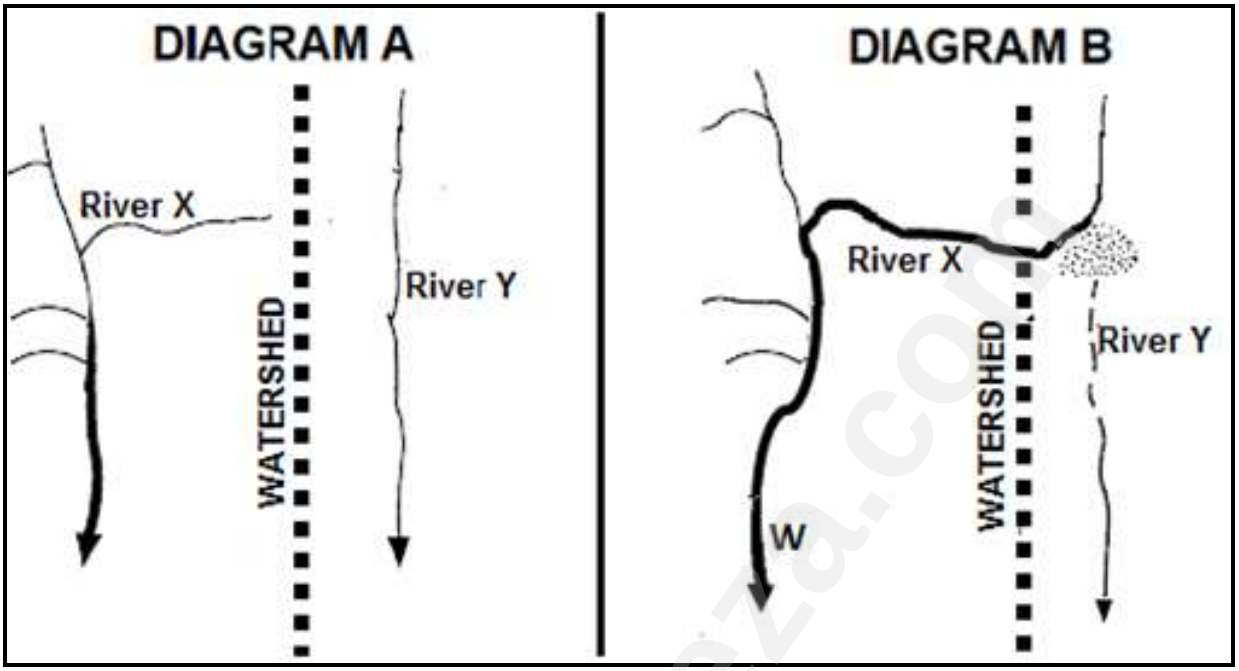
[Adapted from www.civiltee.hu.com]

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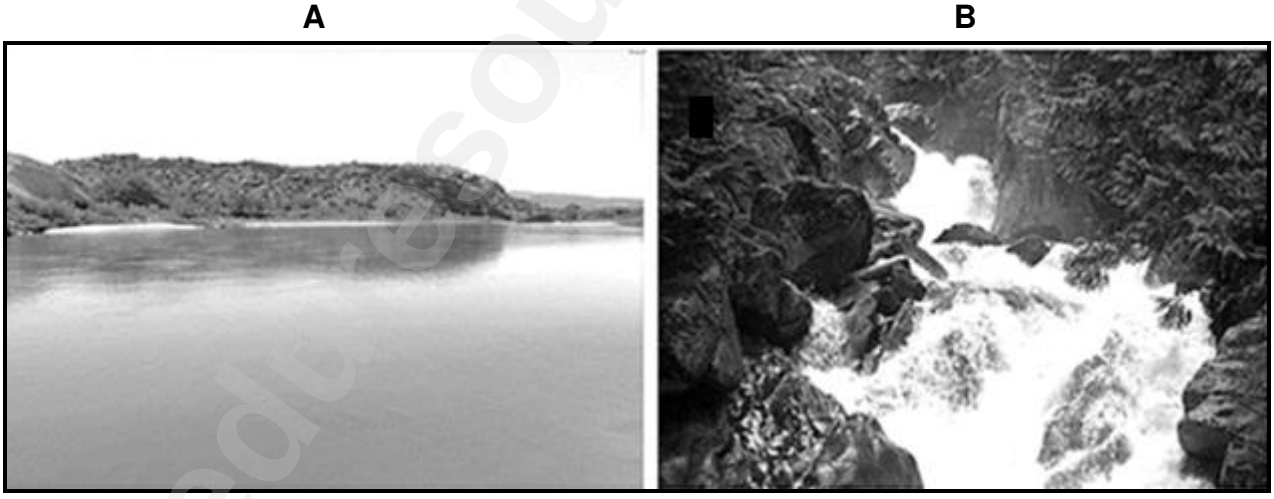
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FIGURE 1.6: RIVER CAPTURE (STREAM PIRACY)



[Adapted from https://www.google.com/search?sxsrf=ALeKk03lP8i1JV-ib25usPsiaZj8KuPD4g:1613590555668&source=univ&tbm=isch&q=river+capture+diagram&sa]

FIGURE 2.2: LAMINAR AND TURBULENT FLOW OF A RIVER



LAMINAR **TURBULENT**

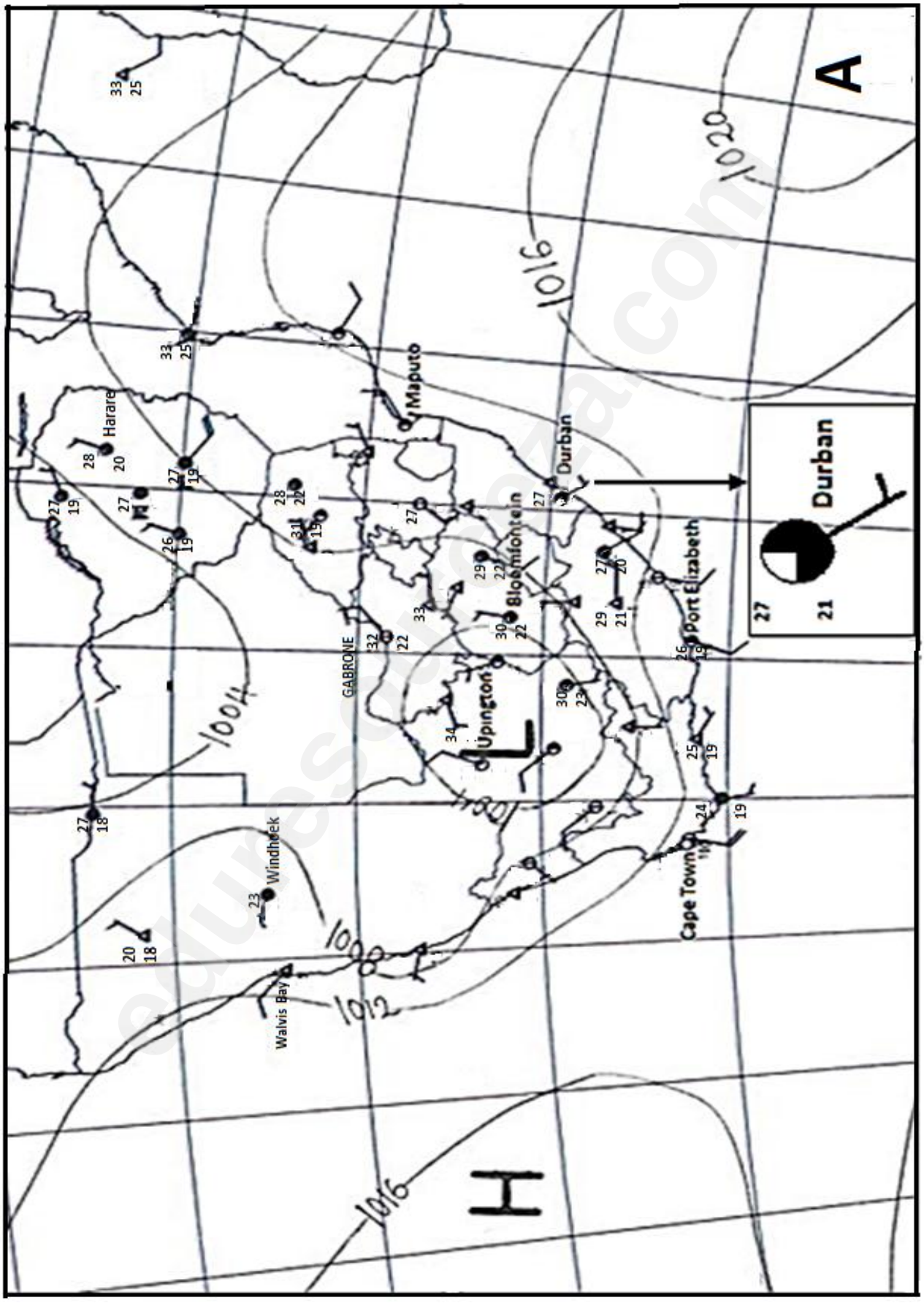
[Source: bing.com]

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FIGURE 2.3: SYNOPTIC WEATHER MAP



[Source: www.weathersa.co.za]

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FIGURE 2.4: SOUTH AFRICAN BERG WINDS

BERG WINDS IN KWAZULU-NATAL

Blog one

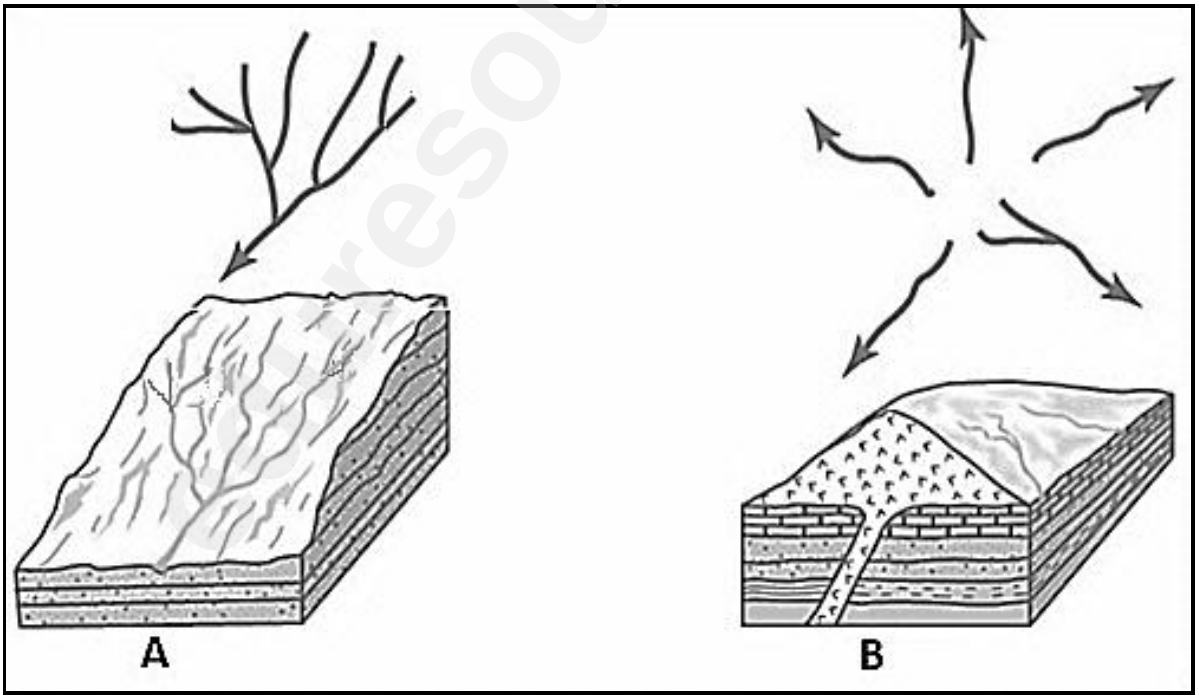
Since Sunday we have experienced berg wind conditions here in KwaZulu-Natal. These winds are caused by a high-pressure system lying over the interior of South Africa and this forces the air over the escarpment and down the leeward side of the Drakensberg. Temperatures can rise to as high as thirty degrees Celsius in a few hours. These winds can have a speed varying from 10 km per hour to over 100 km per hour and it can be very destructive.

Blog two

On Sunday the wind was very strong, and the temperatures here in our district rose from the mid-teens last week to the high twenties yesterday and today. This time of the year is also known as the fire season in KZN. These hot, dry winds are very conducive to fires. A fire driven by a 100 km an hour berg wind is unstoppable. No farmer dare leave his farm during this time, as a fire could wipe out a lifetime of work.

[Adapted from drakensviewblogspot.com]

FIGURE 2.5: DRAINAGE PATTERNS



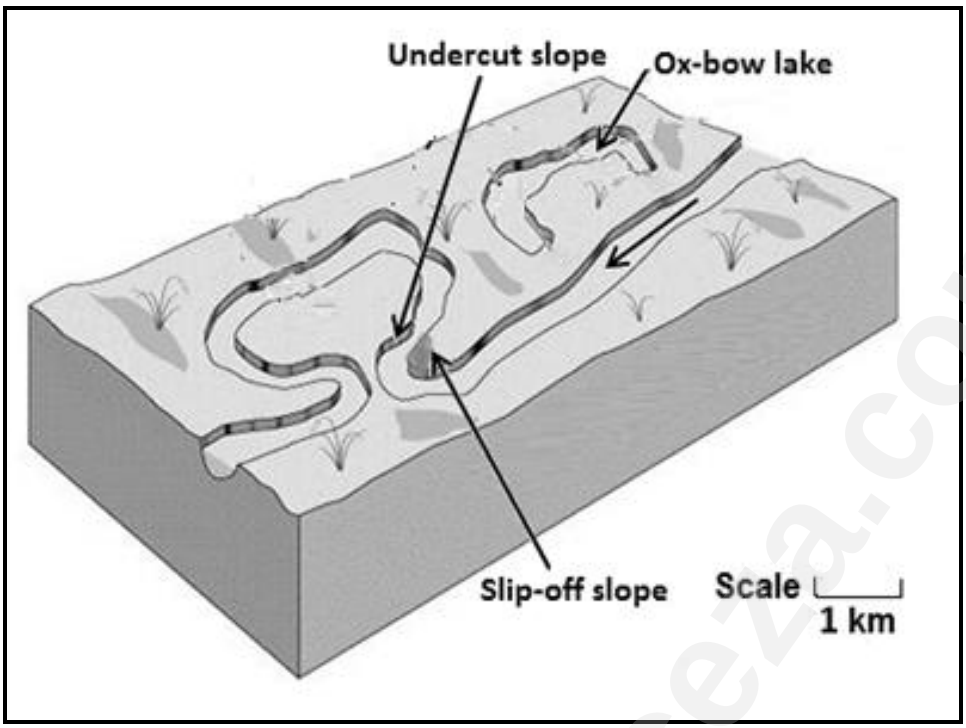
[Source: https://www.bing.com/search?q=drainage+patterns&form]

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FIGURE 2.6: FLUVIAL LANDFORMS



[Source: https://www.bing.com/search?q=fluvial landforms+&form]

FIGURE 3.3: LAND REFORM

LAND REFORM BREATHES NEW LIFE

Land reform has the potential to breathe new life into the economy, especially in rural areas, by reducing unemployment and giving previously disadvantaged farmers the opportunity to become commercial farmers.

In addition, it has the capacity to reduce social unrest by reducing the historic and large gap between white and black land ownership. Despite talks about its importance since the 30% redistribution target was set in 1996, land reform has never been a political priority. Instead, it has been covered in controversy, with millions of rands being wasted on failed projects due to a variety of reasons. These reasons vary from government inefficiency to a shortage of skills and lack of business and financial support.

Even the number of hectares that have been transferred is uncertain. Government last year argued that there was still a long way to go. It is estimated that a total of 17,4 million hectares had been transferred from white ownership since 1994. This is equal to 21% of the 82,8 million hectares farmed in South Africa.

[Adapted from https://www.farmersweekly.co.za/agri-business/empowerment/lessons-learnt-from-land-reform/]

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FIGURE 3.4: URBANISATION

SOUTH AFRICAN URBANISATION DATA
(Population in thousands)

POPULATION	1950	2014	2050
Urban	5,778 (42,2%)	34,167 (64,3%)	49,102 (77,4%)
Rural	7,905 (57,8%)	18,972 (35,7%)	14,304 (22,6%)
Total	13,683	53,139	63,405

[Source: https://businesstech.co.za/news/general/62749/sa-population-flocking-to-cities/]

FIGURE 3.5 GOLD MINING IN SOUTH AFRICA

FACTS ON GOLD MINING

- The Witwatersrand Basin remains the world's largest gold resource.
- Gold profits increased by 3,7%, from R70 billion in 2018 to R72,6 billion in 2019.
- Gold production decreased from 117 tonnes in 2018 to 101,3 tonnes in 2019.
- Due to the current gold price, more than half of the South African gold mining industry is marginal (making minimal profits).
- South African gold only accounts for 4,2% of the global gold production.
- Employment in the gold sector has declined over the years.
- The gold industry currently employs 95 130 people compared to 100 189 people in 2018.
- Total employee earnings have soared from R15,9 billion in 2008 to R24,3 billion in 2019.

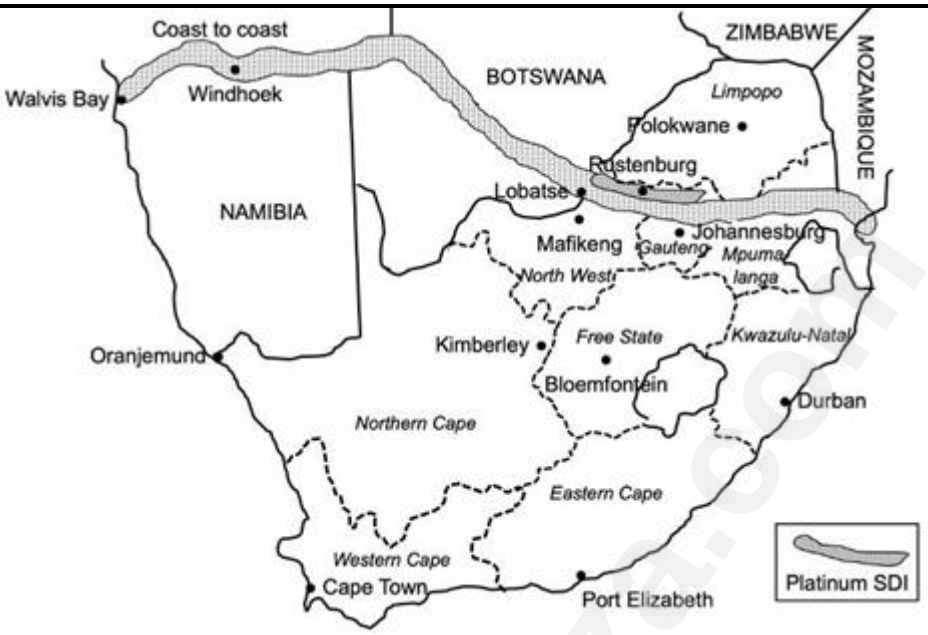
[Adapted from https://www.mineralscouncil.org.za/sa-mining/gold]

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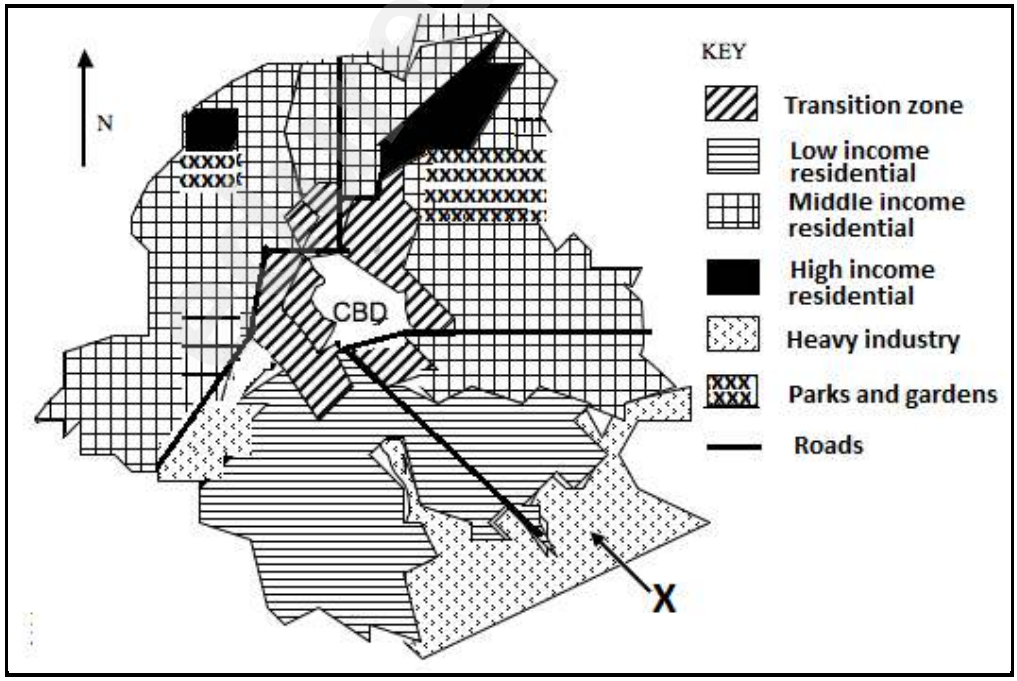
FIGURE 3.6: PLATINUM SPATIAL DEVELOPMENT INITIATIVE (SDI)



The Platinum Spatial Development Initiative (Platinum SDI) is located in North West, South Africa. It aims to develop all the areas on the N4 highway that links South Africa's most densely populated areas with Lobatse in Botswana. By developing nodes along the logistical corridor, the aim is to stimulate economic development. Rustenburg stands to benefit from increased traffic along this route, which is intended to link Namibia and Mozambique.

[Adapted from https://www.brandsouthafrica.com/investments- investing-in-north-west-province]

FIGURE 4.3: URBAN LAND-USE ZONES



[Aangepas uit https://www.google.com/search?q=urban%20land%20use%20zones&tbm=isch&hl]

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FIGURE 4.4: URBAN SETTLEMENT ISSUES: INFORMAL SETTLEMENTS



[Source: Collart Hervé | Credit: Sygma via Getty Images]

FIGURE 4.5: FOOD SECURITY

THE EXTENT OF FOOD SECURITY IN SOUTH AFRICA

While South Africa is food secure at national level, the country is still food insecure at household level as not all households have access to adequate food. Poverty-stricken households lack money to buy food and are unable to produce their own food. These households also have the inability to secure employment or to generate income. Poor households are also typically characterised by few people earning an income with many dependents, and they are particularly vulnerable to economic shocks.

According to the report, more than half the households with young children that experienced hunger were in urban areas. The involvement of households in agricultural activities for subsistence farming can play an important role in reducing the vulnerability to hunger. The results show that out of 16,2 million households, about 2,5 million households (15,6%) were involved in agricultural activities in South Africa.

Although the main source of income for rural households was social grants, most households involved in agricultural activities indicated that the main reason for their involvement is to supplement food for the household.

[Economic shock: An unpredictable event that affects the economy negatively or positively]

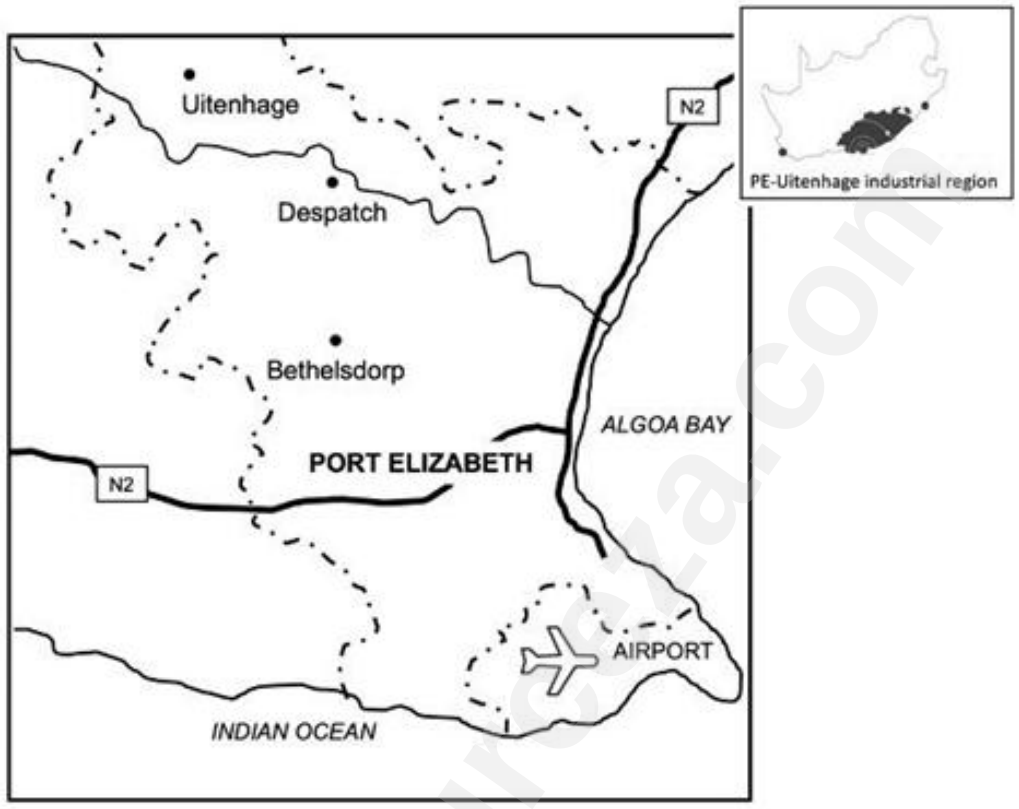
[Adapted from http://www.statssa.gov.za/?p=12135]

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FIGURE 4.6: PORT ELIZABETH-UITENHAGE (NELSON MANDELA METROPOLE) CORE INDUSTRIAL REGION



Port Elizabeth is the centre of the automobile industry in South Africa. Volkswagen and Ford have plants in the city. In addition, there are many auto component manufacturers in the city. Globalisation has forced these manufacturers to become world competitors and, in many cases, to play a role in the global strategy of their parent companies.

[Globalisation: connecting the economies of the world]

[Source: http://www.isocarp.net/Data/case_studies/cases/cs01_4568/gmpaper.htm]

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basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS/ NATIONAL SENIOR CERTIFICATE EXAMINATIONS

GEOGRAPHY P1

JUNE 2021

MARKING GUIDELINES

MARKS: 225

These marking guidelines consist of 19 pages.

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Marking Guidelines

The following marking guidelines have been developed to standardise marking in all provinces.

Marking

- ALL selected questions MUST be marked, irrespective of whether it is correct or incorrect
- Candidates are expected to make a choice of THREE questions to answer. If all questions are answered, ONLY the first three questions are marked.
- A clear, neat tick must be used: ✓
  - If ONE mark is allocated, ONE tick must be used: ✓
  - If TWO marks are allocated, TWO ticks must be used: ✓✓
  - The tick must be placed at the FACT that a mark is being allocated for
  - Ticks must be kept SMALL, as various layers of moderation may take place
- Incorrect answers must be marked with a clear, neat cross: ✗
  - Use MORE than one cross across a paragraph/discussion style questions to indicate that all facts have been considered
  - Do NOT draw a line through an incorrect answer
  - Do NOT underline the incorrect facts
- Where the maximum marks have been allocated in the first few sentences of a paragraph, place an **M** over the remainder of the text to indicate the maximum marks have been achieved

For the following action words, ONE word answers are acceptable: **give**, **list**, **name**, **state**, **identify**
For the following action words, a FULL sentence must be written: **describe**, **explain**, **evaluate**, **analyse**, **suggest**, **differentiate**, **distinguish**, **define**, **discuss**, **why**, **how**
The following action words need to be read within its context to determine whether a ONE word answer or FULL sentence is required: **provide**, **what**, **tabulate**

Totalling and transferring of marks

- Each sub-question must be totalled
  - Each question has six sub-sections, therefore six sub-totals per question required
  - Sub-section totals to be written in right hand margin at the end of the sub-section and underlined
  - Sub-total must be written legibly
  - Leave room to write in moderated marks on different levels
- Total sub-totals and transfer total to top left hand margin next to question number
- Transfer total to cover of answer book

Moderation

Marking on each level of moderation is done in the same way as the initial marking. All guidelines for marking must be adhered to.

If a mark for a sub-question is changed after moderation, the moderator must strike through the marker's mark and write down the new mark. ~~12~~ 16
The total for the question must be re-calculated, and similarly be struck off and the new total to be written down. ~~6~~ 3

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QUESTION 1

3

1.1.1 A (South Atlantic High) (1) ✓
1.1.2 B (Kalahari High) (1) ✓
1.1.3 B (South Indian) (1) ×

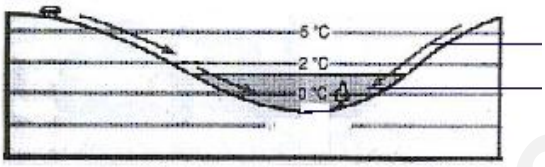
2

1.2.1 Melting snow ✓
1.2.2 Mouth ×
1.2.3 Third order ✓

2

1.3.1 Katabatic ×
1.3.2 **1** occurs during the day while **2** occurs at night ✓✓

1.3.3 Cold air rolls down ✓✓ into the valley and forms an inversion



Air flows downslope ✓✓

6

1.4.1 Shape of front concave ×
Steep gradient of front ✓

1.4.2 Warm air undercuts the cold air ×

1.4.3 Air behind the cold front is ✓✓ colder than the air in front. Cold air moves ✓✓ faster than warm air ahead of it. Cold front catches ✓✓ up with the warm front.

7

1.5.1 (a) A river that only flows all year round ×

(b) The river channel is wide ×

(c) Regularity ✓✓ of rainfall and the soil ✓✓ type over which the streams flow.

4

1.6.1 Gauteng ✓ and the Eastern ✓ Cape

1.6.2 Mining waste ✓ dumped in the river and industries ✓ pollute the water.

1.6.3 The cost of food production will increase at it is ✓✓ costly to buy purified water. Farmers will have to buy more ✓✓ chemicals to purify water. Chemicals cost ✓✓ a lot and this will increase production costs. It will be costly ✓✓ to purify water for use in electricity generation. These costs will be included in electricity prices. Costs will increase the price of electricity during production. There will be less clean water to generate hydro electricity.

M

11

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SECTION A: CLIMATE, WEATHER AND GEOMORPHOLOGY

QUESTION 1

1.1	1.1.1	Day (1)	
	1.1.2	Day (1)	
	1.1.3	Night (1)	
	1.1.4	Day (1)	
	1.1.5	Day (1)	
	1.1.6	Night (1)	
	1.1.7	Night (1)	(7 x 1) (7)
1.2	1.2.1	E (1)	
	1.2.2	H (1)	
	1.2.3	G (1)	
	1.2.4	I (1)	
	1.2.5	A (1)	
	1.2.6	B (1)	
	1.2.7	D/C (1)	
	1.2.8	F (1)	(8 x 1) (8)

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1.3	1.3.1	Mediterranean (1)	(1 x 1) (1)
	1.3.2 DESCRIBE	Cool wet (winters) (1)	(1 x 1) (1)
	1.3.3 WHY	The shifting of the ITCZ (2) Sun is now overhead of the Tropic of Cancer/follow the shifting rays of the sun/apparent movement of the sun (2) **[ANY ONE]**	(1 x 2) (2)
	1.3.4 DESCRIBE CHANGES	Decrease in temperature (2) Pressure decreases (but increases with cold sector) (2) Cloud cover increases/cumulonimbus clouds form (2) More precipitation/heavy rain/snow/hail/thunderstorms (2) Humidity decreases (2) Wind direction changes (backs northwest to southwest) (2) Increase in wind speed/sudden gusty winds (2) **[ANY TWO]**	(2 x 2) (4)
	1.3.5 EXPLAIN NEGATIVE IMPACT LINK WEATHER ASPECT AND IMPACT ON TOURISM	Heavy rainfall will make tourist destinations inaccessible (2) Rock falls and landslides decrease accessibility (2) Strong winds decrease accessibility (2) Rough seas and high waves decrease accessibility (2) Rough seas decrease business for tour operators (2) Snow on the mountains makes hiking trails inaccessible (2) Outdoor activities will be affected by the poor weather/dangerous conditions (can give examples rain, wind, cold and hail) (2) Travel arrangements of tourists will be affected by poor weather conditions (examples flights, tour buses, sea travel) (2) The aesthetical appeal of the tourist attraction may be diminished by poor weather conditions (example debris on the beaches) (2) Reduced income of tourism sector due to poor weather conditions (cancellation of bookings) (2) **[ANY FOUR]**	(4 x 2) (8)
1.4	1.4.1	Direction in which slopes face in relation to sun's rays (1) Accept: Angle at which the sun's rays strike the slope (1) **[CONCEPT]**	(1 x 1) (1)
	1.4.2	B (1)	(1 x 1) (1)

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1.4.3 In the southern hemisphere (B) the north facing slopes receive direct rays of the sun (2)
In the northern hemisphere (A) the south facing slopes receive direct rays of the sun (2)
In the southern hemisphere (B) south facing slopes receive oblique rays of the sun (2)
In the northern hemisphere (A) north facing slopes receive oblique rays of the sun (2)
[ANY ONE] (1 x 2) (2)

1.4.4 (a) Difference in temperature on the different slopes in the valley (2)
The slope that faces the sun will have a higher temperature (2)
The slope that faces away from the sun will have a lower temperature (2)
(Accept responses to specific slopes)
[ANY ONE] (1 x 2) (2)

(b) Evaporation rates differ on each slope (2)
The slope that faces the sun will have a higher evaporation/will be drier (2)
The slope that faces away from the sun will have a lower evaporation/will have a higher moisture content (2)
(Accept responses to specific slopes)
[ANY ONE] (1 x 2) (2)

1.4.5 (a) Different types of crops have to be grown on the north and south facing slopes (accept examples - deciduous fruit) (2)
North facing slopes favour the growth of crops that require more sunlight/less moisture (accept examples - citrus fruit/thick skinned fruit) (2)
South facing slope encourage the growth of products that require cooler conditions with more moisture (accept examples) (2)
[ANY ONE] (1 x 2) (2)

(b) People prefer to settle on the warmer north facing slopes (2)
EXPLAIN
Save on energy costs on north facing slopes (2)
South facing slopes require more and expensive heating methods of settlements (2)
Cooler south facing slopes are not favourable for human settlements (2)
South facing slopes will be colder and not ideal for settlement (2)
South facing slopes receive more precipitation and fog and not favourable for settlement (2)
[ANY TWO-MUST REFER TO SPECIFIC SLOPE] (2 x 2) (4)

1.5 1.5.1 The relationship between the length of streams and the area drained in a drainage basin (1)
Accept:
The total length of streams per unit area (1)
[CONCEPT] (1 x 1) (1)

1.5.2 **A** has a lower drainage density (1)
B has a higher drainage density (1) (2 x 1) (2)

1.5.3 Rocks that are more permeable allow for more infiltration/less runoff (2)
(1 x 2) (2)

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1.5.4 2nd (order) (2) (1 x 2) (2)

1.5.5 At A the drainage density is low and the stream order is low (2)
At B the drainage density is high and the stream order is high (2) (2 x 2) (4)

DESCRIBE

1.5.6 (a) Steeper gradients increase the velocity (speed) of the water resulting in higher runoff/discharge, more stream channels and a higher drainage density (2)

EXPLAIN HOW

(1 x 2) (2)

(b) Increasing precipitation will increase the volume of water runoff/discharge resulting in more stream channels and a higher drainage density (2)
(1 x 2) (2)

1.6 1.6.1 Y(1) (1 x 1) (1)

1.6.2 Wind gap (1), Elbow of capture (1)
Misfit stream (1), River gravel (1)

GIVE EVIDENCE

Captor/pirate stream (1)
Captured/beheaded stream (1)
Watershed between river X and Y had been eroded (1)
River Y cut off from its original water supply (1)
The water in the upper stream of river Y is diverted to river X (1)
River X cutting backwards (head ward erosion) through the watershed towards river Y (1)
Volume of water in one of the rivers (X/W) is greater / Line indicating the river is thicker (X/W) indicating greater volume (1)
[ANY TWO] (2 x 1) (2)

1.6.3 Rivers that flow over softer/less resistant rock cause an increase in headward erosion (2)
Rivers that flow over hard/more resistant rock limits headward erosion (2)
[ANY ONE] (1 x 2) (2)

1.6.4 The increasing volume of water increases the erosive power of the river (2)
The increasing velocity of water results in more erosive ability (2)
Re-energises the captor stream (2)
[ANY ONE] (1 x 2) (2)

1.6.5 More water at **W** (weirs, canals, furrows, water points) available for farming (2)

DISCUSS HOW

Silt will be deposited on the floodplain around **W** resulting in more fertile soil increasing farming activities over a wide area/large-scale crop farming (2)
Increased farming at **W** will increase employment opportunities (2)
Increased production at **W** will result in greater profits/exports (2)
Improvement in infrastructure at **W** due to increased farming (2)
Encourages the establishment of industries linked to agricultural activities at **W** (2)
Increased production leads to food security (2)
More water available to generate hydro-electricity to supply power (2)
More water will create more grazing to improve livestock farming (2)
[**ANY FOUR]** (4 x 2) (8)

[75]

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QUESTION 2

2.1 2.1.1 E (1)

2.1.2 F (1)

2.1.3 G (1)

2.1.4 A (1)

2.1.5 C (1)

2.1.6 I (1)

2.1.7 D (1)

2.1.8 B (1) (8 x 1) (8)

2.2 2.2.1 B (1)

2.2.2 A (1)

2.2.3 B (1)

2.2.4 B (1)

2.2.5 A (1)

2.2.6 A (1)

2.2.7 B (1) (7 x 1) (7)

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2.3 2.3.1 Thermal low (1) heat low (1)
High temperatures (1)
Overcast conditions (1)
South Indian- and South Atlantic high are in a southerly position (1)
Dominant low (1)
[ANY ONE] (1 x 1) (1)

2.3.2 4 hPa/mb (1) (1 x 1) (1)

2.3.3 South Indian (1)
Mauritius Anticyclone (1)
[ANY ONE] (1 x 1) (1)

2.3.4 South east (1) South easterly (1) **[ANY ONE]**
5 knots (1) (2 x 1) (2)

2.3.5 The isobars are far apart/gentle pressure gradient indicating low wind speeds (2) (1 x 2) (2)

2.3.6 The South Indian high pressure is further south and away from the land in summer (2)
EXPLAIN HOW On-shore winds from the South Indian high have a larger fetch as they are located further south in summer (2)
More water is evaporated over the warm Indian ocean (2)
Moisture laden air from the South Indian high rises (advects) towards the low pressure in the interior (2)
Intense heating over the land in summer causes thermal/heat low pressures to develop (2)
Unstable air causes convectional rainfall/thunderstorms (2)
[ANY FOUR] (4 x 2) (8)

2.4.1 Leeward (1) (1 x 1) (1)

2.4.2 Kalahari (1)
Continental (1)
[ANY ONE] (1 x 1) (1)

2.4.3 (a) A low pressure (small/weak) cell that is found along the coast (1)
[CONCEPT] (1 x 1) (1)

(b) The movement of air is channelled from the interior to the coast (2)
A pressure gradient develops between the Kalahari high in the interior and the coastal low (2)
[ANY ONE] (1 x 2) (2)

(c) Adiabatic heating (as air descends) (2)
Air heats up as it descends (2)
Air heats up according to the dry adiabatic lapse rate/increase of 1ºC/100m (2)
[ANY ONE] (1 x 2) (2)

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2.4.4 Damaged crops decrease the production (produce) available to sell on local/international markets (2)

EXPLAIN NEGATIVE ECONOMIC IMPACT ON FARMING

Decrease in crops result in lower profits causing financial instability (2)
Livestock are killed resulting in lower production which leads to financial losses (2)
Grazing land is destroyed that causes livestock to die or to be sold at reduced prices (2)
Destruction of natural vegetation causes soil erosion that renders valuable farming land infertile (2)
Fires can destroy farm buildings/machinery which insurance companies will have to pay for (2)
Risk of fire leads to farmers paying higher premiums for personal insurance (2)
Farmers may be forced to abandon their farms/loss of livelihood and seek employment elsewhere (2)
Increase in unemployment due to decline in production on farms (2)
Loss of lives of farm workers/labour force decreases productivity (2)
[ANY TWO] (2 x 2) (4)

2.4.5 Awareness (education) amongst farmworkers (2)
Watch towers (2)

SUGGEST STRATEGIES

Farmers should equip themselves with fire-fighting equipment (2)
Sheds to keep livestock safe (2)
Building of storage dams/reservoirs (2)
Partnerships amongst farmers (2)
Creating fire breaks (2)
Community awareness (2)
Installing fire warning systems/alarms (2)
Sprinkler systems (2)
[ANY TWO] (2 x 2) (4)

2.5 2.5.1 An arrangement of streams in a drainage basin (1)
[CONCEPT] (1 x 1) (1)

2.5.2 A – dendritic (1) (1 x 1) (1)
B – radial (centrifugal) (1) (1 x 1) (1)

2.5.3 Resembles branches of a tree (1)
Tributaries join at acute angles (1)
Forms on rocks that are uniformly resistant to erosion (1)
Forms on horizontally layered sedimentary rock (1)
[ANY TWO] (2 x 1) (2)

2.5.4 Originates at the source such as domes which allows rivers to radiate outwards (2) (1 x 2) (2)

2.5.5 The land is generally flat because of the underlying rock structure (layered) that makes it suitable for settlements (accept examples) (2)
The tributaries of the rivers are arranged in such a way that they make water accessible for settlements (2) (2 x 2) (4)

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2.5.6 **DRAINAGE PATTERN A**

EXPLAIN HOW
Massive igneous and horizontally layered sedimentary rocks that are uniformly resistant to erosion cause tributaries to join at acute angles (2)
Massive igneous and sedimentary layered rocks that are uniform in resistance to erosion will result in tributaries of similar length (2)
[ANY ONE] (1 x 2) (2)

DRAINAGE PATTERN B
Massive igneous rocks which is in a dome shape cause drainage pattern B (2)
Dome feature causes rivers to flow downwards from a central point (2)
[ANY ONE] (1 x 2) (2)

2.6 2.6.1 Lower (1)
Accept:
Old/Plain stage (1 x 1) (1)

2.6.2 Decreases the velocity of the water which causes the river to meander (2)
River will erode laterally/cut through less resistant rock (2)
[ANY ONE] (1 x 2) (2)

2.6.3 Erosion due to faster flowing water removes material that results in an undercut slope (2)
Sediments are deposited due to decreasing velocity which results in the formation of the slip-off slope (2) (2 x 2) (4)

2.6.4 Faster flowing water causes erosion/undercutting on the outer bank (2)
River deposits material on the inner bank (2)
EXPLAIN HOW
Meander neck narrows due to continuous erosion and deposition (2)
The neck is broken through due to heavy rainfall/flooding/increase volume of water (2)
Meander loop is now separated from the main channel (2)
The main river develops a straight stream (2)
Cut-off meander is now known as an oxbow lake (2)
[ANY FOUR] (4 x 2) (8)
[75]

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SECTION B: RURAL AND URBAN SETTLEMENTS AND ECONOMIC GEOGRAPHY OF SOUTH AFRICA

QUESTION 3

3.1 3.1.1 C (1)

3.1.2 C (1)

3.1.3 D (1)

3.1.4 A (1)

3.1.5 D (1)

3.1.6 B (1)

3.1.7 C (1) (7 x 1) (7)

3.2 3.2.1 Heavy (1)

3.2.2 raw material (1)

3.2.3 footloose (1)

3.2.4 Light (1)

3.2.5 Market (1)

3.2.6 Bridge (1)

3.2.7 Ubiquitous (1)

3.2.8 Heavy (1) (8 x 1) (8)

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3.3 3.3.1 AIM
Correct the injustices of racially-based land distribution (1)
Bring about equitable distribution and access to land (1)
Give land back to previously disadvantaged citizens (1)
Assist in national reconciliation and stability (1)
To alleviate poverty and uplifting rural women (1)
[ANY ONE] (1 x 1) (1)

3.3.2
'by reducing unemployment' (1)
'giving previously disadvantaged farmers the opportunity to become commercial farmers' (1) (2 x 1) (2)

3.3.3 WHY
Willing seller and willing buyer clause delays the process (2)
Land reform policy is very costly to implement (2)
It takes time to resolve land claim disputes (2)
The land reform policies are being challenged due to disagreements (government/traditional leaders) which delays the process (2)
No proper documents of previous ownership delay the process (2)
There is lack of a reliable monitoring system and evaluation of the process (2)
Gaps in the current policies which compromise effective implementation of land reform (2)
Government lacks capacity/efficiency/ shortage of skills to run the programme (2)
Lack of business and financial support to run the programme (2)
Mismanagement/Corruption by some of the officials managing the process (2)
Land reform has not been a political priority (2)
Money wasted on failed projects (2)
[**ANY TWO]** (2 x 2) (4)

3.3.4 EXPLAIN
Landless people in rural area will now be able to own land (2)
More people in rural area would be able to practise farming (2)
People will be able to provide food for themselves/family (2)
Rural community earn an income for themselves and alleviate poverty (2)
Standard of living will improve as people are earning an income (2)
Living areas of long time tenants will be secured as no evictions will take place (2)
Land reform will create job opportunities in rural communities (2)
Improvement of infrastructure will improve accessibility in rural communities (2)
Promote a move from subsistence farming to commercial farming (2)
Upskilling and training of emerging commercial farmers (2)
Inject investment to the rural economy as they support local business (2)
[ANY FOUR] (4 x 2) (8)

3.4 3.4.1
Increase in the percentage of people living in urban areas (1)
[CONCEPT] (1 x 1) (1)

3.4.2
35.2% (1) (1 x 1) (1)

3.4.3
Services (accept examples) (1)
Facilities (accept examples) (1)
[ANY ONE] (1 x 1) (1)

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3.4.4 Strain on services/facilities (2)
HOW Quality of service/facilities will deteriorate (2)
Increased costs to maintain services/facilities (2)
Slows down service delivery (2)
[ANY TWO] (2 x 2) (4)

3.4.5 More people would increase the demand for public/private transport (2)
EXPLAIN HOW Increased in motor vehicles would put a strain on the road infrastructure (2)
Damaged roads (e.g. potholes) would slow down traffic (2)
Increase in the number of accidents slow down traffic (2)
Increase in the volume of traffic during peak hour (2)
[ANY TWO] (2 x 2) (4)

3.4.6 Increasing the number of lanes (2)
GIVE Creating specific lanes (e.g. buses, cyclist, rapid transport systems) (2)
Decentralisation of economic activities (2)
Create one-way/ring roads/bypasses (2)
Parking meters/E-tolls (2)
Opening more lanes for peak hours (2)
Park and ride facilities (2)
Synchronised traffic lights (2)
Traffic lights to work with solar panels (load shedding) (2)
[ANY TWO] (2 x 2) (4)

3.5 3.5.1 Witwatersrand (Basin) (1) (1 x 1) (1)

3.5.2 R2.6 billion (2) (1 x 2) (2)

3.5.3 The price (value) of gold increased (2)
Earned more from foreign exchange (2)
[ANY ONE] (1 x 2) (2)

3.5.4 A decreased in profits results in the reduction of the number of employees (can give examples-fluctuations in the price of gold/closure of gold mines) (2)
EXPLAIN The demand for gold decreased resulting in less sales and less employees required (2)
Strikes, labour issues and land claims may lead to mining being stopped leaving workers unemployed (2)
Employees were retrenched due to an increase in production costs (2)
Closure of mines due to mine accidents/disasters (accept examples) lead to loss of jobs (2)
Marginal mines that are not profitable shut down (2)
Mechanisation reduces the need for manual labour (2)
[ANY TWO] (2 x 2) (4)

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3.5.5 EXPLAIN HOW
Industries were established to process gold ore (2)
Gold used as raw material in the jewellery industry (2)
Skills acquired in gold mining has helped workers obtain jobs in industry (2)
Industries (accept examples) were established to produce machinery and equipment used for gold mining (link industries) (2)
The demand for timber to support the underground tunnels led to the establishment of the timber industry (2)
Created linked industries that support industries producing machinery/equipment for mining (accept examples) (2)
It stimulated local production of goods decreasing imports (2)
[ANY THREE] (3 x 2) (6)

3.6 3.6.1
North West (1)
Gauteng (1)
Mpumalanga (1)
[ANY ONE] (1 x 1) (1)

3.6.2
Links with other counties (Namibia/Botswana/Mozambique) (1)
Coast to coast (1)
[ANY ONE] (1 x 1) (1)

3.6.3 QUOTE
'Rustenburg stands to benefit from the increase in traffic along this route' (1)
(1 x 1) (1)

3.6.4 GIVE POSITIVE IMPACT
Stimulating economic development (2)
Developing nodes along the logistical corridor (2)
More job opportunities (2)
Alleviate poverty (2)
Standard of living will improve (2)
Infrastructure will be upgraded (2)
Increase in passing traffic will support businesses (2)
Increase in ecotourism (2)
More opportunities for small scale entrepreneurs (2)
Multiplier effect on the business/more linked industries (2)
Attract new investors (2)
Influx of skilled workers coming to town (2)
[ANY TWO] (2 x 2) (4)

3.6.5 SUGGEST CHALLENGES
Difficult to attract investors (2)
Reduced traffic volume between growth points (2)
COVID-19 lockdown regulations (2)
Businesses not always willing to decentralise (2)
Lack of capacity building and training (2)
Lack of large anchor projects (2)
People not willing to relocate (2)
Power outages/load shedding (2)
Labour strikes and community protests (2)
Lack of skilled local people (2)
Employing people from outside the area (2)
[ANY FOUR] (4 x 2) (8)
[75]

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QUESTION 4

4.1 4.1.1 dispersed (1)

4.1.2 linear (1)

4.1.3 nucleated (1)

4.1.4 dispersed (1)

4.1.5 linear (1)

4.1.6 nucleated (1)

4.1.7 dispersed (1)

4.1.8 nucleated (1) (8 x 1) (8)

4.2 4.2.1 C (1)

4.2.2 C (1)

4.2.3 B (1)

4.2.4 D (1)

4.2.5 A (1)

4.2.6 B (1)

4.2.7 B (1) (7 x 1) (7)

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4.3 4.3.1 Transport routes (roads) enter from different directions (1) (1 x 1) (1)

4.3.2 Due to the uneven expansion of the CBD into the transition zone (2) (1 x 2) (2)

4.3.3 EXPLAIN
Availability of large amounts of land for industries to be established (2)
Land is cheaper which makes it more affordable for industries (2)
Accessibility to bulk transport routes for transportation of raw material and finished products (2)
Availability of (skilled and unskilled) labour for industries (2)
[ANY TWO] (2 x 2) (4)

4.3.4 EXPLAIN WHY
High rentals have forced businesses to relocate to other commercial areas with lower rentals and more space (2)
Landlords/owners do not refurbish/maintain buildings that forces businesses to relocate to more modern parts of the city (2)
The CBD has become susceptible to crime which discourages customers (2)
The large number of informal traders is unattractive for businesses (2)
Traffic congestion forces consumers to shop elsewhere and decreases business (2)
There is a lack of parking space and a shortage of parking garages which discourages businesses to the CBD (2)
The CBD has decreased in accessibility because of urban expansion which impacts negatively on businesses (2)
Functional magnetism- businesses are forced to move from the CBD to be closer to businesses that have moved (2)
Functional prestige encourages businesses to move to other areas (2)
Functional convenience is no longer a pull factor (2)
Associated with (noise, air and land) pollution which creates an unpleasant/unhealthy environment (2)
[ANY FOUR - ACCEPT IF CANDIDATES REFER TO THE ATTRACTIVENESS OF OTHER AREAS] (4 x 2) (8)

4.4 4.4.1 Limited evidence of planning (1)
Variety of building material used for construction (1)
Lack of basic services (1)
Lack of infrastructure (1)
Shacks (are clustered) (1)
[ANY ONE] (1 x 1) (1)

4.4.2 Unemployment (1)
Low paying jobs (1)
Poverty (1)
High cost of formal housing/rentals (1)
Limited budgets for low cost housing (1)
Develops close to place of employment (1)
Occupying vacant land at no cost (1)
[ANY TWO] (2 x 1) (2)

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4.4.3 HOW
Steep slopes will enhance runoff and flood houses (2)
Mud slides/floods would destroy/wash homes away (2)
Water undercuts steep slope which will cause homes to collapse (2)
[ANY TWO] (2 x 2) (4)

4.4.4 WHY
Use of open fires to keep warm/to cook (2)
Building material is highly flammable (2)
High density of buildings/structures (2)
Limited accessibility for emergency services (can give examples) (2)
Limited equipment to extinguish fires (2)
Illegal electricity connections (2)
Unattended paraffin/gas cookers/candles (2)
[ANY TWO] (2 x 2) (4)

4.4.5 EXPLAIN
Provide electricity to limit open fires (2)
Building proper roads for fire services to access the area (2)
Demarcated areas for people to build to prevent rapid spreading of fires (2)
Supply proper building material to make the buildings less flammable (2)
Awareness campaigns to educate people on the dangers of fires (2)
[ANY TWO] (2 x 2) (4)

4.5 4.5.1
'… lack money to buy food and are unable to produce their own food' (1)
'… inability to secure employment or to generate income' (1)
'… characterised by few income- earners and many dependents (1)
[ANY TWO] (2 x 1) (2)

4.5.2
To prevent hunger and famine (2)
Maintain good health of people (2)
It will prevent social uprisings (2)
Reduces the crime rate (2)
To maintain a productive population (2)
[ANY ONE] (1 x 2) (2)

4.5.3
They would not have surplus money/budget to buy food (accept examples) (2)
(1 x 2) (2)

4.5.4 EXPLAIN
They produce their own food (practise subsistence farming) which ensures the availability of food (2)
They live communally and can share food (2)
[ANY ONE] (1 x 2) (2)

4.5.5 SUGGEST FOR SMALL HOUSEHOLDS
More employment/skills training for vulnerable households (2)
Accelerate land reform process (2)
Encourage urban farming (2)
Zero rate VAT on basic foods (2)
Subsidies for food production (2)
Encouraging social and private partnerships (2)
Encourage small-scale farming (2)
Genetically modified staple foods (2)
Community soup kitchens/school feeding schemes (2)
Distribution of food parcels (2)
[**ANY FOUR]** (4 x 2) (8)

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4.6 4.6.1 Indian Ocean (1) (1 x 1) (1)

4.6.2 Automobile/motor vehicles (1) (1 x 1) (1)

4.6.3 EXPLAIN
The (Algoa) bay provided an ideal location for the construction of harbours for exporting and importing goods (2)
The area has flat land that is suitable for the construction of industries (2)
Located in the wetter eastern half of the country ensuring a supply of water for processing industries (2)
The climate is conducive to the production of raw materials for industries (2)
Availability of wind to generate energy (2)
[ANY TWO] (2 x 2) (4)

4.6.4 WHY
Investment would provide more employment (2)
Better salaries will increase buying power (2)
Multiplier effect/link industries develop the economy (2)
Broaden the skills base (2)
Infrastructural changes stimulate industrial growth (2)
Stimulates the growth of the tertiary economic sector e.g. tourism (2)
Reduces the migration of skilled labour out of the region (2)
It provides work opportunities to the local people therefore contribute to the GDP of the province/country (2)
Availability of raw materials for the textile industry (2)
[ANY TWO] (2 x 2) (4)

4.6.5 HOW
It has forced industries to embrace fourth industrial revolution technology to improve efficiency and quality of production (2)
Upskilling of workers to adapt to new automation/technology (2)
Specialist/highly skilled workers have had to be brought in from other countries to improve the quality of production/share expertise (2)
Infrastructure directly involved in the processing and exporting of goods had to be upgraded (2)
Industries to implement multiple shifts (night and day) to improve production to meet the demand (2)
Exporting of processed goods reduces imports (2)
[ANY TWO] (2 x 2) (4)

[75]

TOTAL: 225

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basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE/ NATIONAL SENIOR CERTIFICATE

GRADE 12

GEOGRAPHY P1

NOVEMBER 2020(2)

MARKS: 225

TIME: 3 hours

This question paper consists of 15 pages and a 12-page annexure.

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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. Do NOT write in the margins of the ANSWER BOOK.
8. Draw fully labelled diagrams when instructed to do so.
9. Answer in FULL SENTENCES, except when you have to state, name, identify or list.
10. Indicate the unit of measurement or compass direction when quoting figures or values in your answer, e.g. 45 m, 1 020 hPa, 14 °C and north (N).
11. Use full sentences when answering paragraph-type questions.
12. Write neatly and legibly.

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SECTION A: CLIMATE, WEATHER AND GEOMORPHOLOGY

QUESTION 1

1.1 Refer to FIGURE 1.1 showing air movement associated with valley climates. Match the descriptions below with winds A and B. Write only the letter A or B next to the question numbers (1.1.1 to 1.1.7) in the ANSWER BOOK, e.g. 1.1.8 B.

1.1.1 The air movement associated with upslope flow

1.1.2 Air movement that occurs at the night

1.1.3 Air movement that originates due to the rate of insolation

1.1.4 Air movement that mostly reduces air pollution at the bottom of the valley

1.1.5 Air movement associated with dense, heavy air

1.1.6 Air movement associated with the formation of frost on the valley floor

1.1.7 The direction of air movement determined by gravitational forces

(7 x 1) (7)

1.2 Choose a term from COLUMN B that matches the characteristic/description in COLUMN A. Write only the letter (A–I) next to the question numbers (1.2.1 to 1.2.8) in the ANSWER BOOK, e.g. 1.2.9 J.

COLUMN A		COLUMN B	
1.2.1	Drainage pattern that is common along steep slopes of ridge or hills	A	trellis
1.2.2	Drainage pattern found in areas where glaciers have occurred	B	dendritic
1.2.3	The main stream has right angle bends in this drainage pattern	C	radial
1.2.4	Drainage pattern associated with streams that flow towards a central low-lying area	D	rectangular
1.2.5	Drainage pattern associated with a dome feature	E	deranged
1.2.6	Drainage pattern that originates in areas with alternative layers of hard and soft rock	F	antecedent
1.2.7	Drainage pattern that is usually uniform and tributaries join at acute angles	G	centripetal
1.2.8	The river is younger than the underlying rock structure over which it flows	H	superimposed
		I	parallel

(8 x 1) (8)

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1.3 FIGURE 1.3 shows a mid-latitude cyclone on a synoptic weather map of Southern Africa.

1.3.1 Give evidence from the diagram that suggests that weather system **A** is a mid-latitude cyclone. (1 x 1) (1)

1.3.2 Why does this weather system originate at the polar front? (1 x 2) (2)

1.3.3 Give a reason for the direction of movement of this weather system. (1 x 2) (2)

1.3.4 Why is the cold front associated with severe weather conditions? (1 x 2) (2)

1.3.5 Explain the formation of the stage of development shown in FIGURE 1.3 of the mid-latitude cyclone. (4)

1.3.6 Why does the cold front of the mid-latitude cyclone have a positive impact on agricultural activities in the Western Cape? (2 x 2) (4)

1.4 FIGURE 1.4 shows the presence of a line thunderstorm across South Africa.

1.4.1 Does the line thunderstorm obtain its source of moisture from ocean **A** or **B**? (1 x 1) (1)

1.4.2 Why is cold, dry air fed in from the South Atlantic High-Pressure Cell? (1 x 2) (2)

1.4.3 Explain how the formation of the moisture front at **C** results in line thunderstorms. (2 x 2) (4)

1.4.4 In a paragraph of approximately EIGHT lines, explain the destructive (harmful) nature of line thunderstorms. (4 x 2) (8)

1.5 FIGURE 1.5 is an extract on deltas.

1.5.1 Where do deltas form? (1 x 1) (1)

1.5.2 What evidence in the extract indicates that deltas are densely populated? (1 x 1) (1)

1.5.3 According to the extract, how are cities disturbing the natural formation of deltas? (1 x 1) (1)

1.5.4 Discuss the importance of protecting deltas. (2 x 2) (4)

1.5.5 A recent environmental impact assessment has highlighted concerns about the future sustainability of deltas. In a paragraph of approximately EIGHT lines, suggest strategies to protect areas like deltas from the negative impact of human activities. (4 x 2) (8)

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1.6 Refer to FIGURE 1.6 showing river rejuvenation.

1.6.1 What is *river rejuvenation*? (1 x 1) (1)

1.6.2 Which stage (course) of the river is illustrated in FIGURE 1.6? (1 x 1) (1)

1.6.3 Give evidence from FIGURE 1.6 to support your answer to QUESTION 1.6.2. (1 x 1) (1)

1.6.4 Why is there an increase in the rate of erosion in the river after rejuvenation? (2 x 2) (4)

1.6.5 Identify the changes to the following features after river rejuvenation took place:

(a) River channel (1 x 2) (2)

(b) Meander (1 x 2) (2)

1.6.6 Discuss the possible negative impact of river rejuvenation on storage dams in the lower course after the point of rejuvenation (knickpoint). (2 x 2) (4)

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QUESTION 2

2.1 Refer to FIGURE 2.1 showing a high pressure and low pressure cell in the Southern Hemisphere. Match the statements below with the **high pressure cell** or **low pressure cell**. Write down your answer next to the question numbers (2.1.1 to 2.1.8) in the ANSWER BOOK, e.g. 2.1.9 low-pressure cell.

2.1.1 Associated with rising air

2.1.2 Air diverges on the surface from this pressure cell

2.1.3 Associated with the clockwise movement of air

2.1.4 Unstable weather conditions over the interior

2.1.5 Associated with ridging

2.1.6 Associated with heavy rain and hail

2.1.7 Dominates the land in winter

2.1.8 Berg wind conditions develop when it interacts with a coastal low

(8 x 1) (8)

2.2 Choose a concept/term from COLUMN B that matches the description in COLUMN A. Write only the letter (A–H) next to the question numbers (2.2.1 to 2.2.7) in the ANSWER BOOK, e.g. 2.2.8 I.

COLUMN A		COLUMN B	
2.2.1	Area drained by a river and its tributaries	A	catchment area
2.2.2	High-lying area that separates two different drainage basins	B	interfluve
2.2.3	Starting point of a river	C	confluence
2.2.4	Term that describes the main river and its tributaries	D	drainage basin
2.2.5	Point where the river enters the sea	E	river system
2.2.6	Elevated land that separates streams in the same drainage basin	F	watershed
2.2.7	Point along the river where two or more streams meet	G	river source
		H	river mouth

(7 x 1) (7)

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2.3 Refer to FIGURE 2.3, which shows the path of a tropical cyclone.

2.3.1 Give evidence that this tropical cyclone is in the Southern Hemisphere. (1 x 1) (1)

2.3.2 Why is the Mozambique Channel usually ideal for the increase in temperature within the tropical cyclone? (1 x 2) (2)

2.3.3 Explain how the intensity of the tropical cyclone increased as it moved from area **A** to area **B**. (2 x 2) (4)

2.3.4 Discuss the conditions that could have caused the cyclone to weaken as it reached area **C**. (2 x 2) (4)

2.3.5 Evaluate the physical (natural) negative impact of tropical cyclones along the coastline of Mozambique. (2 x 2) (4)

2.4 Refer to FIGURE 2.4, an extract based on urban heat islands.

2.4.1 Define the concept *urban heat island*. (1 x 1) (1)

2.4.2 Give TWO quotations from the extract that suggests that poor planning is responsible for increasing temperatures in cities. (2 x 1) (2)

2.4.3 Why is the urban heat island effect more concentrated at night? (2 x 2) (4)

2.4.4 In a paragraph of approximately EIGHT lines, provide sustainable green strategies, as referred to in the extract, that can reduce the heat island effect. (4 x 2) (8)

2.5 Refer to FIGURE 2.5, which shows river capture (stream piracy).

2.5.1 Define the concept *river capture* as shown in sketch **B**. (1 x 1) (1)

2.5.2 Identify features **1** and **2** of river capture in sketch **B**. (2 x 1) (2)

2.5.3 What could have caused the captor stream to erode through the watershed? (2 x 1) (2)

2.5.4 Explain the process that resulted in the formation of the misfit stream. (2 x 2) (4)

2.5.5 Describe the change in the flow characteristics of the captor stream. (3 x 2) (6)

2.6 FIGURE 2.6 shows a river profile.

2.6.1 Is the river profile in FIGURE 2.6 graded or ungraded? (1 x 1) (1)

2.6.2 Give evidence for your answer to QUESTION 2.6.1. (1 x 2) (2)

2.6.3 Why will there be more erosion than deposition at **A**? (2 x 2) (4)

2.6.4 In a paragraph of approximately EIGHT lines, explain the fluvial processes that a river undergoes to reach a graded profile. (4 x 2) (8)

[75]

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

QUESTION 3

3.1 Refer to FIGURE 3.1 showing models of urban structure. Choose the correct answer from the options given in brackets to make the statement TRUE. Write only your answer next the question numbers (3.1.1 to 3.1.7) in the ANSWER BOOK, e.g. 3.1.8 concentric zone.

3.1.1 The model which shows land use arranged in wedges is known as the (multiple nuclei/sector) model.

3.1.2 In the (multiple nuclei/concentric zone) model the CBD is the focal point around which the urban area develops.

3.1.3 Industries and low-cost housing develop along main roads or railways in the (concentric zone/sector) model.

3.1.4 The (sector/multiple nuclei) model is most applicable to modern cities.

3.1.5 The (sector/concentric zone) model does not consider development along transport routes.

3.1.6 Cities that have several focal points around which urban development occurs are examples of the (concentric zone/multiple nuclei) model.

3.1.7 The (sector/multiple nuclei) model displays characteristics of the concentric zone model. (7 x 1) (7)

3.2 Various options are provided as possible answers to the following statements. Choose the answer and write only the letter (A–D) next to the question numbers (3.2.1 to 3.2.8) in the ANSWER BOOK, e.g. 3.2.9 D.

3.2.1 The economic sector associated with the provision of transport is referred to as the … sector.

A primary
B secondary
C tertiary
D quaternary

3.2.2 The total value of all goods and services produced in one year within a country is called the …

A per capita income.
B gross domestic product.
C gross national product.
D gross domestic income.

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3.2.3 An example of an economic activity concerned with the extraction of raw material is ...

A transport.
B construction.
C mining.
D research.

3.2.4 An exchange of goods and services between countries is referred to as …

A international trade.
B domestic trade.
C foreign exchange.
D trade balance.

3.2.5 … refers to goods that are brought into the country.

A Exports
B Imports
C Market
D Trade

3.2.6 The domestic market is also known as the … market.

A regional
B foreign
C provincial
D home

3.2.7 Income generated by a country through exports refers to …

A per capita income.
B foreign exchange.
C export-orientated industries.
D export market.

3.2.8 An example of a quaternary economic activity is …

A fishing.
B ship building.
C service provision.
D research. (8 x 1) (8)

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3.3 Refer to FIGURE 3.3, a graph on rural depopulation.

3.3.1 Define the concept *rural depopulation*. (1 x 1) (1)

3.3.2 Determine the number of people living in the rural areas of South Africa in 2004. (1 x 1) (1)

3.3.3 Is the rural population showing an increase or a decrease from 2004 to 2020? (1 x 1) (1)

3.3.4 How will this trend (the answer to QUESTION 3.3.3) have a negative impact on the standard of living of the rural population? (2 x 2) (4)

3.3.5 Explain TWO social factors that contributed to rural depopulation in South Africa. (2 x 2) (4)

3.3.6 Suggest TWO sustainable strategies to encourage people to return to rural areas. (2 x 2) (4)

3.4 Refer to FIGURE 3.4, a cartoon based on an urban issue related to rapid urbanisation.

3.4.1 Identify the urban issue shown in the cartoon. (1 x 1) (1)

3.4.2 Give a reason for your answer to QUESTION 3.4.1. (1 x 2) (2)

3.4.3 Why is the urban issue in the cartoon common in most cities? (2 x 2) (4)

3.4.4 In a paragraph of approximately EIGHT lines, discuss the negative impact of this urban issue on motorists. (4 x 2) (8)

3.5 Refer to the extract in FIGURE 3.5 based on cattle farming in South Africa.

3.5.1 Identify ONE problem from the extract that poses a challenge to cattle farmers. (1 x 1) (1)

3.5.2 Why, according to the extract, is the Bonsmara breed ideal for cattle farming? (2 x 1) (2)

3.5.3 Suggest TWO ways in which the government can assist small-scale cattle farmers to increase beef production. (2 x 2) (4)

3.5.4 In a paragraph of approximately EIGHT lines, discuss how an increase in beef production can contribute to food security in South Africa. (4 x 2) (8)

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3.6 Refer to FIGURE 3.6 and study the information on the PWV (Gauteng) Industrial Region.

3.6.1 Which of the urban settlements in the PWV (Gauteng) Industrial Region shown in FIGURE 3.6 started out as a gold mining settlement? (1 x 1) (1)

3.6.2 Quote TWO statistics from FIGURE 3.6, which indicates that the PWV (Gauteng) Industrial Region is the economic heartland of South Africa. (2 x 1) (2)

3.6.3 Discuss TWO factors that have favoured the development of industries in the PWV (Gauteng) Industrial Region. (2 x 2) (4)

3.6.4 The PWV (Gauteng) Industrial Region faces many challenges, including high levels of unemployment and water shortages.

(a) Why has water supply hindered the development of the PWV (Gauteng) Industrial Region? (1 x 2) (2)

(b) How did the PWV (Gauteng) Industrial Region overcome the shortage of water supply for industries? (1 x 2) (2)

(c) Why does the PWV (Gauteng) Industrial Region face challenges of unemployment despite the high concentration of industries in this industrial region? (2 x 2) (4)

[75]

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QUESTION 4

4.1 Refer to FIGURE 4.1 showing rural settlement patterns and shapes. Choose the correct answer from the options given in brackets to make the statement TRUE. Write only your answer next the question numbers (4.1.1 to 4.1.8) in the ANSWER BOOK, e.g. 4.1.9 dispersed.

4.1.1 A (dispersed/nucleated) settlement pattern is associated with large machinery.

4.1.2 The settlement pattern that encourages more community activities is (nucleated/dispersed).

4.1.3 The lack of safety and an increased vulnerability to crime is more predominant in (nucleated/dispersed) settlement patterns.

4.1.4 (Nucleated/Dispersed) settlement patterns are commonly associated with privately owned land.

4.1.5 The settlement that develops at the intersection of transport routes has as a (linear/crossroads) shape.

4.1.6 (Circular/Linear) shaped settlements develop around a focal point.

4.1.7 A (circular/linear) shaped settlement forms along transport routes.

4.1.8 The settlement shape responsible for the greatest accessibility is a (linear/crossroads) settlement. (8 x 1) (8)

4.2 Various options are provided as possible answers to the following statements. Choose the answer and write only the letter (A–D) next to the question numbers (4.2.1 to 4.2.7) in the ANSWER BOOK, e.g. 4.2.8 D.

4.2.1 ... is the staple food of many people in South Africa.

A Fruit
B Maize
C Wheat
D Beef

4.2.2 Agricultural activities are associated with the ... economic sector.

A quaternary
B secondary
C tertiary
D primary

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4.2.3 … is when people in a country have access to enough nutritious food.

A Food insecurity
B Malnutrition
C Famine
D Food security

4.2.4 An advantage of genetically modified (GM) crops is that they ...

A have less nutritional value.
B produce more food per hectare.
C have a shorter storage life.
D are less expensive.

4.2.5 Monoculture is a characteristic of ... farming.

A small-scale
B traditional
C large-scale
D subsistence

4.2.6 Sugar cane farming is mainly practised in ...

A the Eastern Cape.
B the Western Cape.
C KwaZulu-Natal.
D North West.

4.2.7 ... are factors that favour agricultural production in South Africa.

A Floods and climate change
B Research and climatic differences
C Crime and labour strikes
D Fluctuating prices and subsistence farming (7 x 1) (7)

4.3 FIGURE 4.3 shows urban sprawl.

4.3.1 Define the concept *urban sprawl*. (1 x 1) (1)

4.3.2 Give evidence from FIGURE 4.3 that suggests that urban sprawl is taking place. (1 x 2) (2)

4.3.3 Why do local authorities find it difficult to control urban sprawl? (2 x 2) (4)

4.3.4 In a paragraph of approximately EIGHT lines, discuss the unfavourable environmental conditions caused by urban sprawl in the rural-urban fringe. (4 x 2) (8)

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4.4 Refer to FIGURE 4.4 based on an urban environmental justice issue.

4.4.1 Define the concept *environmental injustice*. (1 x 1) (1)

4.4.2 State the environmental injustice evident in FIGURE 4.4. (1 x 1) (1)

4.4.3 Give evidence from the photograph to support your answer to QUESTION 4.4.2. (1 x 1) (1)

4.4.4 Why is your answer to QUESTION 4.4.2 considered an environmental injustice? (2 x 2) (4)

c

4.4.5 Discuss how this environmental injustice will affect the local community. (2 x 2) (4)

4.4.6 Explain how local authorities can develop sustainable solutions to reduce the impact of this injustice issue on the environment. (2 x 2) (4)

4.5 FIGURE 4.5 is based on strategies for industrial development: the Saldanha Bay Industrial Development Zone (SBIDZ).

4.5.1 Name the new local investor in Saldanha Bay. (1 x 1) (1)

4.5.2 What will be the core function of the new investor in the Saldanha Bay IDZ? (1 x 1) (1)

4.5.3 State the physical (natural) factor that could have attracted the new investor to the Saldanha Bay IDZ. (1 x 1) (1)

4.5.4 Discuss how the new investment project in the Saldanha Bay IDZ would have a positive impact on transport infrastructure in the zone. (2 x 2) (4)

4.5.5 How will investments in the Saldanha Bay IDZ have an impact on the people seeking employment in this zone? (2 x 2) (4)

4.5.6 Suggest what social responsibility initiatives a new investment company should have towards the local community. (2 x 2) (4)

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4.6 Refer to FIGURE 4.6 based on the informal sector.

4.6.1 What example of informal trade, according to the extract, is shown in FIGURE 4.6? (1 x 1) (1)

4.6.2 How many people in South Africa are involved in the informal retail sector? (1 x 1) (1)

4.6.3 Quote evidence from the extract to suggest that the informal sector is a much easier option to gain employment. (1 x 1) (1)

4.6.4 According to the extract, why are so many women employed in the informal sector? (2 x 2) (4)

4.6.5 In a paragraph of approximately EIGHT lines, discuss the positive impact that the informal sector has on the economy of South Africa. (4 x 2) (8)

[75]

TOTAL: 225

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GRADE 12

GEOGRAPHY P1

NOVEMBER 2020(2)

ANNEXURE

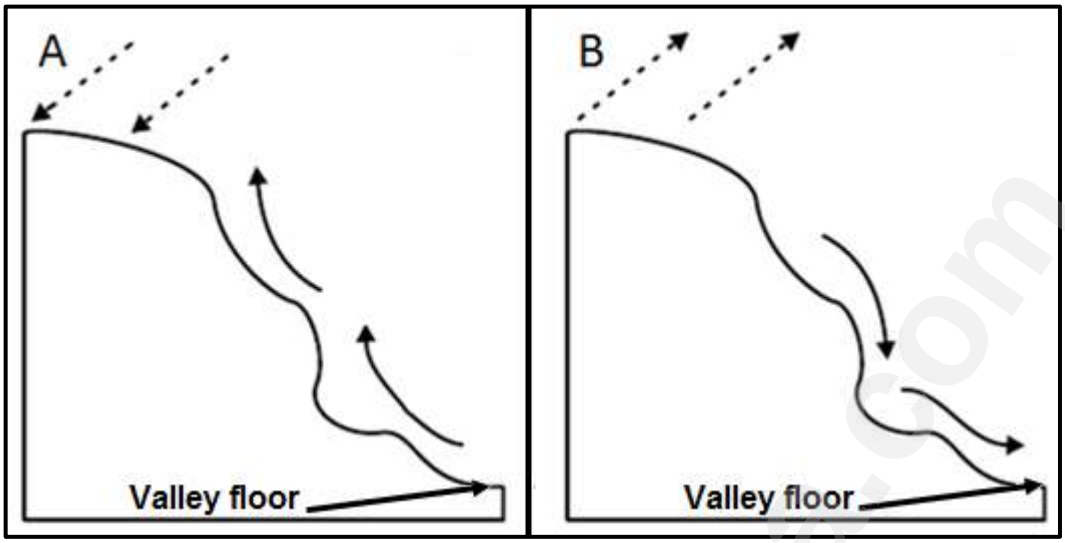
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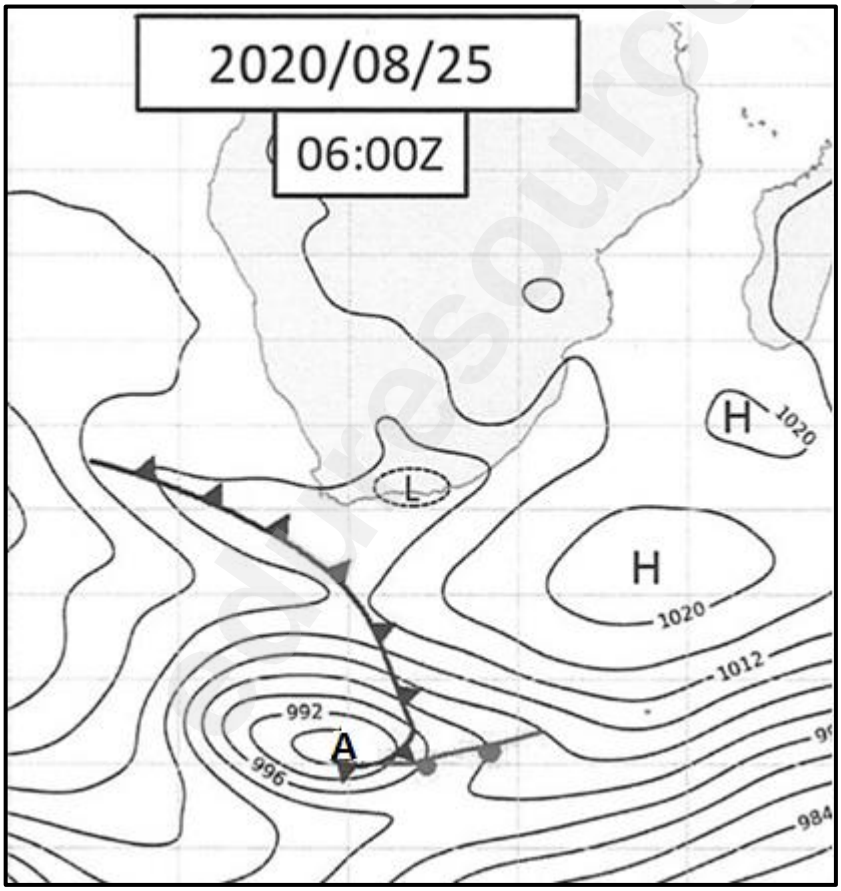
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FIGURE 1.1: VALLEY CLIMATES



[Examiner's own sketch]

FIGURE 1.3: MID-LATITUDE CYCLONE



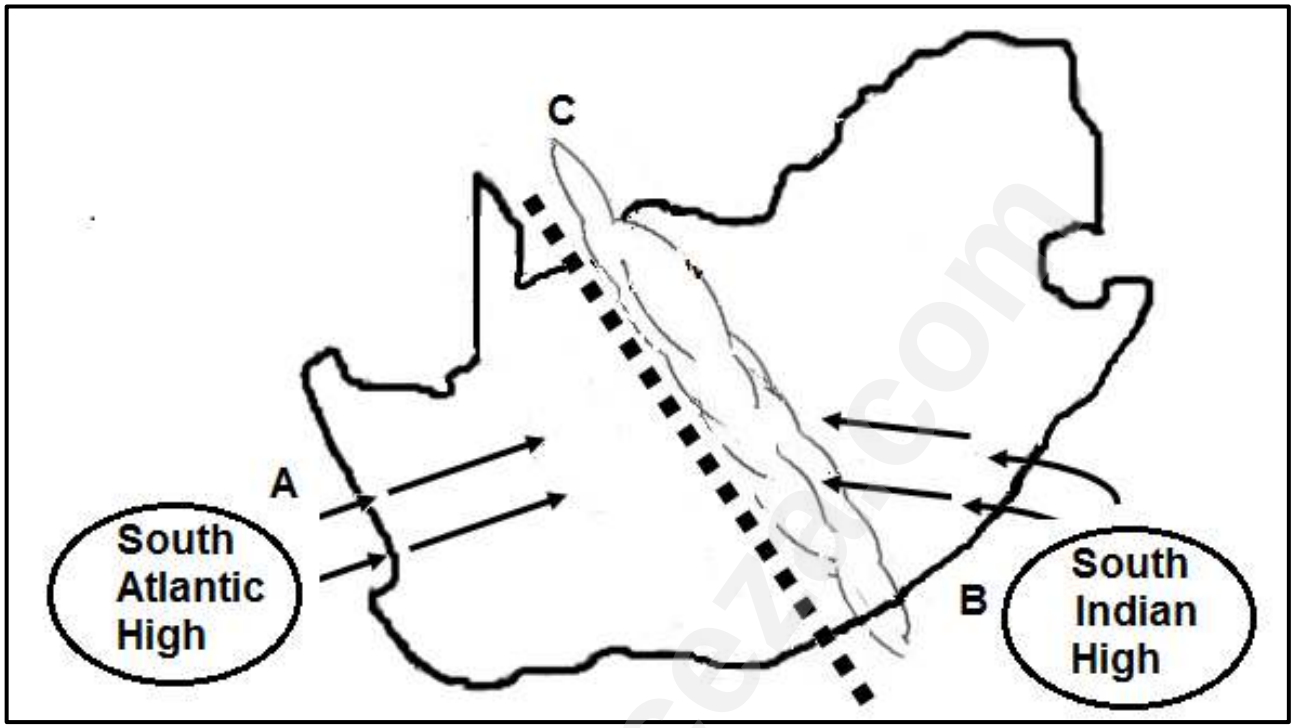
[Source: South African Weather Bureau]

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FIGURE 1.4: LINE THUNDERSTORM



[Source: Examiner's sketch]

FIGURE 1.5: DELTAS

DELTAS ARE SINKING

The world's river deltas take up less than 0,5% of the Earth's land area, but they are home to hundreds of millions of people. With fertile soils and easy access to the coast, deltas are important areas for food production. They also have unique ecosystems. Now many of the world's deltas are facing a crisis. Sea levels are rising as a result of climate change, while deltas are sinking.

As sediments in deltas compact under their own weight, deltas naturally sink. If left undisturbed, new river sediment can accumulate and help to maintain the delta surface above sea level.

But deltas are now subsiding much faster than they would do naturally. That's due to groundwater being pumped from aquifers (permeable rock) underneath them and used to irrigate crops and provide water for rapidly growing cities. Under these conditions, only the continued deposition of sediment on deltas can keep them from 'drowning'.

Difficult decisions need to be made about development priorities between countries upstream of deltas and those including the deltas themselves. There will be trade-offs to be made between hydropower, agricultural practices and delta sustainability.

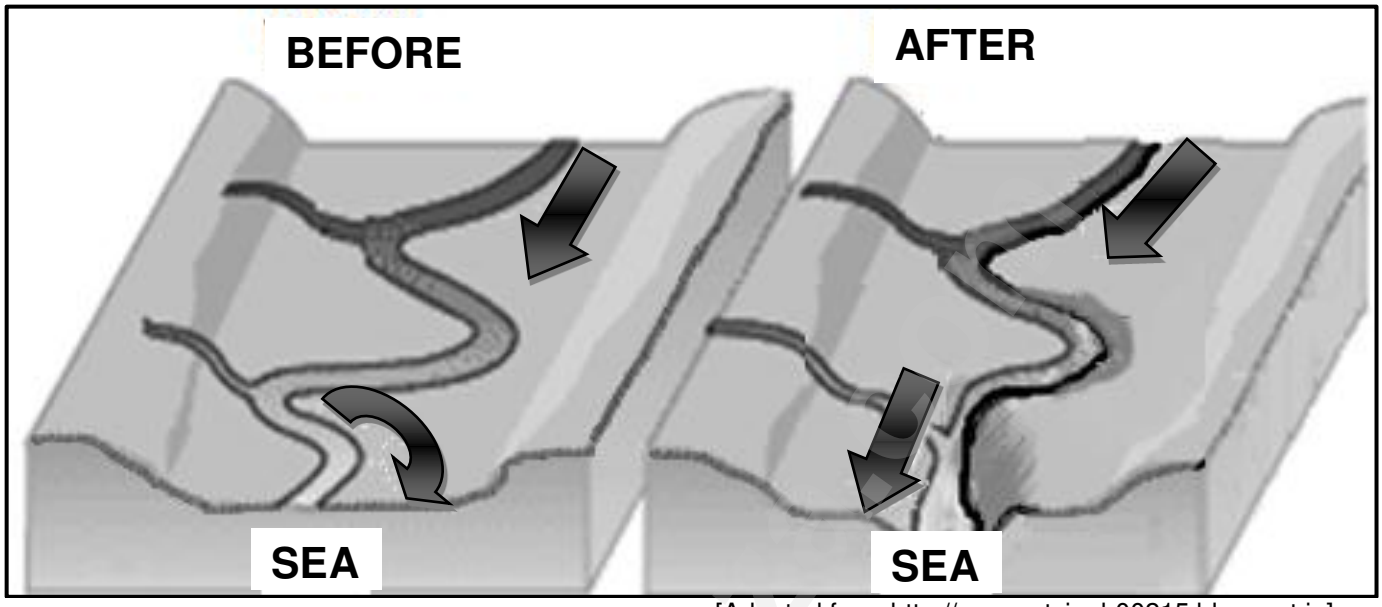
[Source: https://www.asiatimes.com/2019/11/article/river-delta-changes-threaten-hundreds-of-millions/]

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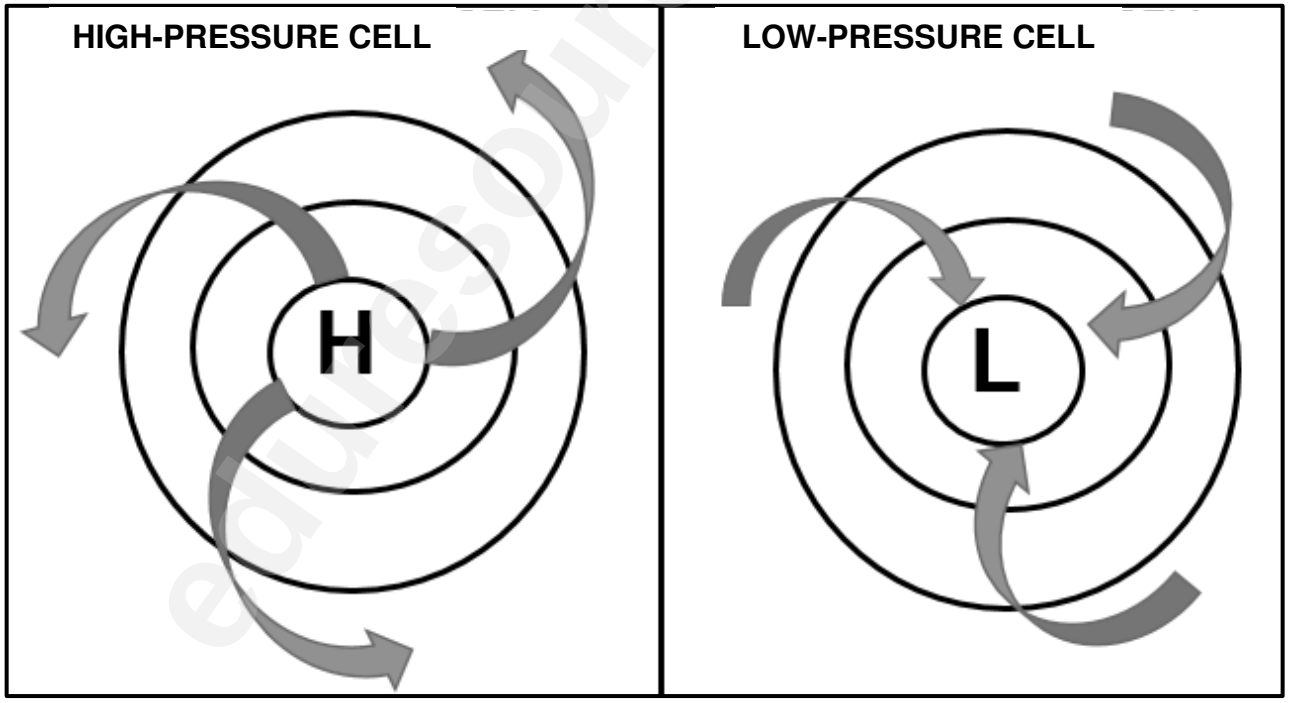
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FIGURE 1.6: RIVER REJUVENATION



[Adapted from http://navneetsingh00215.blogspot.in]

FIGURE 2.1: HIGH- AND LOW-PRESSURE CELLS IN THE SOUTHERN HEMISPHERE



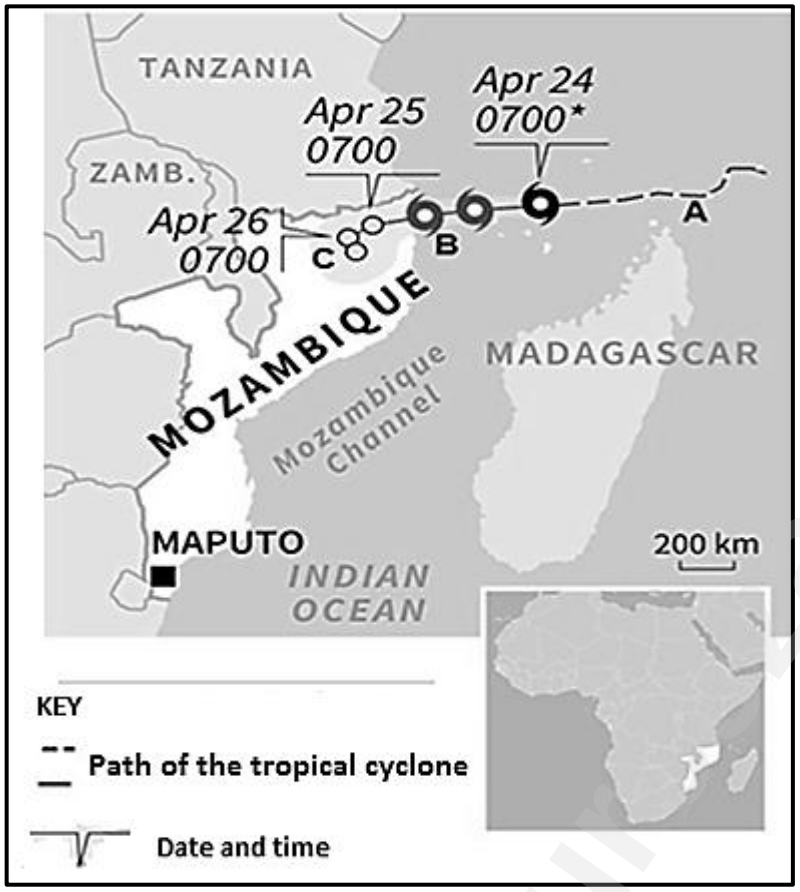
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FIGURE 2.3: TROPICAL CYCLONE



[Source: Meteo France]

FIGURE 2.4: URBAN HEAT ISLANDS

CITY DWELLERS ARE BEARING THE BRUNT OF EXTREME TEMPERATURES

Thanks to a phenomenon that makes urban areas hotter than their surroundings, cities such as Pretoria are as much as 6 °C hotter than they could be.

The heat comes from decades of poor planning. Since the 1950s, the global focus of city infrastructure planning has been on cars and on getting as many people as possible into tall buildings (skyscrapers).

In South Africa's six big cities, this means tarred roads crisscrossing what used to be fields, big cement slabs providing parking for the cars, high-rise apartments and office blocks overcrowding their occupants. This both creates and traps heat, which leads to an urban heat island. This effect is worse at night, with cities storing heat.

The World Health Organisation (WHO) says urban heat islands, which both raise temperatures and trap pollutants, will have to disappear in this century if future generations are to live healthy lives in cities. A possible way of addressing the issue of heat islands is introducing 'green' strategies. Green strategies are sustainable and do not harm the environment.

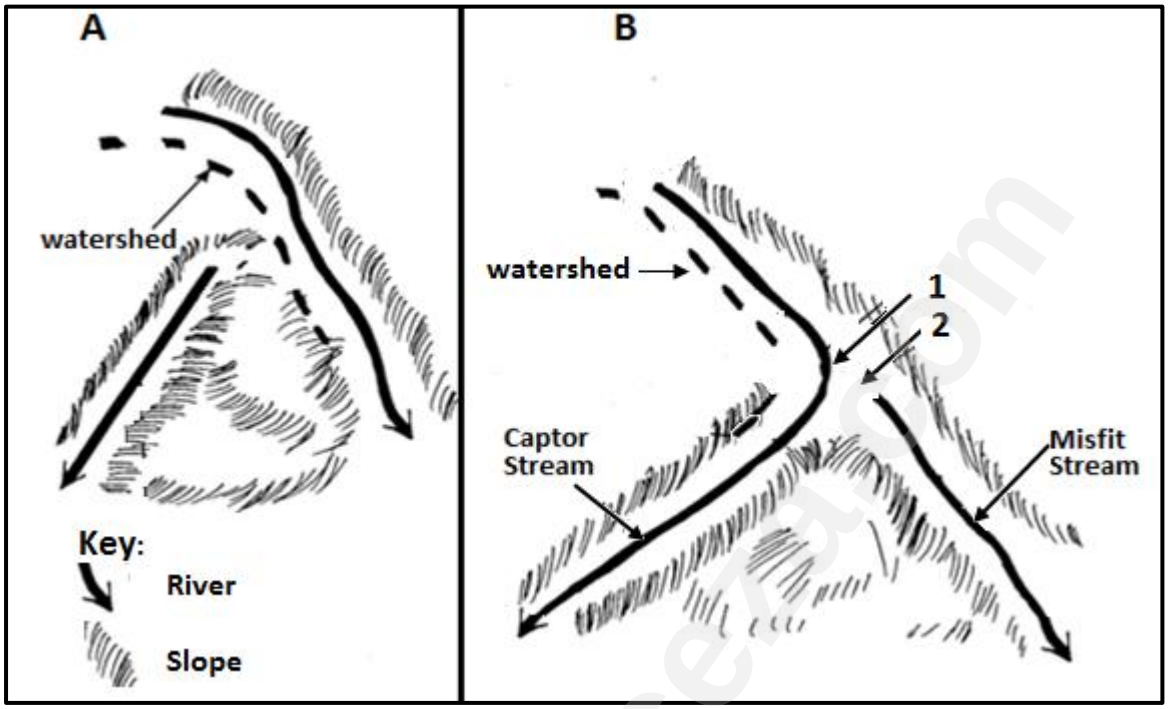
[Adapted from https://mg.co.za/article/2016-01-16-beyond-the-inferno-how-sa-cities-must-green]

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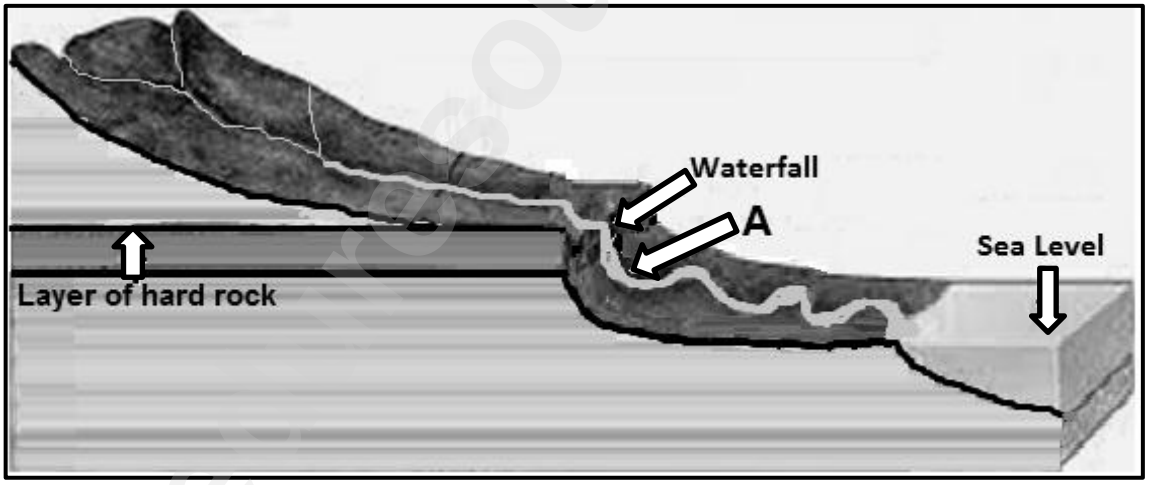
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FIGURE 2.5: RIVER CAPTURE (STREAM PIRACY)



[Adapted from https://revision.co.ke/marking-schemes/kcse-cluster-tests-3/geography]

FIGURE 2.6: RIVER PROFILE



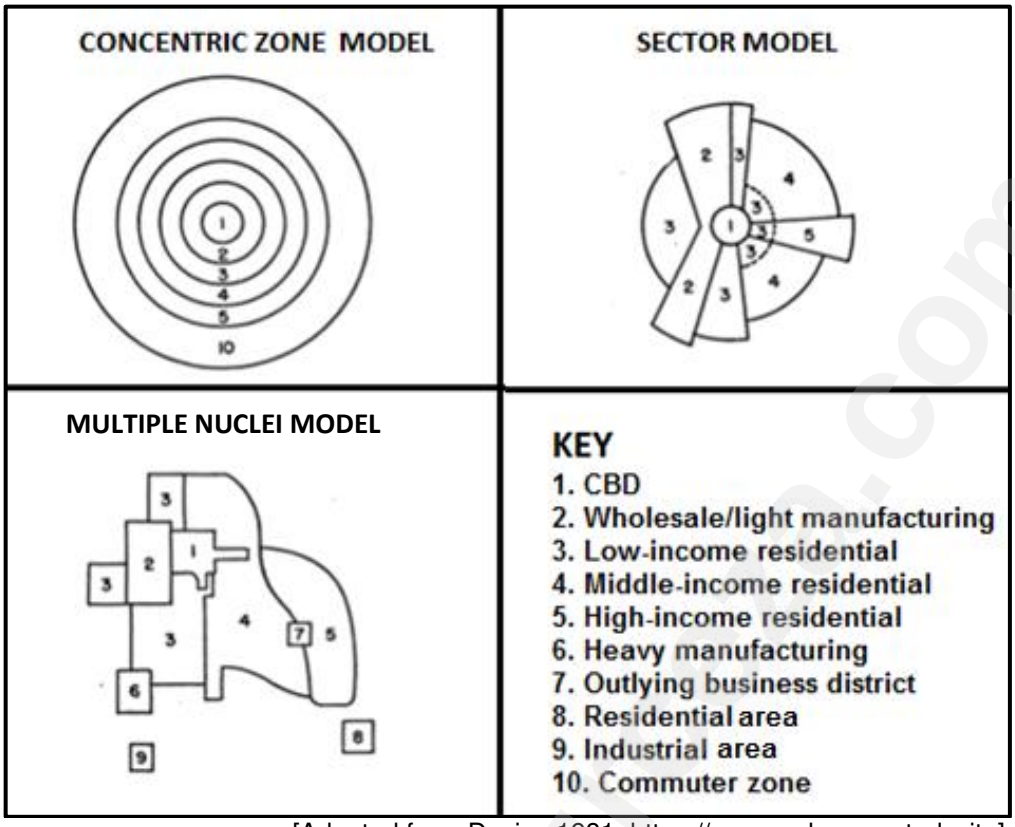
[Adapted from https://www.google.com/search?q=photograph+of+an+ungraded+river+profile]

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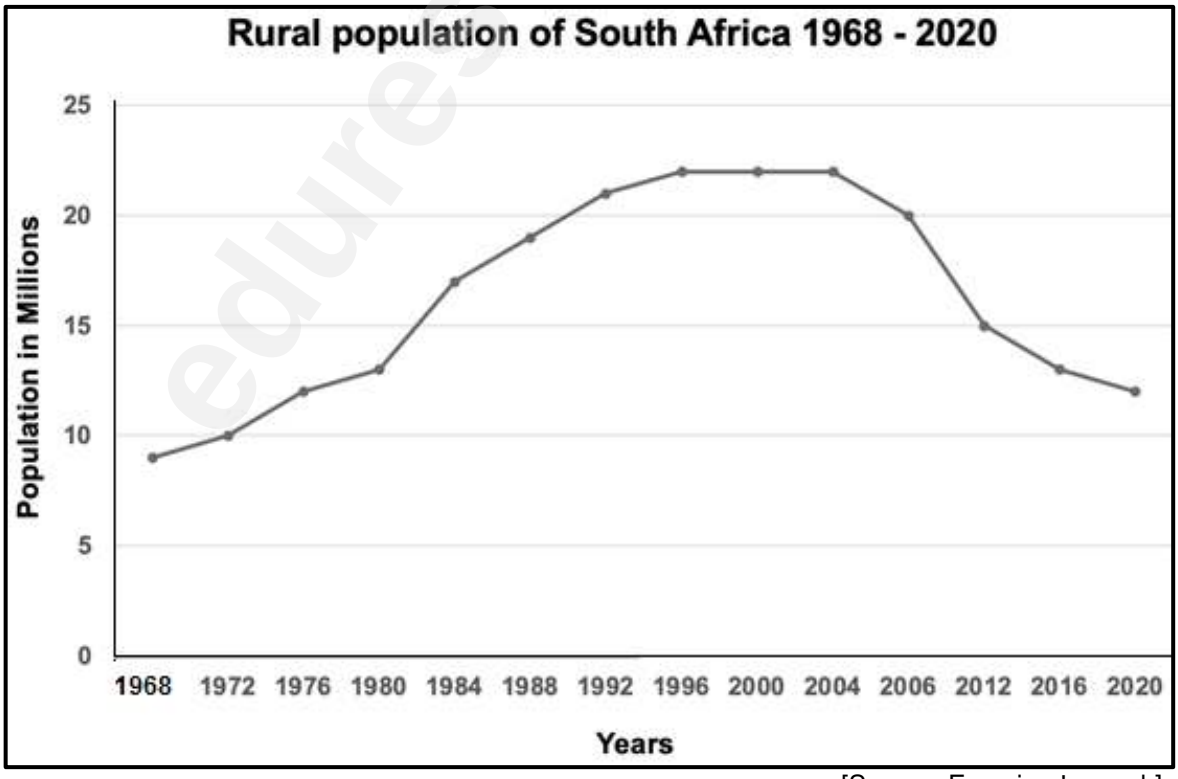
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FIGURE 3.1: MODELS OF URBAN STRUCTURE



[Adapted from Davies 1981, https://geographycasestudysite]

FIGURE 3.3: RURAL DEPOPULATION



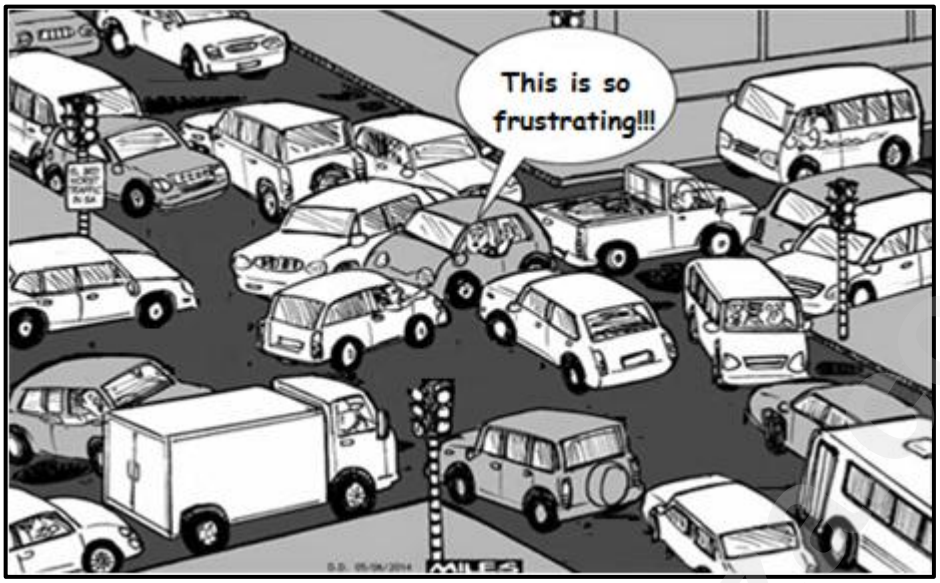
[Source: Examiner's graph]

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FIGURE 3.4: URBAN ISSUE RELATED TO RAPID URBANISATION



[Adapted from http://cartoonsbymiles.blogspot.com/2014/06/mixed-bag.html]

FIGURE 3.5: CATTLE FARMING IN SOUTH AFRICA

TOUGH TIMES NEED TOUGHER CATTLE



With the ongoing drought and foot-and-mouth disease outbreaks in South Africa, choosing the right cattle breed for production and breeding has never been more crucial. With its adaptability and high functional efficiency, Bonsmara cattle has proved itself the ideal breed to cope with, and thrive in, these challenging conditions.

The Bonsmara, bred for Africa's harshest conditions, has shown that it can adapt to the changing climate, reduced rainfall and warmer temperatures. The Bonsmara cow is capable of walking long distances to find grazing. The breed also adapts in both extensive and intensive agricultural environments.

[Source: https://www.farmersweekly.co.za/animals/cattle/tough-times-need-tougher-cattle/]

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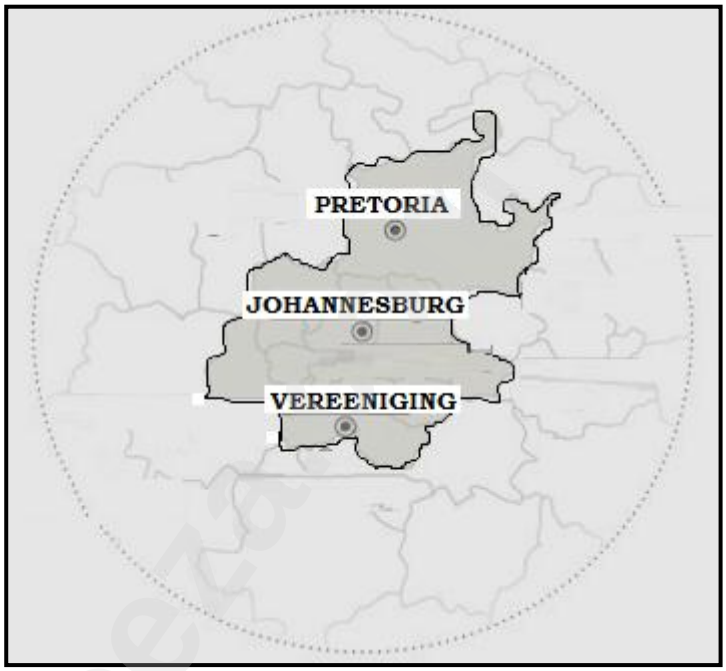
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FIGURE 3.6: PWV (GAUTENG) INDUSTRIAL REGION

The PWV (Gauteng) Industrial Region is an integrated cluster of cities, towns and urban nodes that together make up the economic heartland of South Africa.

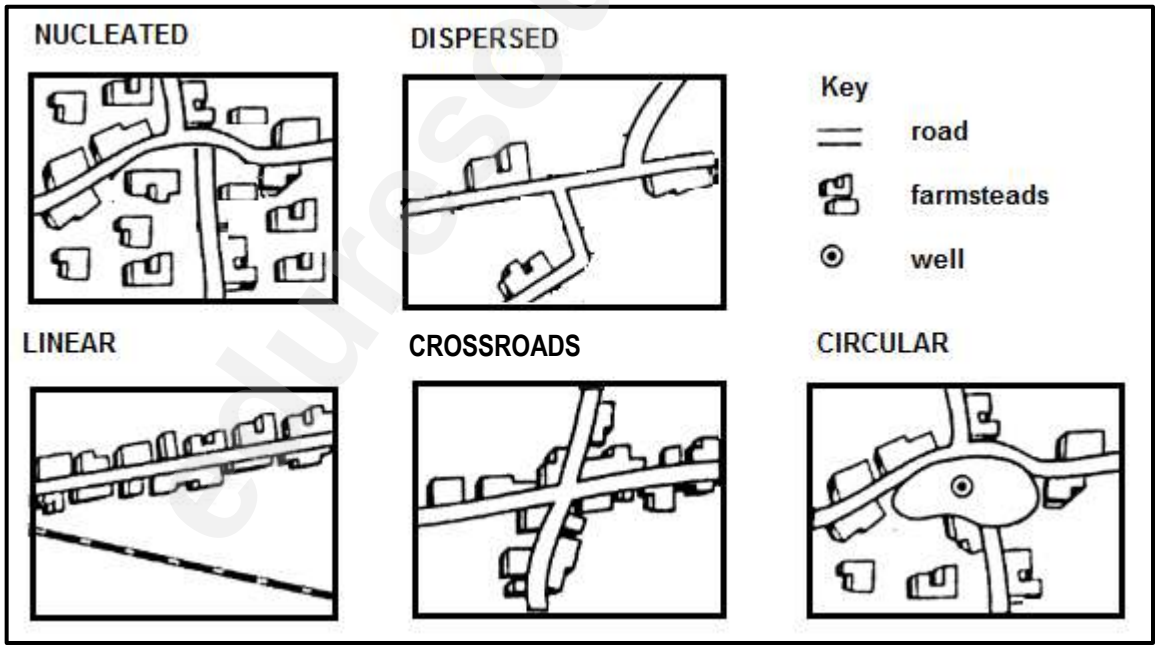
This region is the country's centre of trade within Southern Africa and beyond. PWV (Gauteng) produces more than 33,8% of the national GDP in current prices. PWV (Gauteng) is estimated to contribute about 45% of South Africa's total economic output.

Despite its importance, the PWV (Gauteng) region faces many challenges, such as water shortages and high levels of unemployment.



[Adapted from https://www.gcro.ac.za/about/the-gauteng-city-region/]

FIGURE 4.1: RURAL SETTLEMENT PATTERNS AND SHAPES



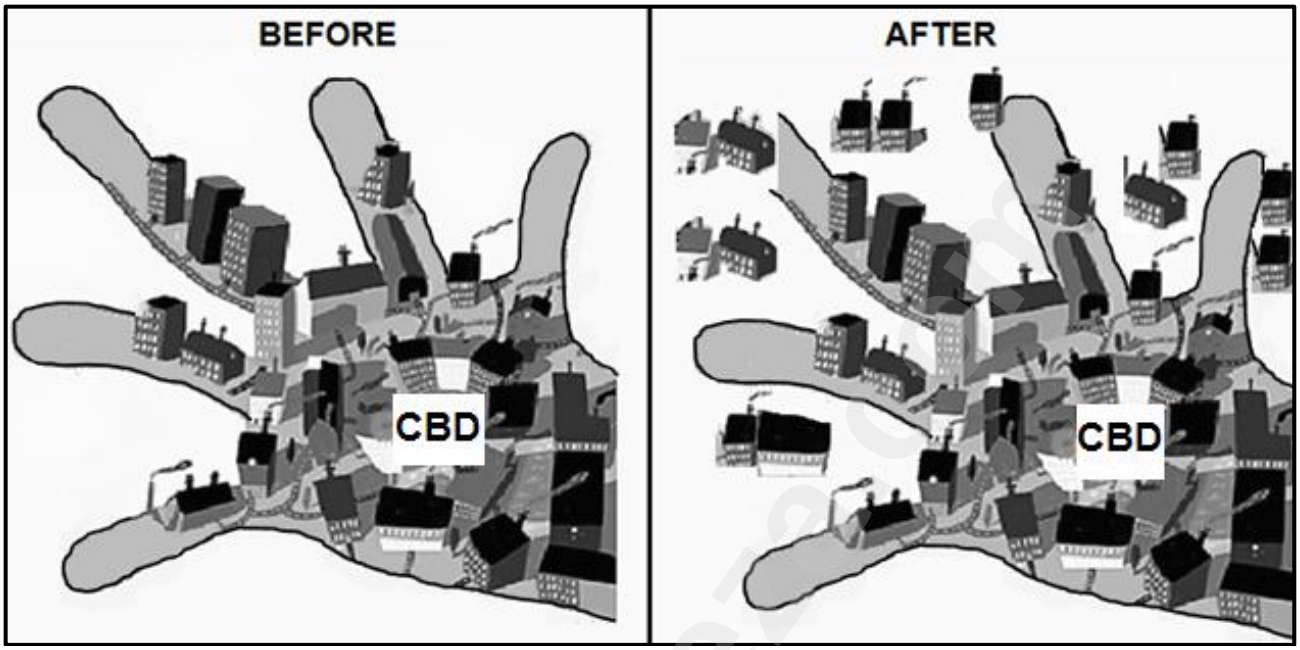
[Adapted from https://www.studyadda.com/current-affairs/human-settlements]

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FIGURE 4.3: URBAN SPRAWL



[Adapted from https://theurbanweb.wordpress.com/finger-plan-in-copenhagen-urban-sprawl]

FIGURE 4.4: URBAN ENVIRONMENTAL JUSTICE ISSUE



[Adapted from https://pulitzercenter.org/reporting/south-africas-future-without-coal]

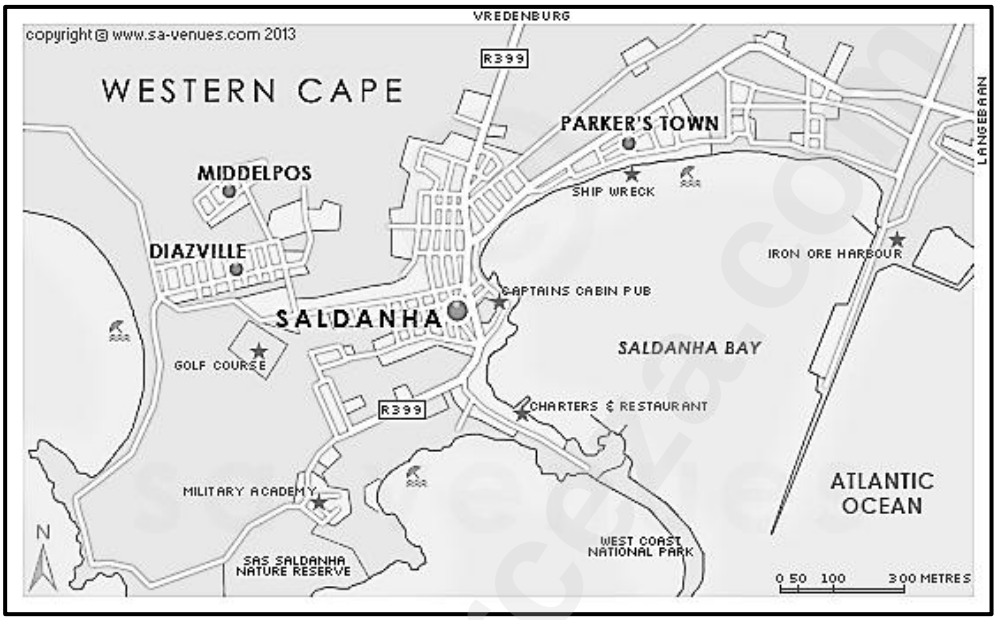
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FIGURE 4.5: STRATEGIES FOR INDUSTRIAL DEVELOPMENT: THE SALDANHA BAY INDUSTRIAL DEVELOPMENT ZONE (SBIDZ)

NEW INVESTMENT IN THE SALDANHA BAY INDUSTRIAL DEVELOPMENT ZONE(SBIDZ)



The West Coast Corrosion Protection (WCCP) will nearly double their workforce as they position themselves to grow their already established business with the support of the SBIDZ fund.

As a small, local company in the corrosion protection and support services industry, the WCCP services a range of marine vessels in a number of ports across South Africa. Their new facility will provide a necessary base to expand their value and service offering to the maritime industry. It will open doors to new markets and customers.

The SBIDZ has, to date, signed 11 lease agreements with an investment value of over R3 billion. The development of the SBIDZ is key to unlocking the industrial potential of the West Coast, and Saldanha in particular.

Skills programmes initiated in the SBIDZ that focus on enterprise and contractor development have created a total of 2 199 individual training opportunities with 88% of participants having already graduated. Together with this, the local community benefits from social responsibility initiatives.

[Source: www.sbidz.co.za, https://www.sa-venues.com/maps/westerncape/saldanha.php]

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FIGURE 4.6: INFORMAL SECTOR



[Source: iol.co.za]

Informal trade is dominated by women in most countries.

South Africa's informal retail sector is made up of around 750 000 informal micro-retailers (mostly women) operating from home ('spaza' shops) and street vendors. They generate a total revenue of R31,8 billion per year.

Providing support to the informal sector could help South Africa relieve some of its unemployment pressures. There are few barriers to entering the informal sector. It provides in many of the local community's basic needs.

[Adapted from Citizenmatters-post-covid-16671]c

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SENIOR CERTIFICATE/ NATIONAL SENIOR CERTIFICATE

GRADE 12

GEOGRAPHY P1

NOVEMBER 2020(2)

MARKING GUIDELINES

MARKS: 225

These marking guidelines consist of 24 pages.

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Marking Guidelines

The following marking guidelines have been developed to standardise marking in all provinces.

Marking

- ALL selected questions MUST be marked, irrespective of whether it is correct or incorrect
- Candidates are expected to make a choice of THREE questions to answer. If all questions are answered, ONLY the first three questions are marked.
- A clear, neat tick must be used: ✓
  - If ONE mark is allocated, ONE tick must be used: ✓
  - If TWO marks are allocated, TWO ticks must be used: ✓✓
  - The tick must be placed at the FACT that a mark is being allocated for
  - Ticks must be kept SMALL, as various layers of moderation may take place
- Incorrect answers must be marked with a clear, neat cross: ×
  - Use MORE than one cross across a paragraph/discussion style questions to indicate that all facts have been considered
  - Do NOT draw a line through an incorrect answer
  - Do NOT underline the incorrect facts
- Where the maximum marks have been allocated in the first few sentences of a paragraph, place an **M** over the remainder of the text to indicate the maximum marks have been achieved

For the following action words, ONE word answers are acceptable: **give**, **list**, **name**, **state**, **identify**
For the following action words, a FULL sentence must be written: **describe**, **explain**, **evaluate**, **analyse**, **suggest**, **differentiate**, **distinguish**, **define**, **discuss**, **why**, **how**
The following action words need to be read within its context to determine whether a ONE word answer or FULL sentence is required: **provide**, **what**, **tabulate**

Totalling and transferring of marks

- Each sub-question must be totalled
  - Each question has six sub-sections, therefore six sub-totals per question required
  - Sub-section totals to be written in right hand margin at the end of the sub-section and underlined
  - Sub-total must be written legibly
  - Leave room to write in moderated marks on different levels
- Total sub-totals and transfer total to top left hand margin next to question number
- Transfer total to cover of answer book

Moderation

Marking on each level of moderation is done in the same way as the initial marking. All guidelines for marking must be adhered to.

If a mark for a sub-question is changed after moderation, the moderator must strike through the marker's mark and write down the new mark. ~~12~~ 16

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The total for the question must be re-calculated, and similarly be struck off and the new total to be written down.

6 3

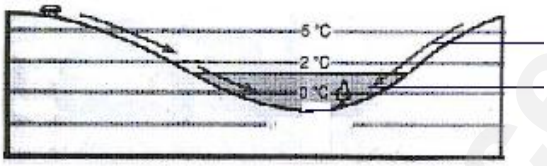
QUESTION 1

3

1.1.1 A (South Atlantic High) (1) ✓
1.1.2 B (Kalahari High) (1) ✓
1.1.3 B (South Indian) (1) ✗ **2**

1.2.1 Melting snow ✓
1.2.2 Mouth ✗
1.2.3 Third order ✓ **2**

1.3.1 Katabatic ✗
1.3.2 **1** occurs during the day while **2** occurs at night ✓✓
1.3.3 Cold air rolls down into the valley and forms an inversion ✓✓



Air flows downslope ✓✓ **6**

1.4.1 Shape of front concave
Steep gradient of front ✓✗
1.4.2 Warm air undercuts the cold air ✗
1.4.3 Air behind the cold front is colder than the air in front. Cold air moves faster than warm air ahead of it. Cold front catches up with the warm front. ✓✓ ✓✓ ✓✓ **7**

1.5.1 (a) A river that only flows all year round ✗

(b) The river channel is wide ✗

(c) Regularity of rainfall and the soil type over which the streams flow. ✓✓ ✓✓ **4**

1.6.1 Gauteng and the Eastern Cape ✓ ✗
1.6.2 Mining waste dumped in the river and industries pollute the water. ✓ ✓
1.6.3 The cost of food production will increase at it is costly to buy purified water. Farmers will have to buy more chemicals to purify water. Chemicals cost a lot and this will increase production costs. It will be costly to purify water for use in electricity generation. These costs will be included in electricity prices. Costs will increase the price of electricity during production. There will be less clean water to generate hydro- electricity. ✓✓ ✓✓ ✓✓ ✓✓ M **11**

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SECTION A: CLIMATE, WEATHER AND GEOMORPHOLOGY

QUESTION 1

1.1 1.1.1 A (1)

1.1.2 B (1)

1.1.3 A (1)

1.1.4 A (1)

1.1.5 B (1)

1.1.6 B (1)

1.1.7 B (1) (7 x 1) (7)

1.2 1.2.1 I (1)

1.2.2 E (1)

1.2.3 D (1)

1.2.4 G (1)

1.2.5 C (1)

1.2.6 A (1)

1.2.7 B (1)

1.2.8 H (1) (8 x 1) (8)

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1.3 1.3.1 Cold and warm fronts visible (Cold/Warm front visible) (1)
Presence of an occluded front (1)
Low pressure (less than 1000hPa) (1)
Presence of warm/cold sectors (1)
Mid-latitude cyclone is moving from west to east (as indicated by the symbol of the cold front) (1)
It is where a mid-latitude cyclone should be located in winter (date) (1)
[ANY ONE] (1 x 1) (1)

1.3.2 Convergence (meeting) of cold (dry) polar air and warm (moist) sub-tropical air masses (2)
Frictional drag (disturbances) occurs at the polar front (2)
[ANY ONE] (1 x 2) (2)

1.3.3 It is steered/driven by the westerly winds (2)
Located in the westerly wind belt (2)
Driven by jet streams (2)
[ANY ONE] (1 x 2) (2)

1.3.4 Steep pressure gradient (isobars are close together) (2)
Rapid upliftment of air mass (2)
Presence of cumulonimbus clouds (2)
Backing of wind (2)
[ANY ONE] (1 x 2) (2)

1.3.5 Cold front moves faster than the warm front (2)
Warm air sector narrows as the cold front undercuts it (2)
The cold front catches up with the warm front (at the apex) (2)
[ANY TWO] (2 x 2) (4)

1.3.6 Increased rainfall fills up dams/rivers/jo-jo tanks which impacts positively on the agricultural sectors (2)
Enables irrigation of winter crops which provides enough food for the local market (2)
More agricultural products (accept examples) available for manufacturing industries/export (2)
Low temperatures ideal for crops that thrive in cold conditions (2)
Cold conditions can kill pests that eat the crops (2)
More infiltration is causing a higher water table therefore ground water increases (2)
Supplies seasonal agricultural jobs (2)
Cleans polluted rivers as it is washed out pollution in river (2)
Improves pasturage for livestock grazing (2)
Soil fertility increases due to alluvium from flooding (2)
Contributes to food production/food security (2)
Availability of water for livestock (2)
[ANY TWO] (2 x 2) (4)

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1.4 1.4.1 B (1)
Accept Indian Ocean (1)
[ANY ONE] (1 x 1) (1)

1.4.2 Divergence of air from South Atlantic High to the trough of low pressure in the interior (2)
Anticlockwise rotation from South Atlantic High feeds in the cold air (2)
Cold air from above the Atlantic Ocean/Benguela current (2)
Air is dry due to limited evaporation (2)
[ANY ONE] (1 x 2) (2)

1.4.3 Cool dry air from the south west meets warm moist air from the north east (2)
Warm air is forced to rise rapidly over colder air and the rising air cools and condenses (cumulonimbus clouds form and thunderstorms occur) (2)
There is rapid rising of warm air along the east of the moisture front (2)
Moisture front covers an extensive linear area (NW to SE) (2)
[ANY TWO] (2 x 2) (4)

1.4.4 Torrential (Heavy) rainfall can cause extensive flooding (2)
Lightning can cause extensive fires (accept examples) (2)
Lightning can cause the death of people and livestock (2)
Hail can cause damage to property (2)
Gale force winds can damage property/infrastructure/crops/ uproot trees (2)
Flooding can lead to loss of human life/disrupt activities (2)
Crops will be destroyed by heavy rainfall (2)
Rainfall can destroy property and infrastructure (accept examples) (2)
There will be widespread soil erosion/loss of fertile soil due to heavy rainfall (accept examples) (2)
Poor visibility due to the heavy rainfall can cause accidents (2)
Ecosystems can be destroyed by flooding (2)
Loss of biodiversity due to destructive nature of the rain (2)
Economic destruction (accept explained examples) (2)
Social destruction (accept explained examples) (2)
Interruption of traffic/lack of visibility due to torrential rain (2)
[ANY FOUR] (4 x 2) (8)

1.5 1.5.1 At the point where the river enters the sea/river mouth/lakes (1) (1 x 1)

1.5.2 They are home to hundreds of millions of people (1) (1 x 1) (1)

1.5.3 Groundwater being pumped from aquifers (permeable rocks) (1) (1 x 1) (1)

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1.5.4 Deltas are a source of water (2)
Deltas sustain all ecosystems (2)
Deltas ensures biodiversity (2)
Deltas provide fertile farming land for agricultural activities/food production (2)
Tourism (leisure activities) opportunities are created by deltas and contributes to the economy (2)
Home to many people/settlement (2)
Can be part of water transport system (2)
Deltas are a source of protein (fish) (2)
Provides water for fishing and aquaculture (2)
[Accept candidates might write in the negative]
[ANY TWO] (2 x 2) (4)

1.5.5 Limit the number of people living on deltas to reduce the amount of water pollution (2)
Reduce infrastructural development on deltas (2)
Practice ecotourism to preserve deltas (2)
Regulate mariculture in and around deltas (2)
Reduce agricultural activity to protect the fertility of the soil (2)
Reduce irrigation to ensure high water levels in the delta (2)
Limit/regulate the extraction of groundwater beneath deltas (2)
Declare as conservation areas (2)
Educating the population residing in area about the significance of deltas (2)
Buffer (fencing off) delta areas (2)
Impose fines on those who pollute delta areas (2)
Sustainable farming methods (accept examples) (2)
Monitor/management upstream river development so rivers are not starved of sediments (2)
Build fewer dams upstream to allow more sediment to be carried in rivers (2)
Legislation to protect deltas (2)
Restrict no of hydroelectric power stations/dams/reservoirs which alter delta ecosystems (2)
Maintain vegetation and plantations in and around the delta (2)
Regular monitoring and testing of the water quality (River health programmes) (2)
[ANY FOUR] (4 x 2) (8)

1.6 1.6.1 When a river erodes (downwards) again because it is re-energised (1)
[CONCEPT] (1 x 1) (1)

1.6.2 Lower course/Old stage (1) (1 x 1) (1)

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1.6.3 Wide floodplain (almost flat) (1)
Wide river valley (1)
Meanders are visible (1)
River enters the sea/river mouth (1)
Presence of terraces (1)
Evidence of lateral erosion (1)
At the sea/ocean (label) (1)
Entrenched meanders (1)
Shading shows a deepening of the river channel (1)
[ANY ONE] (1 x 1) (1)

1.6.4 Gradient is steeper (river flows down a slope) (2)
Turbulent flow (fast flowing river has more energy) after rejuvenation (2)
Increase in volume of water (2)
Results in a higher velocity after rejuvenation (2)
[ANY TWO] (2 x 2) (4)

1.6.5 (a) River channel has become deeper (2)
River channel has become wider (2)
River channel has become straighter (fewer meanders/curves/bends) (2)
River channel has steeper sides (2)
[ANY ONE] (1 x 2) (2)

(b) Meander loop has moved further downstream (2)
Meander downstream has disappeared (2)
Meander neck has become narrower (length and width of meander decreased) (2)
Meander is entrenched/incised/deepens (2)
[ANY ONE] (1 x 2) (2)

1.6.6 Increases the amount of silt in the dam (2)
Increased silt may damage the dam wall and cause it to collapse (2)
Silting negatively impacts on the biodiversity of dams (2)
Water holding capacity of dam reduced (2)
Less effective in controlling flood waters (2)
The increased volume and velocity of water may break the dam walls (2)
Increased in the cost of maintenance (2)
Water quality decreases when sediments are deposited (2)
[ANY TWO] (2 x 2) (4)
[75]

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QUESTION 2

2.1 2.1.1 Low pressure cell (1)

2.1.2 High pressure cell (1)

2.1.3 Low pressure cell (1)

2.1.4 Low pressure cell (1)

2.1.5 High pressure cell (1)

2.1.6 Low pressure cell (1)

2.1.7 High pressure cell (1)

2.1.8 High pressure cel (1) (8 x 1) (8)

2.2 2.2.1 D (1)

2.2.2 F (1)

2.2.3 G (1)

2.2.4 E (1)

2.2.5 H (1)

2.2.6 B (1)

2.2.7 C (1) (7 x 1) (7)

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2.3 2.3.1 Air circulation around cyclone is clockwise (1)
Date (April is late summer in the southern hemisphere) (1)
Mozambique/Mozambique channel/Madagascar/Maputo/Tanzania/Zambia is in the southern hemisphere (1)
It develops over the southern Indian Ocean (1)
[ANY ONE] (1 x 1) (1)

2.3.2 The warm air temperatures above the sea/warm ocean (+26.5°C) (Mozambique/Agulhas) current generates more evaporation (2)
Mozambique channel located close to the equator (2)
Mozambique channel is in the Indian ocean which is warmer (2)
[ANY ONE] (1 x 2) (2)

2.3.3 Increased moisture which will lead to rapid condensation (2)
Latent heat being released from rapid condensation would provide the energy for the system to move rapidly from **A** to **B** (2)
Wind intensity will change from gale force to hurricane strength because of the wind shear (change in wind speed and direction) (2)
Developed from a tropical depression into a tropical cyclone (2)
Eye has formed/intensified because of the decrease in air pressure (2)
Area covered by the eye increased in size (2)
Rainstorms increase as the eye wall and leading/forward quadrant approaches (2)
A is only a storm without an eye, **B** has an eye (2)
Pressure continues to drop as it moves towards **B** (intensified) (2)
[ANY TWO] (2 x 2) (4)

2.3.4 Source of moisture is reduced as it moves over the land (2)
Friction with the land surface would decrease the wind speed (2)
Moves away from warmer waters/cold dry air enters the system (2)
[ANY TWO] (2 x 2) (4)

2.3.5 The coastline of Mozambique will be subjected to wind and water erosion which will reshape the coastline (2)
More coastal rocks will become exposed limiting human activities (2)
Strong winds and torrential rain will destroy sand dunes which are essential for ecosystems and biodiversity (destroys natural coastal vegetation) (2)
Bay areas along the coastline would become shallower as a result of excess silting and restricts development (2)
Blockage of waterways by sand deposits decreases access to coastlines (2)
The coastline will be steeper and become inaccessible to tourists (2)
[ANY TWO] (2 x 2) (4)

2.4 2.4.1 An area of high temperature over the city that decreases towards the rural area/phenomenon that makes urban areas hotter than their surroundings (1)
[CONCEPT] (1 x 1) (1)

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2.4.2 'the global focus of city infrastructure planning has been on cars' (1)
'getting as many people as possible into tall buildings' (1)
'Heat comes from decades of poor planning' (1)
'office blocks overcrowding their occupants' (1)
'tarred roads criss-crossing' (1)
'big cement slabs' (1)
[ANY TWO] (2 x 1) (2)

2.4.3 Subsiding air at night pushes the warm air closer to buildings in the city which results in more heat being concentrated (in a smaller area) (2)
Weaker convection currents at night concentrates the heat island effect (2)
Subsiding air traps the heat between buildings (2)
[ANY TWO] (2 x 2) (4)

2.4.4 Plant more trees to absorb more carbon dioxide (2)
Establish roof gardens/vertical gardens on high rise buildings (2)
Create parks/greenbelts in the urban area (2)
Reduce carbon emissions in urban areas by making use of solar energy (2)
Reduce carbon emissions in urban areas by making use of wind energy (2)
Replace concrete/tar surfaces with cobble stones which allow infiltration of water and cooling through evaporation (2)
Promote urban farming that will result in more evapotranspiration and cooling of temperatures (2)
Use of public transport/cycling to reduce the number of vehicles on the roads (2)
Reduce the number or vehicles on the road (accept examples) (2)
Use of reflective paint on buildings and roofs (2)
Reducing our carbon footprint through recycling and re-using of products (2)
Modernisation of buildings with greener materials (accept examples) (2)
Implementing energy saving strategies (accept examples) (2)
Encourage the use of hybrid cars which produce no pollution (2)
Use of catalytic converters in motor vehicles (2)
Creation of water features (accept examples) (2)
Green policy to be included in all legislation (2)
Awareness/education campaigns on green policies (2)
Incentives for going green/eco-friendly products (accept examples)
[ANY FOUR – ACCEPT QUALIFIED EXAMPLES] (4 x 2) (8)

2.5 2.5.1 Process in which one river captures/robs the headwaters of another river (1)
[CONCEPT] (1 x 1) (1)

2.5.2 1 – elbow of capture (1)
2 – wind/dry gap (1) (2 x 1) (2)

2.5.3 Flowing over a steeper gradient (accept examples) (1)
Flowing over softer rocks (1)
Increase in the volume of water (accept examples) (1)
Headward erosion (1)
[ANY TWO] (2 x 1) (2)

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2.5.4 Headwaters of the misfit stream was cut off by the captor stream through the process of headward erosion (2)
It continued to flow (after the wind/dry gap) with a reduced supply of water (2)
(2 x 2) (4)

2.5.5 Volume of water in the river will increase (2)
Velocity (speed) of the river increases (2)
Increases the erosive power of the river (2)
Ability to transport a bigger load (2)
Rate of deposition is lowered (2)
Possibility of flooding increases (2)
River discharge is turbulent (2)
[ANY THREE] (3 x 2) (6)

2.6 2.6.1 Ungraded (1) (1 x 1) (1)

2.6.2 It has an uneven profile (2)
Presence of temporary base level of erosion/knickpoint/waterfall (plunge pool) (2)
Presence of resistant (hard) rock (2)
Multi concave profile (2)
[ANY ONE] (1 x 2) (2)

2.6.3 Riverbed is uneven and causes turbulent flow, which encourages erosion (2)
The steeper gradient will result in an increase in erosion (2)
It has obstacles (knickpoint/waterfall/temporary base levels) along the river that causes erosion (2)
The falling water is causing undercutting at the base of the waterfall (accept examples of erosional processes that occur at the base of the waterfall (plunge pool)) (2)
The softer rock at the base of the waterfall erodes faster (2)
[ANY TWO] (2 x 2) (4)

2.6.4 Downward/Vertical erosion dominates in the upper course causing a steep valley slope (2)
Headward erosion removes temporary base levels of erosion in the upper course (2)
Downward/Vertical erosion removes temporary base levels (waterfall) in the upper course (2)
This material is then transported downstream (2)
Discharge of the river increases in middle course causing lateral erosion (2)
Gradient in the middle course becomes less steep (2)
Deposition dominates in the lower course because the gradient is gentle (2)
Deposited materials fill up lakes and dams (2)
The river profile will now develop a concave shape from upper to lower course (2)
Equilibrium between erosion and deposition will maintain (result in) a graded profile (2)
[ANY FOUR] (4 x 2) (8)

[75]

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SECTION B: RURAL AND URBAN SETTLEMENTS AND ECONOMIC GEOGRAPHY OF SOUTH AFRICA

QUESTION 3

3.1 3.1.1 Sector (1)

3.1.2 Concentric zone (1)

3.1.3 Sector (1)

3.1.4 Multiple nuclei (1)

3.1.5 Concentric zone (1)

3.1.6 Multiple nuclei (1)

3.1.7 Sector (1) (7 x 1) (7)

3.2 3.2.1 C (1)

3.2.2 B (1)

3.2.3 C (1)

3.2.4 A (1)

3.2.5 B (1)

3.2.6 D (1)

3.2.7 B (1)

3.2.8 D (1) (8 x 1) (8)

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3.3 3.3.1 Decrease in population numbers in rural areas (1)
[CONCEPT] (1 x 1) (1)

3.3.2 21-23 million (1) (1 x 1) (1)

3.3.3 Decrease (in population numbers) (1) (1 x 1) (1)

3.3.4 Less people paying for municipal services (market) resulting in less municipal services available (2)
Decrease in customers/buying power as people leave the rural areas (2)
Results in businesses closing and an increase in unemployment (2)
Closing of basic services (accept examples) (2)
Brain drain as skilled people leave the area (2)
Less investment as the area becomes a ghost town (2)
Decrease in production as there are more old people and fewer labourers (2)
Increasing crime brings stress to the people living in the settlement/ increase in crime/ social ills on the (vulnerable) population left in rural areas (2)
Property values decrease (2)
Poverty increases (2)
Local economy stagnates results in less employment (2)
Increase in child headed families (2)
Higher dependency on social services (2)
Travel further to serviced towns (2)
[ANY TWO] (2 x 2) (4)

3.3.5 Unemployment due to businesses closing down (2)
Mechanisation requires less manual labour and leads to unemployment (2)
Increase in crime due to lack of policing (2)
Lack of recreational/cultural/entertainment facilities due to lack of investment (2)
Increase in poverty due to unemployment/low salaries (2)
Poor basic services (accept examples) due to less people/investment (2)
Travel long distances to access tertiary education (2)
Low salaries cause people to move to urban areas to seek better paying jobs (2)
Farm killings creates fear and forces farmers to move to urban areas (2)
The slow pace of finalising the land reform is frustrating and forces people to move (2)
Lack of professional services in the rural areas causes people to seek those services elsewhere (2)
Pull factors (from an uban perspective):
Accessibility to better and efficient services in urban areas (accept explained examples) (2)
Greater variety of recreational activities attracts young adults (2)
Higher standard of living/higher wages in urban areas due to dominant secondary and tertiary activities (2)
Greater job opportunities in urban areas due to high concentration of economic activities (2)
[ANY TWO - must qualify statement] (2 x 2) (4)

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3.3.6 Acceleration of land reform to enable the poor and landless to obtain land for farming (2)
Create job opportunities through the decentralisation of industries from urban areas (2)
Improve work conditions and salaries (2)
Change ownership of land from communal to private land ownership (2)
Employment will increase local market's buying power resulting in further businesses opening up (2)
Creating tourism opportunities that would lead to more revenue/business opportunities for rural community (2)
Improving services in rural areas (accept examples) (2)
Tax rebates and other incentives to attract industries to re-locate to the rural area (2)
Making cheaper industrial sites available (2)
Incentives (accept examples) for professional people coming to work in rural areas (2)
Improving infrastructure such as roads for people to easily access services (2)
Hosting festivals in the rural areas to create income (2)
Promote rural areas as peaceful with aesthetic beauty (2)
Examples of eco-tourism, eco-estates (2)
Development of retirement villages (2)
Introduce measures (accept examples) to reduce crime (2)
[ANY TWO] (2 x 2) (4)

3.4 3.4.1 Traffic congestion (1)
(1 x 1) (1)

3.4.2 Traffic is gridlocked/Traffic jam/Many cars (2)
(1 x 2) (2)

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3.4.3 High influx of people with cars that enter cities (2)
People living far from their working areas and as such are commuting daily (2)
Inefficient public transport system that cannot cope with commuter needs (2)
More vehicles on the road due to use of private motor vehicles (2)
Insufficient roads/lanes to cater for the additional vehicles on the road (2)
Expensive parking fees and shortage of parking space forces people to park on streets and as such blocks traffic (2)
Grid iron street patterns in older parts of the city that lead to the build-up of traffic because there are too many stops (2)
Narrow streets that do not allow for the smooth flow of traffic (2)
An influx of mini bus taxis that hold up traffic while picking up and off- loading passengers (2)
Intersections/unsynchronised robots create traffic congestion (2)
Poor road quality (potholes) can slow down traffic (2)
Poor maintenance of the roads (accept examples) (2)
Load shedding resulting in traffic lights not working resulting in traffic congestion (2)
Large concentration of economic activities in cities (2)
People go to work at the same time and also come from work the same time (2)
Service delivery protests (2)
[ANY TWO] (2 x 2) (4)

3.4.4 Daily road users experience increase in general stress levels (2)
Road rage becomes a daily occurrence (2)
There will be higher rate of accidents (2)
Employees arrive late at work (2)
Poor employer/employee relations associated with late arrival at work (2)
People can face disciplinary charges and even lose their jobs for being late (2)
Forced cancellation of some meetings (2)
Loss of productivity as hours lost due to traffic congestion (2)
Stop and start increase petrol consumption which is costly for motorists (2)
Increased maintenance costs for cars of motorists (2)
Motorists can be easy target of crime/hijacking/smash and grab (2)
Delay in the delivery of goods/services (2)
Respiratory diseases due to pollution from exhausts (2)
[ANY FOUR] (4 x 2) (8)

3.5 3.5.1 (Ongoing) drought (1)
Foot and mouth disease outbreak (1)
Changing climate (1)
Choosing the correct breed (1)
Walking long distances to find grazing (1)
[ANY ONE] (1 x 1) (1)

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3.5.2 They can adapt to the changing climate/reduced rainfall and warmer temperatures (1)
They can walk long distances to find grazing (1)
Adapts well in extensive and intensive agricultural environments (1)
With its adaptability and high functional efficiency (1)
[ANY TWO] (2 x 1) (2)

3.5.3 Provide government subsidies and grants (2)
Increase education and skills of farmers (2)
Provide access to funding from banks (2)
Government to intensify support by allocation of agricultural/veterinary services (2)
Land reform programmes where land is allocated to more farmers (2)
Create easier access to services and facilities (for example abattoirs) required for cattle farming (2)
More research to improve production (2)
Development of infrastructure for small scale farmers (2)
Regulation and subsidy of market prices (2)
[ANY TWO] (2 x 2) (4)

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3.5.4 Beef will become more affordable/cheaper prices (due to greater supply) (2)
Beef will be more accessible to all people (due to increased production) (2)
Beef will provide protein which is nutritious to the diets of many people (2)
Creates more job opportunities as more meat is available for processing resulting in income to buy nutritious food (2)
More meat will be available on the local market (due to increased production) (2)
A variety of other products associated with beef can be produced (2)
Decrease in the need to import expensive beef (2)
More exports result in more local production creating job opportunities (2)
[ANY FOUR] (4 x 2) (8)

3.6 3.6.1 Johannesburg (1) (1 x 1) (1)

3.6.2 33.8% of the national GDP in current prices (1)
45% of SA's total economic output (1) (2 x 1) (2)

3.6.3 Abundant raw materials from towns found near industries (2)
Availability of cheaper energy supply mined in local area and transmitted over short distances by ESKOM (2)
Availability of water and strategic water transfer schemes (2)
Well established transport infrastructure in the form of road, rail and air to access raw materials and markets (2)
Available flat land facilitates easy construction of infrastructure (2)
Pretoria as an administrative capital marketed the region for industrial development (2)
Availability of skilled/unskilled labour from high population (2)
Large population serving as a base for buying power/market (2)
Many institutions for skills development and research (2)
Railway linked to Maputo harbour for exports (2)
[ANY TWO] (2 x 2) (4)

3.6.4 (a) This region generally does not receive enough rainfall during the year (2)
High evaporation rates reduces the water supply (2)
There is high competing demand for water from different sectors of the economy (2)
High concentration of people in the region increases the demand of water for domestic use (2)
Poor management (accept examples) of existing water resources reduces the supply even further (2)
Water transfer schemes are costly (2)
[ANY ONE] (1 x 2) (2)

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(b) Water transfer schemes allow for water to be transferred to PWV (Gauteng) Industrial Region (2)
Tugela Vaal water transfer scheme allows water from the Tugela River in KZN to be transferred to the Vaal Dam (2)
Lesotho Highlands project allows water from the Katse Dam to be transferred to the Vaal Dam (2)
Recycling of water puts less pressure on the usage of the water (2)
Water restrictions (2)
Higher tariffs to limit the usage of water increasing (2)
[ANY ONE] (1 x 2) (2)

(c) High influx of people from other parts of South Africa (2)
High influx of illegal immigrants exceeding amount of employment opportunities available (2)
Increase in unskilled labour force (2)
Lack of Fourth Industrial Revolution skills (2)
Retrenchments due to unstable economic climate (2)
COVID-19 restrictions and protocols (2)
Industries use machinery/robots to do work which replaces people (2)
Lack of work experience (2)
[ANY TWO] (2 x 2) (4)
[75]

QUESTION 4

4.1 4.1.1 Dispersed (1)

4.1.2 Nucleated (1)

4.1.3 Dispersed (1)

4.1.4 Dispersed (1)

4.1.5 Crossroads (1)

4.1.6 Circular (1)

4.1.7 Linear (1)

4.1.8 Crossroads (1) (8 x 1) (8)

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4.2 4.2.1 B (1)

4.2.2 D (1)

4.2.3 D (1)

4.2.4 B (1)

4.2.5 C (1)

4.2.6 C (1)

4.2.7 B (1) (7 x 1) (7)

4.3 4.3.1 The uncontrolled/unplanned/formless expansion of an urban area (1)
[CONCEPT] (1 x 1) (1)

4.3.2 The new buildings (in after diagram) don't follow an organised/planned pattern (2)
Invasion into the surrounding rural areas (2)
Houses between the fingers have developed (2)
New buildings have been constructed in the outskirts/rural urban fringe (2)
[ANY ONE] (1 x 2) (2)

4.3.3 It is difficult to control the development of informal settlements which results from a high level of urbanisation (2)
They have limited control over privately owned land (2)
They do not have the capacity to control the influx of people into urban areas (2)
They do not have the budget and time to plan urban areas in a controlled manner (2)
Interference of political parties/Illegal invasion of land (2)
Some municipal officials sell land illegally/ corruption (2)
Land invasion on unoccupied land (2)
Legal protocols make it difficult for local authorities to impose the law (2)
High demand to locate in urban areas (2)
[ANY TWO] (2 x 2) (4)

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4.3.4 An influx of motor vehicles would cause an increase in air pollution (2)
Decentralisation of industries into the area contributes to global warming (2)
An increase in population/vehicle numbers adds to the noise/land pollution (2)
Industries in areas dumping waste water in nearby rivers (water pollution) (2)
Infrastructural and housing development necessitates the clearing of vegetation (2)
This would decrease the availability of oxygen (clean air) in the area (2)
Deforestation and a lack of vegetation cover would cause increased runoff and soil erosion (2)
Changes in the local microclimate due the removal of vegetation (2)
Aesthetic beauty of the area would be diminished (2)
The habitat for ecosystems in the area would be compromised (2)
There would be a loss of biodiversity (2)
An increase in population will cause water pollution due to lack of services (2)
Infiltration is reduced affecting the water table negatively (2)
Waste management becomes difficult resulting in (various forms of) pollution (2)
Artificial surfaces lead to flash flooding due to reduced infiltration (2)
[ANY FOUR] (4 x 2) (8)

4.4 4.4.1 When the environment is treated in a manner that threatens to harm its existence/pollution of the natural environment/destruction of the natural environment (1)
[CONCEPT] (1 x 1) (1)

4.4.2 Air pollution (1) (1 x 1)
(1)

4.4.3 Smoke from industries/power station being released into the atmosphere (1)
Steam/smoke from cooling towers (1)
[ANY ONE] (1 x 1) (1)

4.4.4 It is polluting the atmosphere/diminished air quality (2)
Increases temperature of the earth/global warming/ozone depletion (2)
Increases chemicals like sulphur dioxide in the air which causes acid rain (2)
Acid rain lowers the soil fertility (2)
Soot deposits are found on exposed objects (2)
Polluted air increases the rate of smog (2)
[ANY TWO] (2 x 2) (4)

4.4.5 People will suffer from health problems such as asthma and cancer (2)
It will result in increased medical costs for the local community (2)
The formation of smog causes visibility problems (2)
Acid rain over the long term will negatively affect buildings/soil/vegetation (2)
Exploitation of labour might be done on the vulnerable job seekers (2)
[ANY TWO] (2 x 2) (4)

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4.4.6 Use of renewable/non-conventional sources of energy will have less impact on the health of people (2)
Stricter control by local authorities on the levels of air pollution on a regular basis (2)
Fines imposed on factory owners for exceeding the pollution levels (2)
Incentives on tax rebates for factory owners who comply (2)
Create more green spaces and parks in the urban area (2)
Stacks of factories to be built higher so that pollutants can be dispersed into the upper atmosphere (2)
Put filters in factory stacks to reduce the amount of pollutants emitted (2)
Promote awareness campaigns/education regarding clean energy resources (2)
Promote industrial decentralisation to reduce pollution in the area (2)
[ANY TWO] (2 x 2) (4)

4.5 4.5.1 West Coast Corrosion Protection/WCCP (1) (1 x 1) (1)

4.5.2 Corrosion protection (1)
It will service a range of marine vessels (1)
[ANY ONE] (1 x 1) (1)

4.5.3 Natural bay (natural port) (1)
Flat land (1)
Large amount of space available (1)
[ANY ONE] (1 x 1) (1)

4.5.4 Road network in Saldanha Bay will be extended/upgraded (2)
Road network linking Saldanha Bay to other areas will be extended/upgraded (2
Harbour facilities will be improved and extended (2)
Railway network in the vicinity will be upgraded for the transport of bulky goods (2)
Bridges will be constructed to facilitate easier movement of goods/people (2)
Links between the different modes of transport (accept examples) improves accessibility/facilitate economic growth in the region (2)
[ANY TWO] (2 x 2) (4)

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4.5.5 **Positive:**
Create employment opportunities (2)
Increased earning potential (2)
Greater skills development based on greater demand (2)
Possible potential for promotions (2)
Improved working conditions and employee benefits associated with working with large companies (2)
Upliftment of standard of living/multiplier effect (2)
Alleviate poverty (2)
Negative:
Skilled workers from other areas are preferred above the locals of the area (2)
Smaller local businesses in direct competition with the investors might close with possible job losses (2)
Locals in the area might not have the necessary qualifications for the employment opportunities (2)
Susceptible to corruption, nepotism, bribery in order to secure jobs (2)
[ANY TWO] (2 x 2) (4)

4.5.6 Development of more facilities (accept explained examples) (2)
Improvement in services (accept explained examples) (2)
Learnerships/Bursaries for the youth in the community (2)
Sports/Recreational/Cultural sponsorships (2)
Partnerships with the community to reduce crime and youth empowerment (2)
Feeding schemes for disadvantaged members of the community (2)
Provision of PPE's/ medicines in cases of disease outbreaks (2)
Skills development programs (2)
Improvement of infrastructure (accept explained examples) (2)
Funding/Create community employment projects (2)
Local people should be given preference to employment opportunities (2)
Funding and upgrading of local schools (2)
Funding environmental cleaning projects (2)
[ANY TWO] (2 x 2) (4)

4.6 4.6.1 (Street) vendor/hawker (1)
Spaza shop (1)
[ANY ONE] (1 x 1) (1)

4.6.2 750 000 (1) (1 x 1) (1)

4.6.3 'There are few barriers to entering the informal sector' (1)
'Operating from home (spaza-shops)' (1)
[ANY ONE] (1 x 1) (1)

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4.6.4 Women have to fulfil domestic duties and the informal sector allows them to do both from home (2)
There are few barriers to entering the informal sector (2)
The informal market is lucrative and provide easy employment opportunities (2)
Smaller number of women have the required education and technical skills for jobs in the formal sector (2)
Women normally have to head up households (breadwinners) as single mothers (2)
Flexible hours allow women to perform business and domestic duties (2)
Gender inequality in the workplace causes less women to be employed (2)
[ANY TWO] (2 x 2) (4)

4.6.5 Creates employment for (local) people that cannot find employment in the formal sector (2)
People are able to earn an income which increases buying power, resulting in an increase in the production of goods (2)
Informal sector businesses purchase goods to sell from the formal sector increasing their market (2)
Multiplier effect stimulates other formal businesses (2)
Businesses in the formal sector sub-contract people from the informal sector creating more employment (2)
By buying goods (accept examples) they pay VAT, this contributes to the tax of the country (2)
Goods that are sold are cheap and affordable creating a bigger market thus increasing production and trade (2)
The informal sector engages in partnerships with formal businesses (accept examples) that stimulates business (2)
People employed in the informal sector develop entrepreneurial skills needed in the economy (2)
[ANY FOUR] (4 x 2) (8)
[75]

TOTAL: 225

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GRADE 12

GEOGRAPHY P1

NOVEMBER 2019

MARKS: 225

TIME: 3 hours

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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.

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SECTION A: CLIMATE, WEATHER AND GEOMORPHOLOGY

QUESTION 1

1.1 Give ONE term for each of the following descriptions by choosing a term from the list below. Write only the term next to the question numbers (1.1.1 to 1.1.7) in the ANSWER BOOK, e.g. 1.1.8 climate.

radiation fog; katabatic; temperature inversion; anabatic; smog; thermal belt; frost; aspect

1.1.1 Zone where a warm air mass is trapped between colder air masses

1.1.2 A mixture of smoke and fog

1.1.3 The direction in which the slope faces in relation to the sun's rays

1.1.4 Forms when calm conditions and clear skies occur in a valley

1.1.5 Forms on the valley floor when the air temperature is below freezing point

1.1.6 Type of wind that results from air sinking down the valley slope at night

1.1.7 Type of wind that results from air moving up the valley slope during the day (7 x 1) (7)

1.2 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 numbers (1.2.1 to 1.2.8) in the ANSWER BOOK, e.g. 1.2.9 D.

1.2.1 The cross-profile of a river shows the shape of the river valley from ...

A source to mouth.
B concave to convex.
C bank to bank.
D width to depth.

1.2.2 The shape of the valley in the upper course of a river is ...

A V-shaped.
B wide.
C gentle.
D U-shaped.

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1.2.3 Deposition is the dominant process in the ... of the river.

A upper course
B middle course
C lower course
D young course

1.2.4 The volume of water in the middle course of the river is likely to increase because of …

A lateral erosion.
B tributaries joining the river.
C downward erosion.
D no tributaries joining the river.

1.2.5 Rapids are most likely to develop in the …

A lower course.
B middle course and lower course.
C upper course.
D upper course and lower course.

1.2.6 The stream flow (discharge) of a river in the upper course is generally a … flow.

A layered
B laminar
C smooth
D turbulent

1.2.7 An oxbow lake can be formed from a ... in the lower course of the river.

A slip-off slope
B cut-off slope
C meander loop
D meander scar

1.2.8 The processes that a river undergoes from the upper course to the lower course are …

A erosion, transportation and deposition.
B transportation, erosion and deposition.
C erosion, deposition and transportation.
D deposition, erosion and transportation. (8 x 1) (8)

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1.3 FIGURE 1.3 is based on a case study of a tropical cyclone that recently affected Southern Africa.

1.3.1 Refer to the article. With what can you compare this intense tropical cyclone? (1 x 1) (1)

1.3.2 Name ONE condition that was necessary for the formation of tropical cyclone Idai. (1 x 1) (1)

1.3.3 Refer to the image and determine the expected wind speed with which tropical cyclone Idai will reach the coast of Mozambique. (1 x 1) (1)

1.3.4 Why will the wind speed decrease as you move further from the eye? (1 x 2) (2)

1.3.5 Explain how the dangerous semi-circle of tropical cyclone Idai originated (developed). (1 x 2) (2)

1.3.6 In a paragraph of approximately EIGHT lines, suggest the negative impact that high wind speeds will have on the coastal areas of Mozambique. (4 x 2) (8)

1.4 Study FIGURE 1.4 based on South African berg winds.

1.4.1 Name the season in which South African berg winds develop. (1 x 1) (1)

1.4.2 Give TWO pieces of evidence in FIGURE 1.4 to support your answer to QUESTION 1.4.1. (2 x 1) (2)

1.4.3 (a) Why are berg winds described as being dry? (1 x 2) (2)

(b) What causes the South African berg wind to be a warm offshore wind? (1 x 2) (2)

(c) How does a steep pressure gradient influence South African berg winds? (2 x 2) (4)

1.4.4 Why are emergency services (fire brigades, ambulances and traffic police) placed on high alert (standby) when berg wind conditions occur? (2 x 2) (4)

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1.5 Study FIGURE 1.5 based on river capture (stream piracy).

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

1.5.2 Describe the erosion associated with the process of river capture in sketch **A**. (1 x 1) (1)

1.5.3 Identify features **L** and **M** that result from river capture. (2 x 1) (2)

1.5.4 Match the terms *captor stream* and *misfit stream* to streams **J** and **K** in diagram **B**. (2 x 1) (2)

1.5.5 (a) What is a *watershed*? (1 x 1) (1)

(b) How can the process of river capture cause the watershed to change its position? (1 x 2) (2)

(c) What effect will river capture have on the volume of water in stream **K**? (1 x 2) (2)

1.5.6 What can the local farming community around stream **J** do to continue with their daily activities after river capture has taken place? (2 x 2) (4)

1.6 Refer to FIGURE 1.6 showing catchment and river management.

1.6.1 What is the main source of waste water? (1 x 1) (1)

1.6.2 Discuss how the removal of the natural vegetation for human activities increased the eroded soil and sediments in the river. (1 x 2) (2)

1.6.3 Explain how run-off from both settlements and cultivated land decreases the quality of water of a river. (2 x 2) (4)

1.6.4 In a paragraph of approximately EIGHT lines, discuss why sustainable river management is important for all sectors of the economy. (4 x 2) (8)

[75]

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QUESTION 2

2.1 Various options are provided as possible answers to the following questions based on the cross-section of the mid-latitude cyclone in FIGURE 2.1. Choose the answer and write down only the letter (A–D) next to the question numbers (2.1.1 to 2.1.8), e.g. 2.1.9 D.

2.1.1 The general direction of movement of the mid-latitude cyclone in the Southern Hemisphere is … -wards.

A north
B west
C east
D south

2.1.2 Identify cloud **A** that is associated with the warm front:

A Stratus
B Cumulus
C Nimbostratus
D Cumulonimbus

2.1.3 The area at **B** is referred to as the …

A warm sector.
B cold sector.
C polar front.
D apex.

2.1.4 The type of cloud at **C** is …

A stratus.
B cirrus.
C cumulonimbus.
D nimbostratus.

2.1.5 The gradient at **D** can be described as …

A steep.
B gentle.
C weak.
D vertical.

2.1.6 The … front is found at **D**.

A polar
B cold
C occlusion
D warm

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2.1.7 The more active and faster moving front is the …

A polar front.
B cold front.
C warm front.
D moisture front.

2.1.8 The type of rainfall at **E** is/are …

A light showers.
B frontal rain.
C orographic rain.
D convectional rain. (8 x 1) (8)

2.2 Give ONE term for each of the following descriptions by choosing a term from the list below. Write only the term next to the question numbers (2.2.1 to 2.2.7) in the ANSWER BOOK, e.g. 2.2.8 turbulent flow.

water table; confluence; river mouth; drainage basin; river source; interfluve; surface run-off; ground water

2.2.1 Point where the river enters the sea

2.2.2 Water that has infiltrated the soil

2.2.3 Area drained by a main river and its tributaries

2.2.4 Point where a river originates

2.2.5 The upper level of the saturated zone

2.2.6 Water flowing overland after it has rained

2.2.7 Point where a tributary meets the main river (7 x 1) (7)

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2.3 Study FIGURE 2.3 showing a synoptic weather map.

2.3.1 What are the lines representing air pressure on the map called? (1 x 1) (1)

2.3.2 Give TWO pieces of evidence that the season depicted is summer. (2 x 1) (2)

2.3.3 State the general movement of air pressure cell **A**. (1 x 1) (1)

2.3.4 Refer to air pressure cell **B**.

(a) Name this pressure cell. (1 x 1) (1)

(b) Explain how air pressure cell **B** influences the summer rainfall pattern in the interior of South Africa. (2 x 2) (4)

2.3.5 Refer to the weather station model at **C**.

(a) Give evidence from weather station model **C** that suggests that there is little possibility of rain. (1 x 2) (2)

(b) Account for the air temperature and wind direction recorded at weather station **C**. (2 x 2) (4)

2.4 Refer to FIGURE 2.4 based on the differences between rural and urban climates.

2.4.1 Will **A** or **B** generally experience lower wind speeds? (1 x 1) (1)

2.4.2 What evidence in the photograph indicates that **A** experiences higher evaporation rates than **B**? (1 x 2) (2)

2.4.3 Why does **B** experience more frequent rainfall than **A**? (1 x 2) (2)

2.4.4 Explain how the geometric shape of the buildings in the city causes a greater absorption of heat. (1 x 2) (2)

2.4.5 In a paragraph of approximately EIGHT lines, discuss how artificial surfaces and urban activities contribute to higher temperature recordings in **B**. (4 x 2) (8)

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2.5 Refer to FIGURE 2.5 showing river profiles.

2.5.1 Define the term *longitudinal profile.* (1 x 1) (1)

2.5.2 Describe the shape of longitudinal profile **A**. (1 x 2) (2)

2.5.3 Identify an ultimate (permanent) and temporary base level of erosion in the diagram. (2 x 1) (2)

2.5.4 How will the deposition of sediments influence the capacity of the dam? (1 x 2) (2)

2.5.5 Describe the difference in grade between the new longitudinal profile and the original longitudinal profile. (2 x 2) (4)

2.5.6 Explain the impact of the presence of the dam on erosion and deposition processes. (2 x 2) (4)

2.6 Study FIGURE 2.6 based on fluvial landforms in the lower course of the river.

2.6.1 Name fluvial feature **A**. (1 x 1) (1)

2.6.2 Give a reason for the formation of feature **A**. (1 x 2) (2)

2.6.3 Explain why the undercut slope at **B** is steep. (1 x 2) (2)

2.6.4 Feature **C** is a natural levee. Why is this fluvial landform commonly found in the lower course of the river? (1 x 2) (2)

2.6.5 In a paragraph of approximately EIGHT lines, explain the positive and negative impact of levees on farming on the floodplain. (4 x 2) (8)

[75]

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

QUESTION 3

3.1 Choose a term from COLUMN B that matches the description in COLUMN A. Write only the letter (A–I) next to the question numbers (3.1.1 to 3.1.8) in the ANSWER BOOK, e.g. 3.1.9 J.

COLUMN A		COLUMN B	
3.1.1	Ranking of urban settlements from smallest to largest	A	sphere of influence
3.1.2	Settlement that provides goods and services to the surrounding rural population	B	high-order goods
3.1.3	Area from where urban settlements draw their customers	C	urban hierarchy
3.1.4	Minimum number of customers needed to make a business profitable	D	low-order goods
3.1.5	The maximum distance that people travel to buy goods and services	E	central place
3.1.6	Type of goods that are purchased frequently	F	low-order centres
3.1.7	Few services and functions are available	G	high-order centres
3.1.8	Goods and services that are not purchased regularly	H	threshold population
		I	range

(8 x 1) (8)

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3.2 Refer to economic sectors. Match the statements below with the primary, secondary or tertiary economic sectors. Write only the sector next to the question numbers (3.2.1 to 3.2.7) in the ANSWER BOOK.

3.2.1 Mining is an example of this economic sector

3.2.2 This sector is concerned with the provision of services

3.2.3 The extraction of raw materials from the Earth's surface

3.2.4 Concerned with the processing of raw materials

3.2.5 The provision of electricity is an example of this sector

3.2.6 The manufacture of textiles, footwear and clothing

3.2.7 Contributes the least to the GDP of South Africa (7 x 1) (7)

3.3 Read the extract from the State of the Nation Address (SONA) in FIGURE 3.3 about rural settlement issues: land reform.

3.3.1 What is *land reform*? (1 x 1) (1)

3.3.2 Refer to land reform policy.

(a) Name TWO land reform programs referred to in the extract. (2 x 1) (2)

(b) Explain the difference between the land reform programmes named in QUESTION 3.3.2(a). (2 x 2) (4)

3.3.3 Give TWO solutions in the extract that refers to the success of land reform for emerging farmers. (2 x 1) (2)

3.3.4 How will the action of 'expropriation of land without compensation' help accelerate (speed up) the process of land reform? (1 x 2) (2)

3.3.5 Discuss how the implementation of land reform can affect South Africa's agricultural production. (2 x 2) (4)

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3.4 FIGURE 3.4 is based on urbanisation.

3.4.1 Distinguish between the terms *urbanisation* and *urban expansion.* (2 x 1) (2)

3.4.2 State the trend in urbanisation from 1970 to 2020. (1 x 1) (1)

3.4.3 Why does urbanisation give rise to urban expansion? (2 x 2) (4)

3.4.4 In a paragraph of approximately EIGHT lines, account for the urban problems that result from rapid urbanisation in cities in developing countries. (4 x 2) (8)

3.5 Refer to the cartoon in FIGURE 3.5 based on the importance of food security.

3.5.1 What is *food security*? (1 x 1) (1)

3.5.2 Why does the use of the words 'great news' not align (fit in) with the message of the cartoon? (1 x 2) (2)

3.5.3 Even if there was food security, why would it not help the people in the cartoon? (2 x 2) (4)

3.5.4 In a paragraph of approximately EIGHT lines, discuss ways to improve food security in South Africa. (4 x 2) (8)

3.6 FIGURE 3.6 is based on strategies for industrial development: Richards Bay.

3.6.1 In which province is Richards Bay located? (1 x 1) (1)

3.6.2 Give TWO examples of industries in Richards Bay found on the map. (2 x 1) (2)

3.6.3 Why is this area a leading manufacturer of heavy machinery? (2 x 2) (4)

3.6.4 How would industrial development in Richards Bay be an advantage to the local community? (2 x 2) (4)

3.6.5 Explain why Richards Bay would be attractive in terms of its infrastructure for both local and international investors. (2 x 2) (4)

[75]

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QUESTION 4

4.1 Refer to FIGURE 4.1 showing rural and urban settlements. Match the statements below to settlement type (**A** or **B**). Write only the letter next to the question numbers (4.1.1 to 4.1.7) in the ANSWER BOOK.

4.1.1 Settlement associated with secondary and tertiary activities

4.1.2 Primary activities dominate in this settlement

4.1.3 Known as a unifunctional settlement

4.1.4 This settlement offers multiple functions

4.1.5 The pattern of this settlement is always nucleated

4.1.6 An example of such a settlement is a city

4.1.7 The smallest settlement is called a farmstead (7 x 1) (7)

4.2 Choose a term in COLUMN B that matches the description in COLUMN A. Write only the letter (A–I) next to the question numbers (4.2.1 to 4.2.8) in the ANSWER BOOK, e.g. 4.2.9 J.

COLUMN A		COLUMN B	
4.2.1	Exchange of goods and services between countries	A	transportation network
4.2.2	Income generated by a country by means of exports	B	formal
4.2.3	Facilitates the movement of people, goods and information from one place to another	C	home market
4.2.4	Refers to goods that are brought into the country	D	trade
4.2.5	Legally registered businesses	E	beneficiation
4.2.6	Also known as the domestic market	F	GDP
4.2.7	Total value of goods and services produced by a country per year	G	foreign exchange
4.2.8	Value added to a raw material by means of processing	H	GNP
		I	imports

(8 x 1) (8)

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4.3 FIGURE 4.3 is an urban profile showing the relationship between land-use zones and building density.

4.3.1 Refer to land-use zone **A**.

(a) Name the land-use zone. (1 x 1) (1)

(b) State TWO characteristics of land-use zone **A**. (2 x 1) (2)

(c) Why is this land-use zone ideal for the location of light industries? (1 x 2) (2)

(d) Suggest ONE reason for land-use zone **A** having high land values. (1 x 2) (2)

4.3.2 Give TWO pieces of evidence that suggest that land-use zone **B** is a residential zone of high income. (2 x 2) (4)

4.3.3 Explain why land-use zone **B** and land-use zone **C** are not compatible. (2 x 2) (4)

4.4 Study FIGURE 4.4 based on an informal settlement and associated issues.

4.4.1 Define the term *informal settlement*. (1 x 1) (1)

4.4.2 According to the newspaper article, why is there an increased risk of fires in informal settlements? (2 x 1) (2)

4.4.3 Why does the occurrence of destructive fires increase in informal settlements in winter? (2 x 2) (4)

4.4.4 In a paragraph of approximately EIGHT lines, explain how the local municipality can reduce fire hazards for people living in informal settlements. (4 x 2) (8)

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4.5 Refer to FIGURE 4.5, the infographic of South Africa's industrial regions: Port Elizabeth-Uitenhage (Nelson Mandela Metropole).

4.5.1 In which province is the Port Elizabeth-Uitenhage industrial region located? (1 x 1) (1)

4.5.2 State the main industry in this region. (1 x 1) (1)

4.5.3 Give TWO physical (natural) factors in the infographic that contributed to its growth as a manufacturing region. (2 x 1) (2)

4.5.4 Why is the large population an advantage to the Port Elizabeth-Uitenhage region? (1 x 2) (2)

4.5.5 Explain how the industry in QUESTION 4.5.2 contributed to the economic growth of this region. (2 x 2) (4)

4.5.6 Discuss TWO challenges experienced by industries in the Port Elizabeth-Uitenhage region in comparison to industries in the PWV region. (2 x 2) (4)

4.6 Refer to FIGURE 4.6, a cartoon based on the informal sector.

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

4.6.2 What evidence in the cartoon indicates that the minister is not in favour of the informal sector? (1 x 1) (1)

4.6.3 Suggest a possible reason for the minister not wanting informal street trading taking place. (1 x 2) (2)

4.6.4 Give TWO reasons why the informal sector is important for the informal trader. (2 x 2) (4)

4.6.5 In a paragraph of approximately EIGHT lines, discuss reasons for the growth of the informal sector in South Africa. (4 x 2) (8)

[75]

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NATIONAL SENIOR CERTIFICATE

GRADE 12

GEOGRAPHY P1

NOVEMBER 2019

ANNEXURE

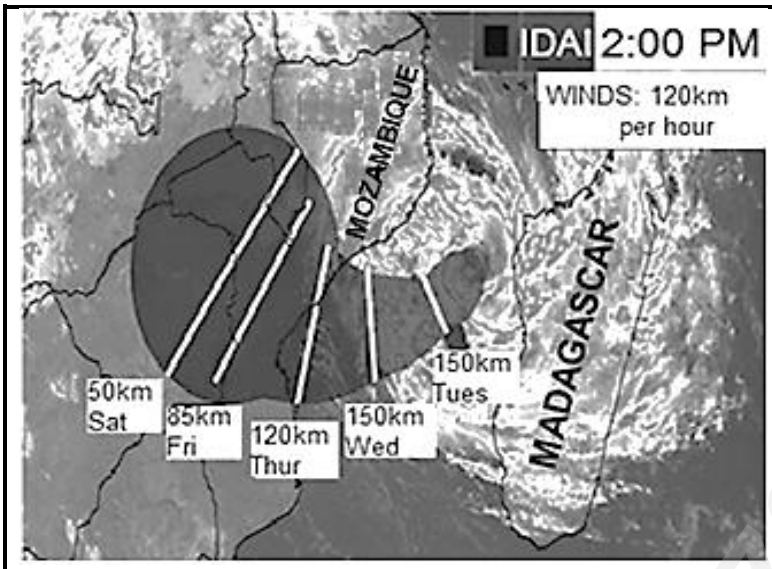
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FIGURE 1.3: CASE STUDY OF A TROPICAL CYCLONE THAT RECENTLY AFFECTED SOUTHERN AFRICA



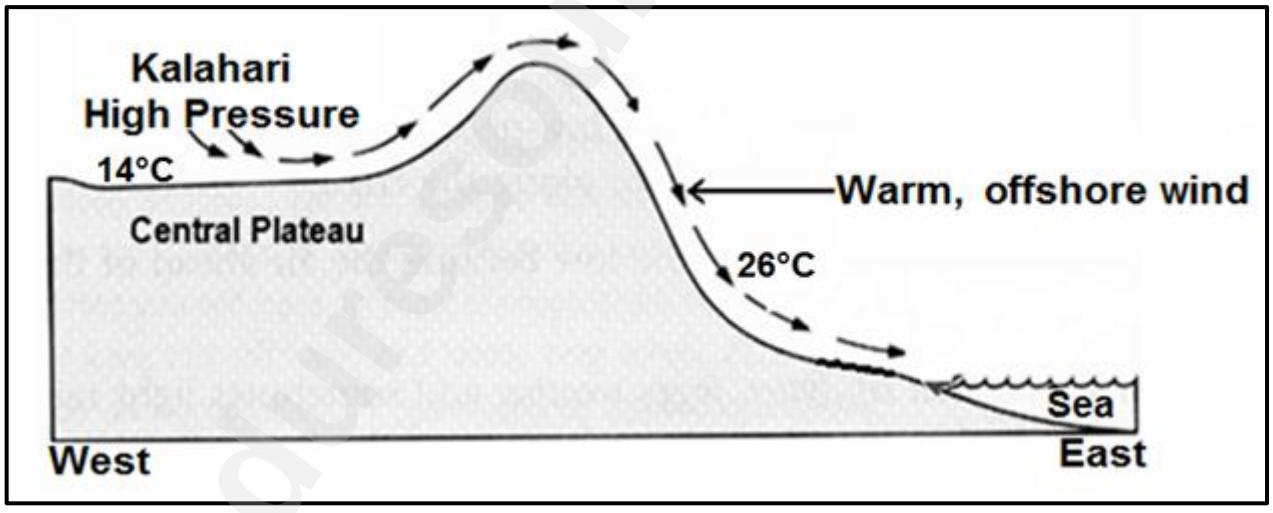
[Adapted from turntable.kagiso.10]

Tropical cyclone Idai has quickly strengthened into an intense tropical cyclone and has been fluctuating (changing) in intensity over the past 48 hours. An intense tropical cyclone is equivalent to a category 3 hurricane.

Idai is slowly moving in a westerly direction towards Mozambique with wind speeds exceeding 170 km/h closer to the eye.

It is expected to reach the coastal area near Beira, Mozambique's fourth largest city with 530 000 residents, before midnight on Thursday.

FIGURE 1.4: SOUTH AFRICAN BERG WINDS



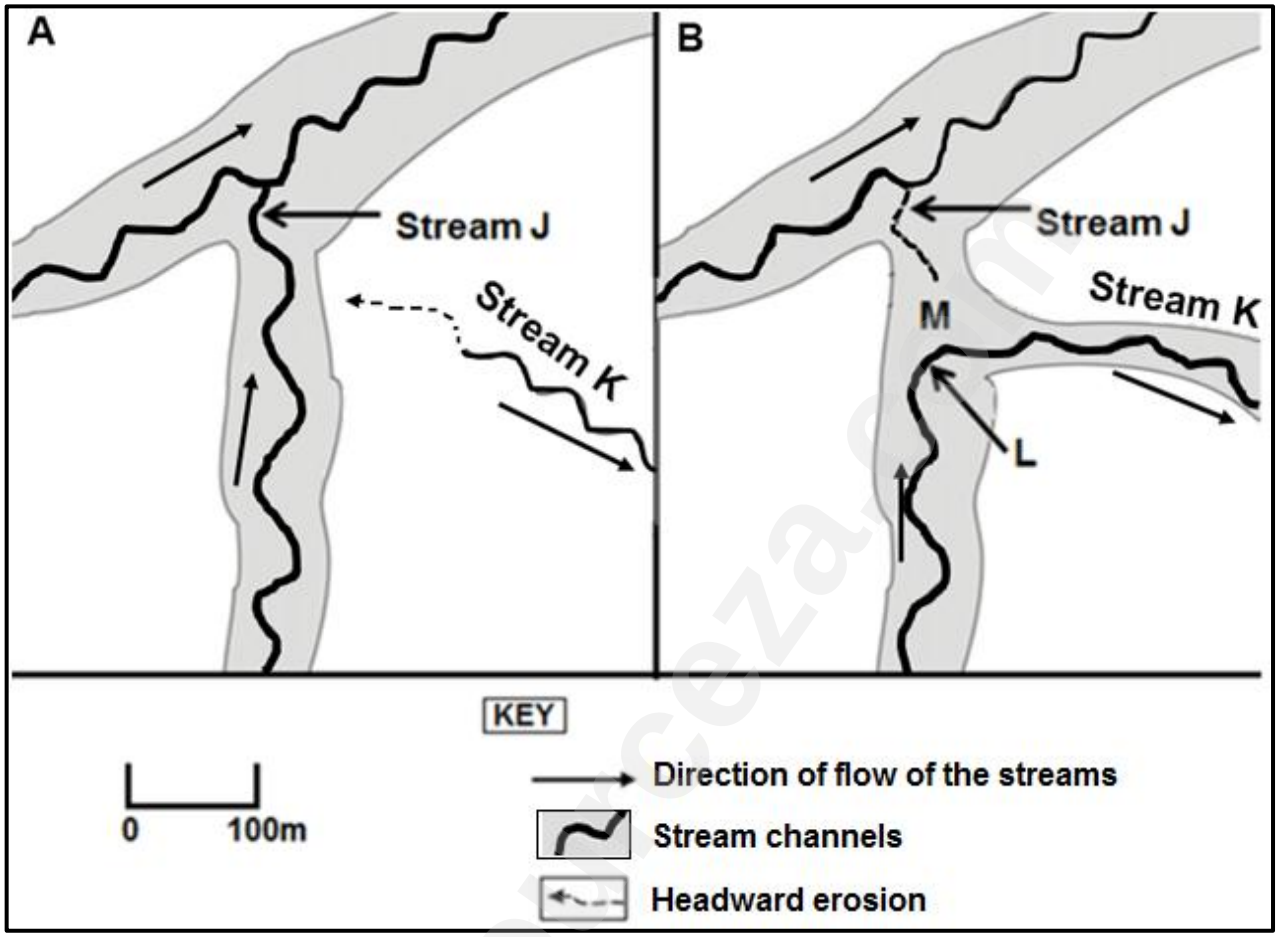
[Source: Examiners own sketch]

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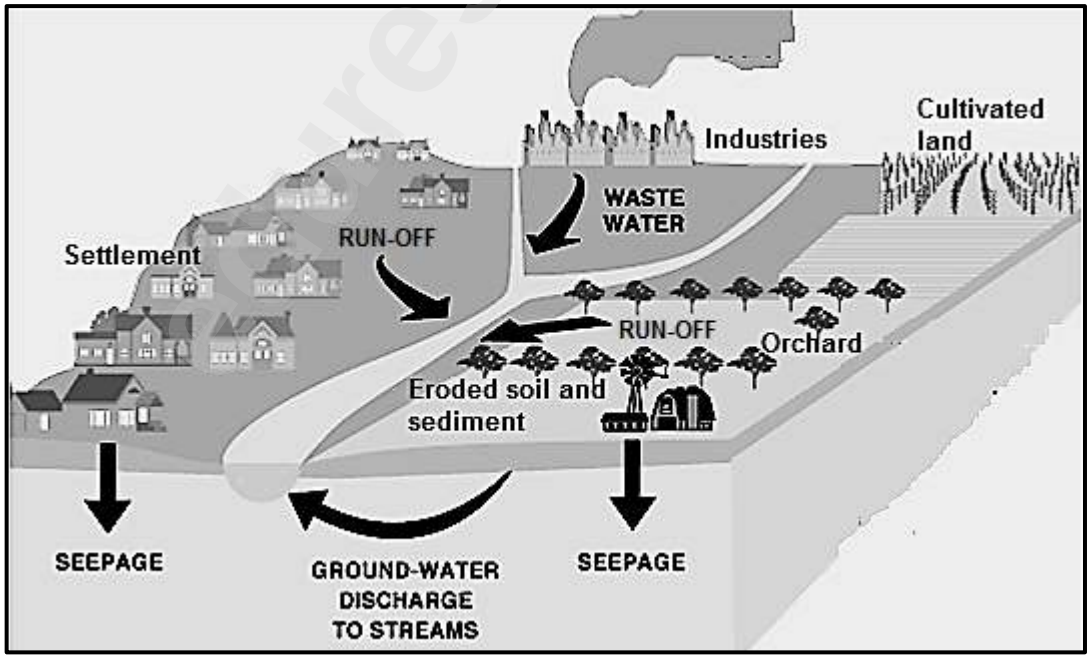
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FIGURE 1.5: RIVER CAPTURE (STREAM PIRACY)



[Adapted from http://www.researchgate.net]

FIGURE 1.6: CATCHMENT AND RIVER MANAGEMENT



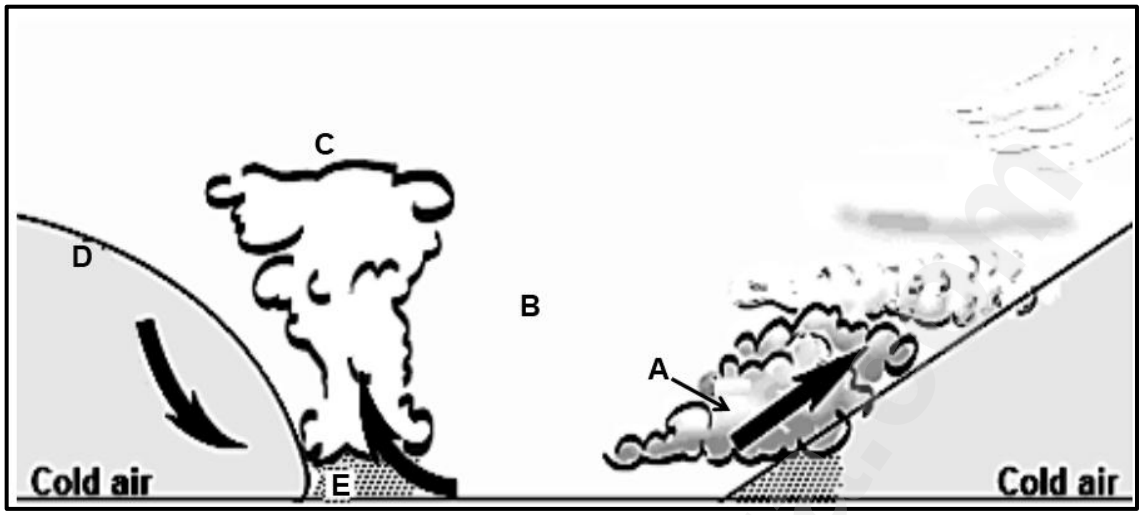
[Source: https://openoregon.pressbooks.pub/envirobiology/chapter/7-3-water-pollution]

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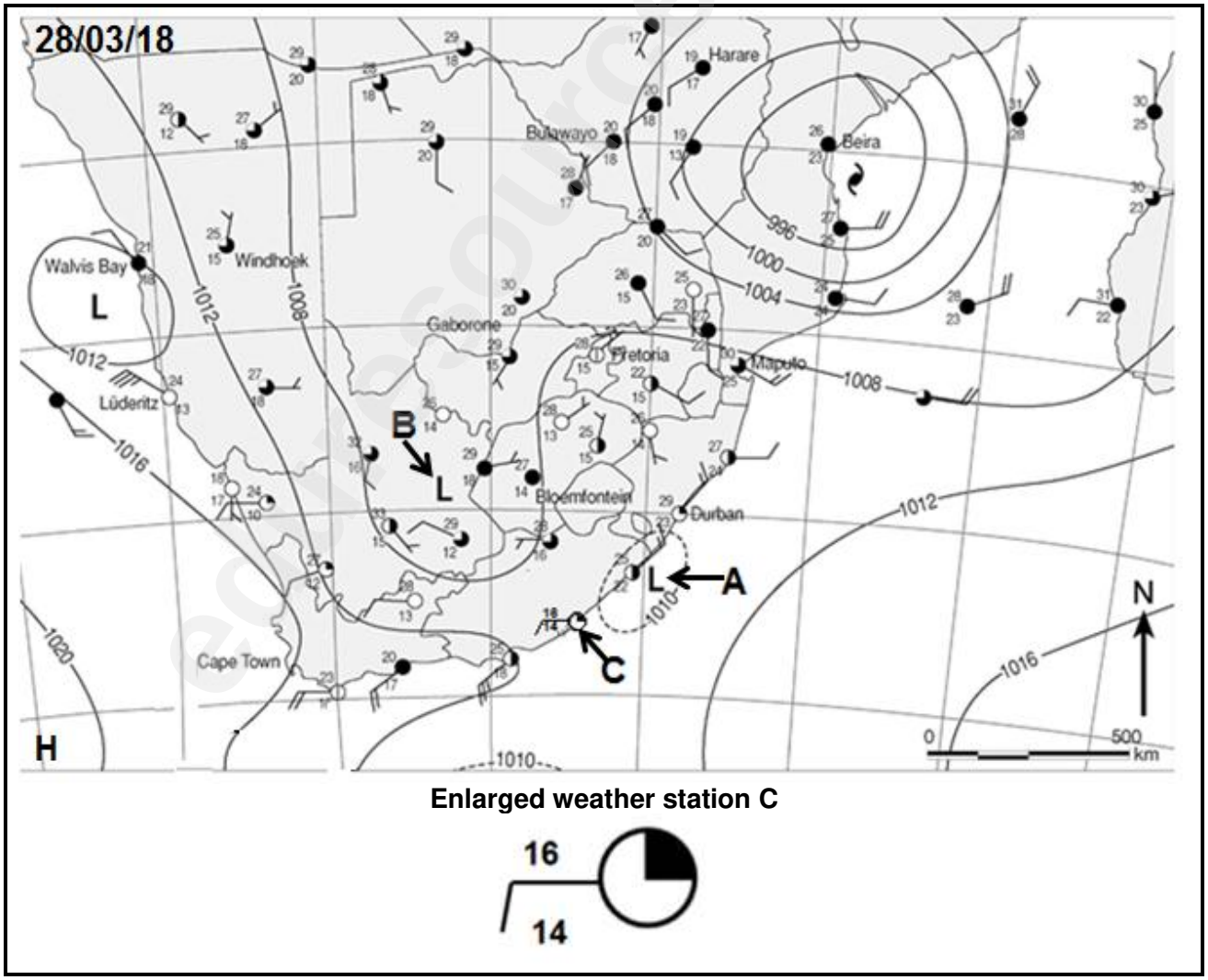
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FIGURE 2.1: MID-LATITUDE CYCLONE – STAGES OF DEVELOPMENT AND RELATED WEATHER



[Adapted from http://www.met.reading.ac.uk/~sgs02rpa/CONTED/WEATHER04]

FIGURE 2.3: READING AND INTERPRETING SYNOPTIC WEATHER MAPS



Enlarged weather station C

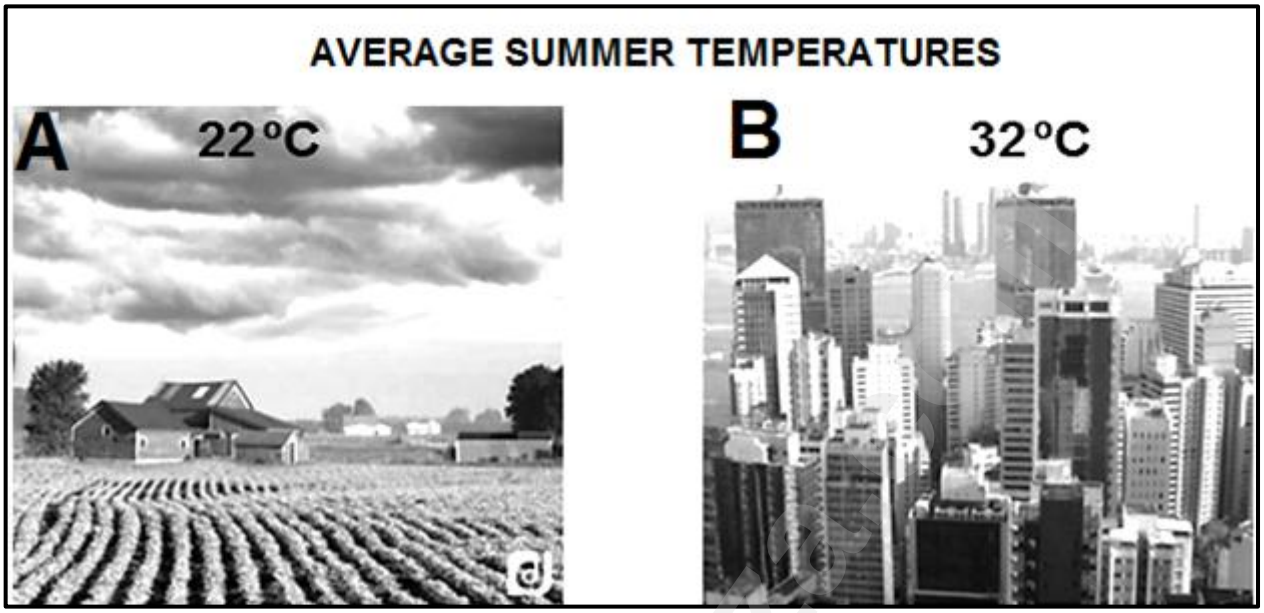
[Adapted from http://www.koolasun.co.za/weather/sa-weather-chart.html]

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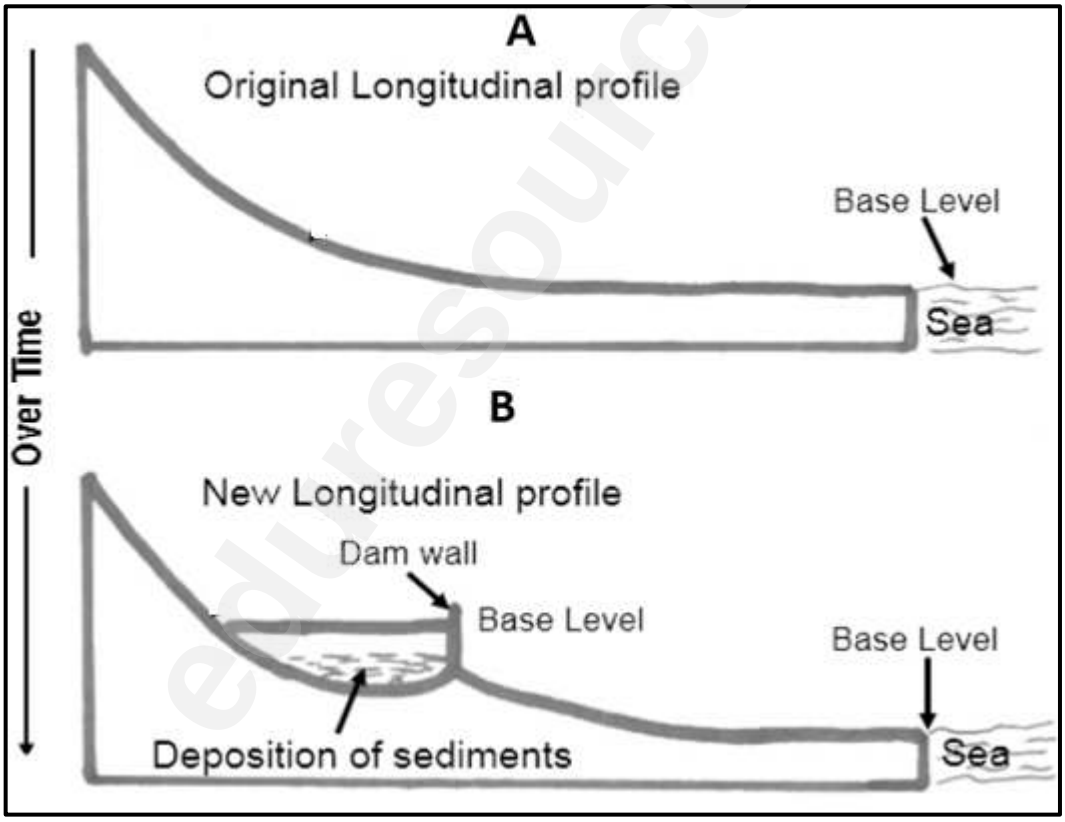
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FIGURE 2.4: DIFFERENCES BETWEEN RURAL AND URBAN CLIMATES



[Adapted from www.slideshare.net/Nandini1810/difference-of-climate-conditions-between-urban-and-rural]

FIGURE 2.5: RIVER PROFILES



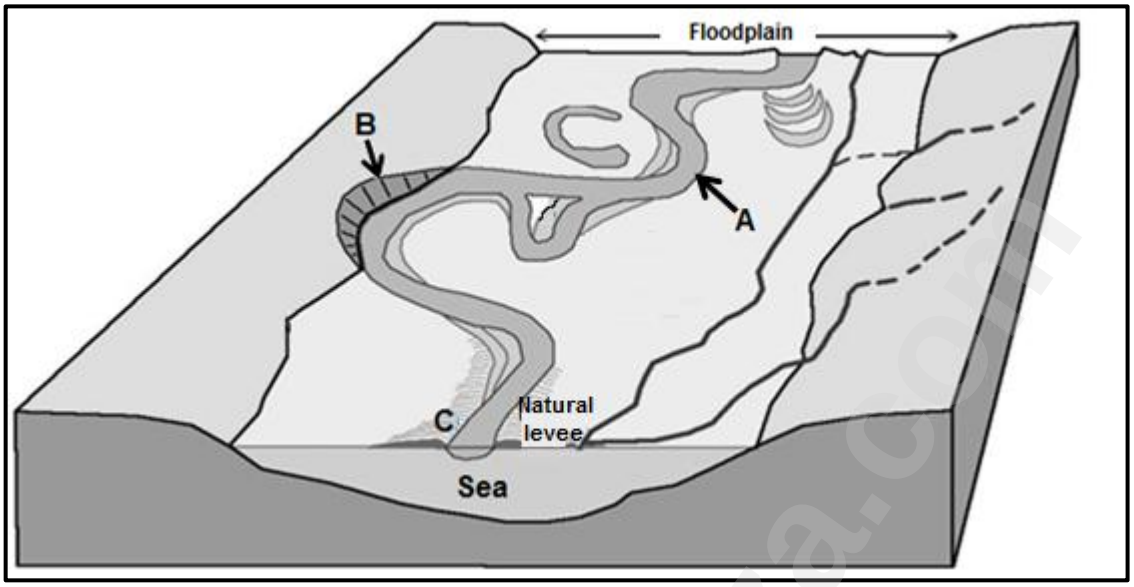
[Source: Examiner's own sketches]

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FIGURE 2.6: FLUVIAL LANDFORMS



[Adapted from https://www.google.com/search?q=cartoons+on+fluvial+landforms&tbm]

FIGURE 3.3: RURAL SETTLEMENT ISSUES: LAND REFORM

STATE-OWNED 'LAND PARCELS' IDENTIFIED FOR EXPROPRIATION – RAMAPHOSA

President Cyril Ramaphosa says state-owned 'land parcels' have been identified for the purpose of *expropriation without compensation. Ramaphosa delivered his 2019 State of the Nation Address (SONA) in February 2019. An advisory panel of experts was put in place to advise government on its land reform programme. 'As part of accelerating land reform, we have identified land parcels owned by the state for redistribution,' President Ramaphosa stated.

With regard to an agriculture stimulatory package, Ramaphosa said government had invested a lot in comprehensive farmer development support to ensure that restituted and communal land was productively used. Government would continue to give importance to targeted skills development and capacity building programmes for emerging farmers.

*Expropriation: the act of a government in taking privately owned property, seemingly to be used for purposes designed to benefit the overall public

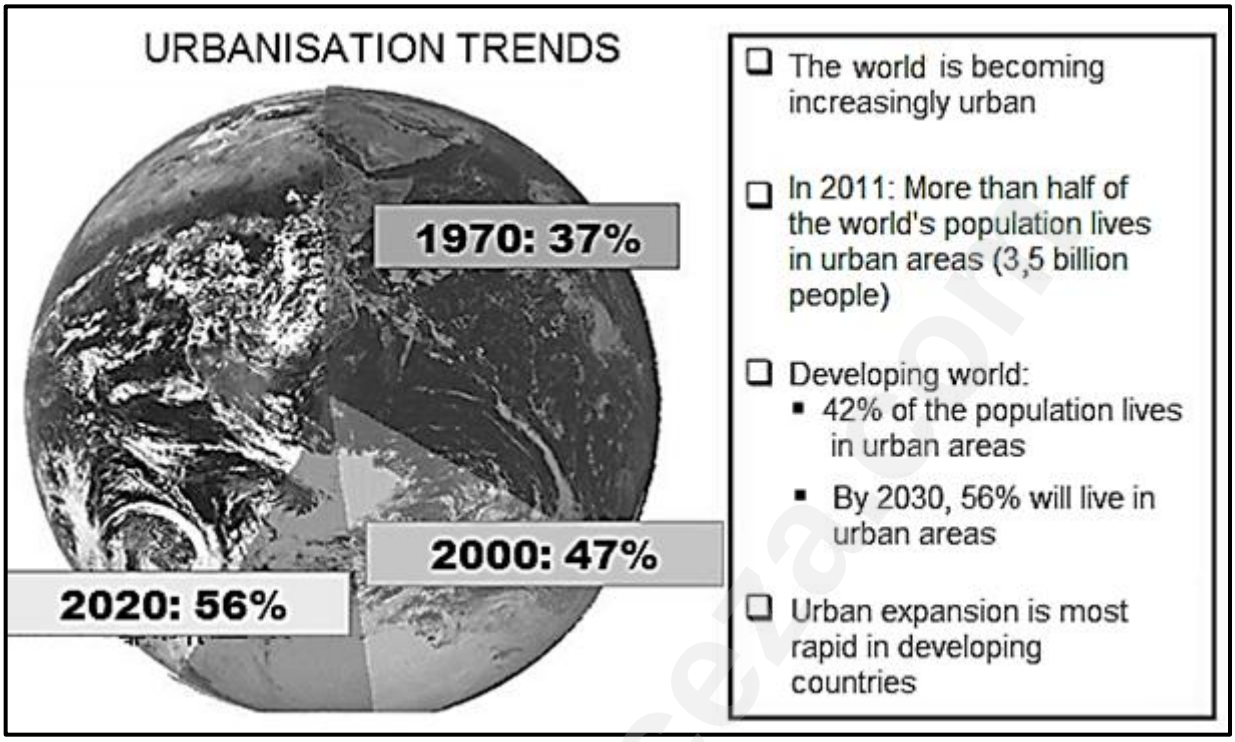
[Adapted extract of SONA from https://www.news24.com/SouthAfrica/News/state-owned-land-parcels-identified-for-expropriation-ramaphosa-20190207]

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FIGURE 3.4: URBANISATION



[Source: https://www.google.co.za/search?q=urban+expansion+south+africa&tbm=isch&tbs=rimg:CeZI]

FIGURE 3.5: THE IMPORTANCE OF FOOD SECURITY



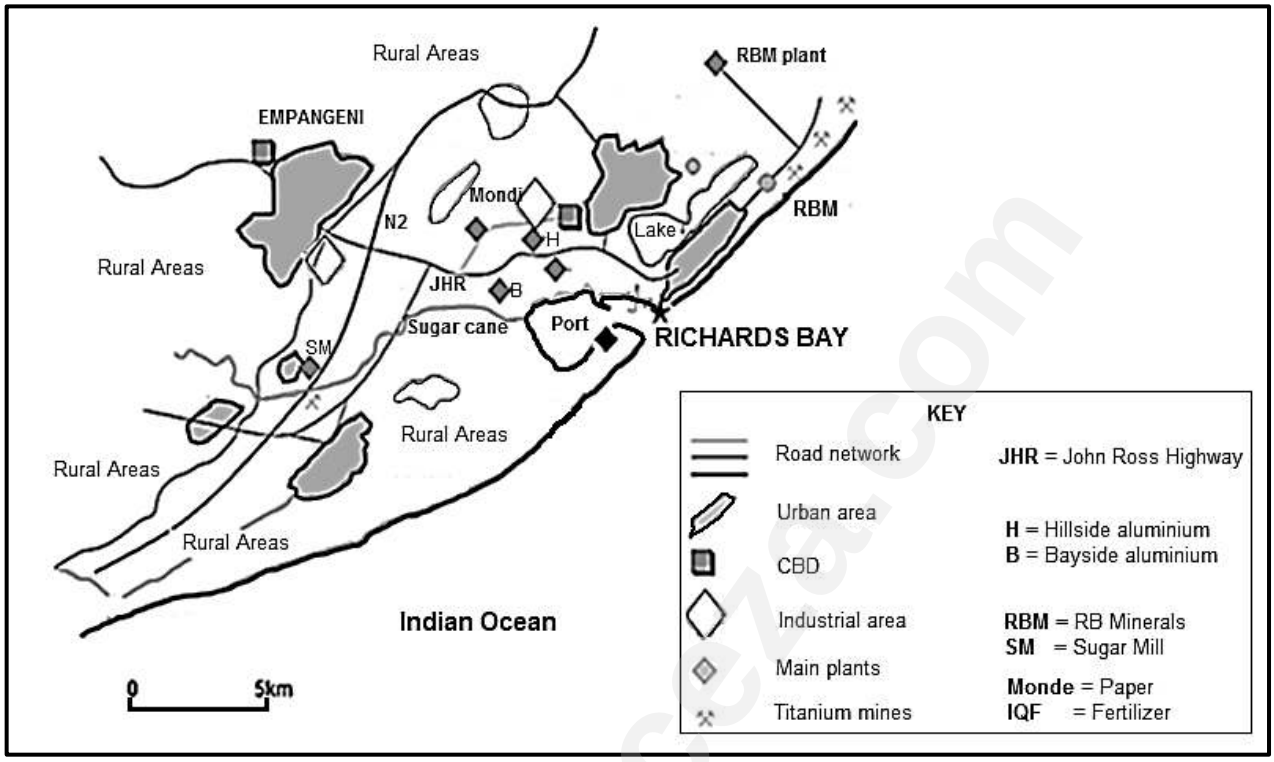
[Source: https://www.google.com/url?sa=i&source=images&cdwww.pinterest.com]

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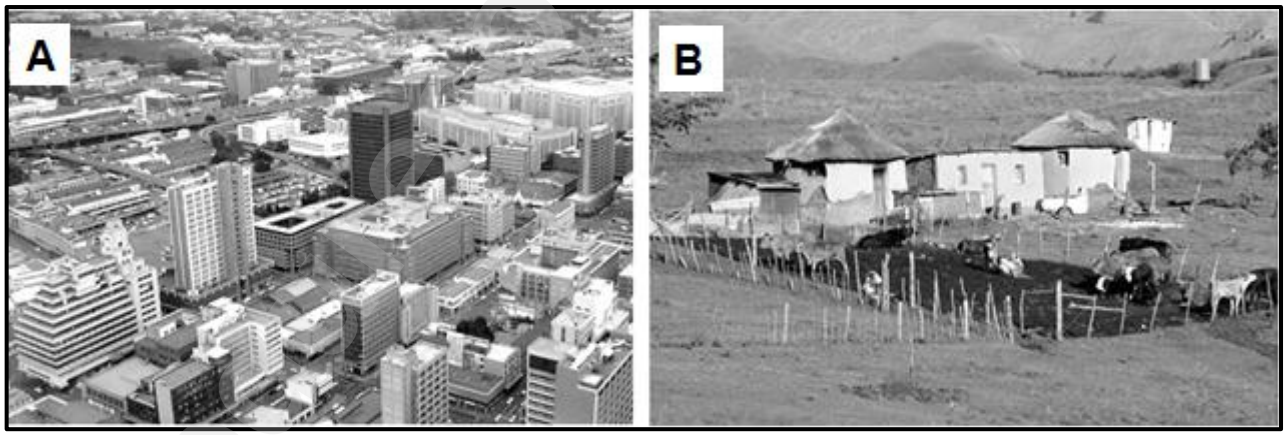
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FIGURE 3.6: STRATEGIES FOR INDUSTRIAL DEVELOPMENT: RICHARDS BAY



[Adapted from https://www.google.com/search?q=Richards+Bay+industrial+area]

FIGURE 4.1: RURAL AND URBAN SETTLEMENTS



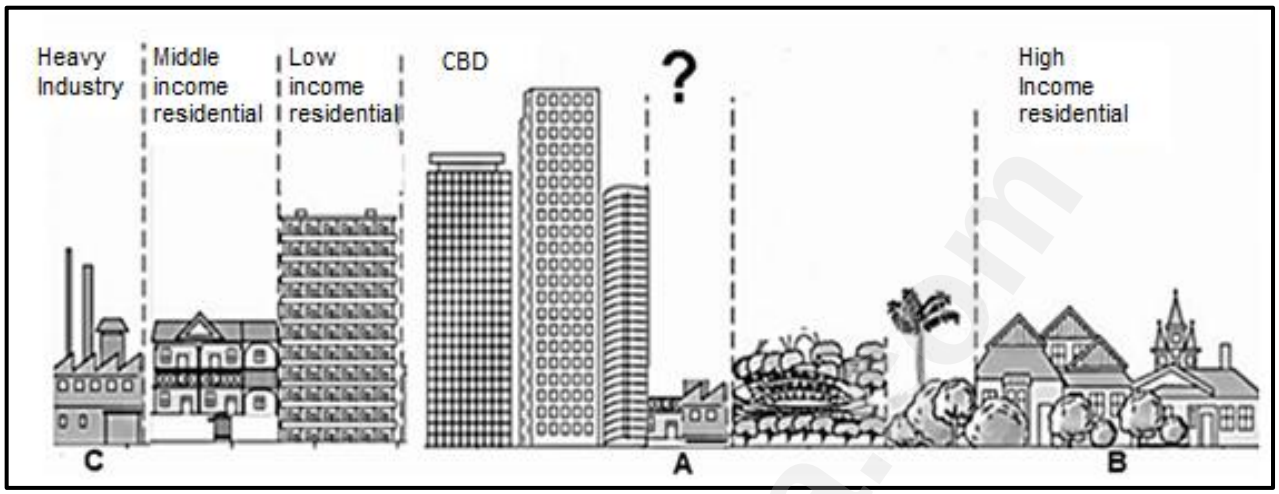
[Source: https://www.google.co.za/search?q=rural+settlements+in+south+africa&tbm=isch&tbs
https://www.google.co.za/search?tbm=isch&q=urban+settlements+in+south+africa&chips]

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FIGURE 4.3: THE RELATIONSHIP BETWEEN URBAN LAND-USE ZONES AND BUILDING DENSITY



[Adapted from search?q=urban+land+use+zones&tbm=isch&tbs=rimg]

FIGURE 4.4: INFORMAL SETTLEMENTS AND ASSOCIATED ISSUES

Durban – Most of the major fires attended to in recent years by the eThekwini Fire department were in informal settlements. In July, a fire engulfed (surrounded) 300 shacks at the Kennedy Road Informal Settlement and killed Thembinkosi Mncwango.

Winter is especially a time to be on high alert as there is an increase of fires breaking out.

It took fire fighters 10 hours to put out the fire that rapidly spread through the informal settlement. In May, children aged between 4 and 7 years, died while sleeping in a shack when it caught alight (burning) in Verulam. Existing settlements remain at risk due to the nature of construction material used, spacing among shacks, emergency accessibility challenges and human behaviour among other causes.

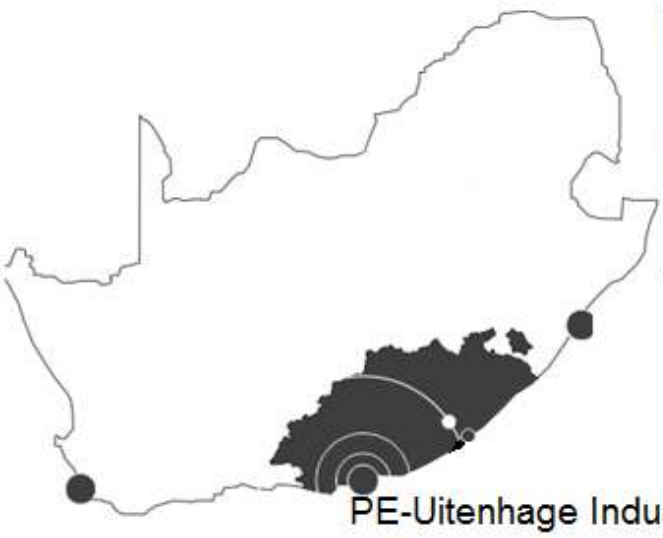
[Adapted from https://www.iol.co.za/dailynews/news/worst-blazes-in-citys-informal-settlements-18631790]

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FIGURE 4.5: SOUTH AFRICA'S INDUSTRIAL REGIONS: PORT ELIZABETH-UITENHAGE (NELSON MANDELA METROPOLE)



The PE-Uitenhage industrial region, covering an area of 1 957,6 km², is situated on the wetter eastern half of South Africa, in the Eastern Cape. It has a major natural bay seaport and is the economic powerhouse of the Eastern Cape.

Main economic sectors: Manufacturing (25%), community services (23%), finance (23%), trade (13%) and transport (13%)

The automotive industry is one of the main contributors to the area's economic growth. The PE-Uitenhage industrial region is home to two major automotive manufacturers, namely Volkswagen and General Motors South Africa. In addition, there are over 150 vehicle component manufacturers in the region.

Source: https://municipalities.co.za/overview/1/nelson-mandela-bay-metropolitan-municipality

FIGURE 4.6: THE INFORMAL SECTOR



[Adapted from https://www.google.com/search?tbm=isch&sa=street+trading+cartoons&oq]

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Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

GEOGRAPHY P1

NOVEMBER 2019

MARKING GUIDELINES

MARKS: 225

These marking guidelines consist of 26 pages.

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Marking Guidelines

The following marking guidelines have been developed to standardise marking in all provinces.

Marking

- ALL selected questions MUST be marked, irrespective of whether it is correct or incorrect
- Candidates are expected to make a choice of THREE questions to answer. If all questions are answered, ONLY the first three questions are marked.
- A clear, neat tick must be used: ✓
  - If ONE mark is allocated, ONE tick must be used: ✓
  - If TWO marks are allocated, TWO ticks must be used: ✓✓
  - The tick must be placed at the FACT that a mark is being allocated for
  - Ticks must be kept SMALL, as various layers of moderation may take place
- Incorrect answers must be marked with a clear, neat cross: ✗
  - Use MORE than one cross across a paragraph/discussion style questions to indicate that all facts have been considered
  - Do NOT draw a line through an incorrect answer
  - Do NOT underline the incorrect facts
- Where the maximum marks have been allocated in the first few sentences of a paragraph, place an **M** over the remainder of the text to indicate the maximum marks have been achieved

For the following action words, ONE word answers are acceptable: **give**, **list**, **name**, **state**, **identify**
For the following action words, a FULL sentence must be written: **describe**, **explain**, **evaluate**, **analyse**, **suggest**, **differentiate**, **distinguish**, **define**, **discuss**, **why**, **how**
The following action words need to be read within its context to determine whether a ONE word answer or FULL sentence is required: **provide**, **what**, **tabulate**

Totalling and transferring of marks

- Each sub-question must be totalled
  - Each question has six sub-sections, therefore six sub-totals per question required
  - Sub-section totals to be written in right hand margin at the end of the sub-section and underlined
  - Sub-total must be written legibly
  - Leave room to write in moderated marks on different levels
- Total sub-totals and transfer total to top left hand margin next to question number
- Transfer total to cover of answer book

Moderation

Marking on each level of moderation is done in the same way as the initial marking. All guidelines for marking must be adhered to.

If a mark for a sub-question is changed after moderation, the moderator must strike through the marker's mark and write down the new mark. ~~12~~ 16

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The total for the question must be re-calculated, and similarly be struck off and the new total to be written down. 6 3

3

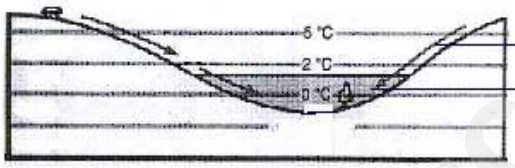
QUESTION 1

1.1.1 A (South Atlantic High) (1) ✓
1.1.2 B (Kalahari High) (1) ✓
1.1.3 B (South Indian) (1) ✗ **2**

1.2.1 Melting snow ✓
1.2.2 Mouth ✗
1.2.3 Third order ✓ **2**

1.3.1 Katabatic ✗
1.3.2 **1** occurs during the day while **2** occurs at night ✓✓

1.3.3 Cold air rolls down ✓✓ into the valley and forms an inversion



Air flows downslope ✓✓ **6**

1.4.1 Shape of front concave ✗
Steep gradient of front ✓

1.4.2 Warm air undercuts the cold air ✗

1.4.3 Air behind the cold front is colder ✓✓ than the air in front. Cold air moves faster ✓✓ than warm air ahead of it. Cold front catches ✓✓ up with the warm front. **7**

1.5.1 (a) A river that only flows all year round ✗

(b) The river channel is wide ✗

(c) Regularity ✓✓ of rainfall and the soil ✓✓ type over which the streams flow. **4**

1.6.1 Gauteng ✓ and the Eastern ✗ Cape

1.6.2 Mining waste ✓ dumped in the river and industries ✓ pollute the water.

1.6.3 The cost of food production will increase ✓✓ at it is costly to buy purified water. Farmers will have to buy more ✓✓ chemicals to purify water. Chemicals cost ✓✓ a lot and this will increase production costs. It will be costly ✓✓ to purify water for use in electricity generation. These costs will be included in electricity prices. Costs will increase the price of electricity during production. There will be less clean water to generate hydro-electricity. M **11**

SECTION A: CLIMATE, WEATHER AND GEOMORPHOLOGY

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QUESTION 1

1.1 1.1.1 thermal belt (1)

1.1.2 smog (1)

1.1.3 aspect (1)

1.1.4 radiation fog (1)

1.1.5 frost (1)

1.1.6 katabatic (1)

1.1.7 anabatic (1) (7 x 1) (7)

1.2 1.2.1 C (1)

1.2.2 A (1)

1.2.3 C (1)

1.2.4 B (1)

1.2.5 C (1)

1.2.6 D (1)

1.2.7 C (1)

1.2.8 A (1) (8 x 1) (8)

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1.3 1.3.1 a category 3 hurricane (1) (1 x 1) (1)

1.3.2 Sea surface temperatures of 26,5°C and above (1)
Unstable atmospheric conditions (1)
Originates between 5º and 25º north and south (1)
Coriolis force (1)
Calm conditions (light variable winds) over the ocean surface (1)
Little surface friction (1)
Surface air convergence (1)
Extensive upper air divergence of winds aloft (1)
Rapid large scale evaporation of moisture over ocean/High humidity (1)
Release of latent heat (1)
[ANY ONE] (1 x 1) (1)

1.3.3 120 (km/h) (1)
(Accept 120km/h to 149km/h) (1 x 1) (1)

1.3.4 Pressure gradient decreases when you move away from the eye (2)
Isobars are further apart as you move away from the eye (2)
Pull of the vortex becomes weaker (2)
[ANY ONE] (1 x 2) (2)

1.3.5 Circulation and forward movement in the same direction (2)
Intense winds in the cyclone combines with the force of the entire cyclone moving forward/westwards into the left-hand quadrant (2)
Wind shear (a sudden change in wind direction) at lower altitudes intensifies this quadrant (2)
[ANY ONE] (1 x 2) (2)

1.3.6 Storm surges due to strong winds will cause floods (2)
Damage to property because of flooding/strong winds (2)
Loss of life (2)
It causes injury to people/animals (2)
It will cause coastal erosion (2)
Destruction of infrastructure (accept examples) (2)
Ecosystems are disrupted (2)
Loss of biodiversity (2)
Negative impact on tourism/Outdoor activities (2)
Negative impact on the fishing industry (2)
Loss of agricultural production/Food insecurity (2)
Costly to repair damages/medical and insurance claims (2)
Contamination of water/Water borne diseases (2)
Aesthetic beauty of coastal area destroyed (2)
[ANY FOUR] (4 x 2) (8)

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1.4 1.4.1 Winter (1) (1 x 1) (1)

1.4.2 The presence of the Continental/Kalahari high pressure (1)
Lower temperatures (14ºC) over the interior (1)
Movement of air from the Kalahari high towards the coast (1)
Off-shore winds originating from the Kalahari high pressure (1)
[Warm offshore wind not accepted]
[ANY TWO] (2 x 1) (2)

1.4.3 (a) As air descends, moisture evaporates (2)
Very little moisture carried from the interior (2)
They originate over the land (interior of the country) (2)
[ANY ONE] (1 x 2) (2)

(b) Air heats up (adiabatically) as it descends (2)
Temperature of air increases by 1°C/100m as it descends (2)
[ANY ONE] (1 x 2) (2)

(c) Will result in a rapid/strong/increase in wind speed (2)
Will result in air heating up quickly (2) (2 x 2) (4)

1.4.4 Berg winds dry out the vegetation/crops which makes the vegetation/crops flammable (2)
There is a possibility that fire can spread quickly and cause destruction over large areas e.g. houses burned down (2)
Outbreaks of fire could harm people, e.g. skin burns and smoke inhalation/respiratory problems (2)
High temperatures can cause dehydration of the vulnerable like children and the aged (2)
Visibility of motorists is affected and can cause accidents (2)
All emergency personnel are needed for evacuation purposes (2)
[Candidates can link emergency services to the above responses]
[ANY TWO] (2 x 2) (4)

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1.5 1.5.1 When one river captures/intercepts/robs/steals the headwaters of another river/When a more energetic river captures a less energetic river (1)
The stream flowing at a lower level captures/intercepts/robs/steals the waters of a stream flowing at a higher level (1)
[CONCEPT] (1 x 1) (1)

1.5.2 Headward /Backward erosion (1)
Erodes upstream (from its source) (1)
[ANY ONE] (1 x 1) (1)

1.5.3 L – elbow of capture (1)
M – wind gap (1) (2 x 1) (2)

1.5.4 J – misfit stream (1)
K – captor stream (1) (2 x 1) (2)

1.5.5 (a) It is a high lying area that separates two different drainage basins (1)
[CONCEPT] (1 x 1) (1)

(b) Lowering (vertically) of the watershed (2)
Headwards movement/retreats horizontally (2)
[ANY ONE] (1 x 2) (2)

(c) It will increase the volume of the water in this stream (2) (1 x 2) (2)

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1.5.6 They would have to access other water sources (e.g. JoJo tanks) (2)
Harvesting rain water (2)
The transport of water from other areas (2)
Make use of wind pumps/bore holes to access ground water (2)
Build (farm/small) dams (2)
Recycling/purification of water (2)
Reduce the amount of livestock on farms (2)
They would have to reduce the variety of crops on farms (2)
Decrease the production of crops on farms (2)
Change to crops that require less water (2)
The use of GM/drought resistant seeds (2)
Increase the use of fertilizers (2)
More intensive irrigation (2)
Use of canals and furrows for irrigation (accept examples) (2)
More effective method of irrigation (e.g. drip irrigation instead of sprinkler system) (2)
Use fertigation (include fertiliser) with drip irrigation processes (2)
Remove alien vegetation (2)
Greenhouse farming (2)
Use of cover crops to reduce evaporation (2)
Use water wisely and sparingly in households (2)
[ANY TWO] (2 x 2) (4)

1.6 1.6.1 Industries (1) (1 x 1) (1)

1.6.2 Lack of natural vegetation increases the run off (2) (1 x 2) (2)

1.6.3 **SETTLEMENTS**
Untreated sewage from settlement ends up in the river polluting the water and causing diseases (2)
Domestic waste water is released in drainage systems decreasing the quality of the water (2)
Grey water (dust, oil from roads) pollutes the river system (2)
Runoff from settlements carries waste material into the water (2)
[ANY ONE]

CULTIVATED LAND
Fertilizers used on farms is washed into the rivers causing eutrophication (2)
Pesticides used for crops is washed into the river polluting the water (2)
Soil erosion makes the water murky (2)
[MUST REFER TO BOTH SETTLEMENT AND CULTIVATED LAND]
[ANY ONE] (2 x 2) (4)

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1.6.4 **SUSTAINABLE RIVER MANAGEMENT STRATEGIES**

Access to clean fresh water for future generations (2)
South Africa is a water scarce country (low unreliable rainfall) (2)
Better quality crops will be produced with higher yields (2)
Most industries need a good water supply to function productively (2)
Water is necessary for the production of products e.g. soft drinks, sweets, canned foods (2)
Higher exports with more profits from crops (2)
Healthier meat products with a better monetary value will be produced (2)
Rivers are a less expensive mode of bulk transport (2)
Good river management encourages eco-tourism/tourism/ recreation (2)
Good quality of water sustains farming/mining/fishing/forestry industry (2)
Maintaining rivers creates sustainable employment (2)
It allows for the generation of hydroelectricity which is an alternative source of power (2)
Decreases purification costs of drinking water (2)
Decreases water borne diseases therefore workforce is healthier (2)
Results in water being more affordable/cheaper (2)

OR

UNSUSTAINABLE RIVER MANAGEMENT

Increases purification costs of drinking water (2)
Increases water borne diseases therefore workforce is unhealthy (2)
Acidic water stunts plant growth (2)
Acidic water can hinder crop cultivation (2)
Contaminated water poses a health hazard (2)
Polluted rivers will affect the fishing industry (2)
Polluted rivers can contaminate oceans (2)

[CANDIDATES CAN REFER TO BOTH SUSTAINABLE OR UNSUSTAINABLE FACTORS BUT THE SAME FACT <u>CANNOT</u> BE REPEATED]

[ANY FOUR] (4 x 2) (8)

[75]

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QUESTION 2

2.1 2.1.1 C (1)

2.1.2 C (1)

2.1.3 A (1)

2.1.4 C (1)

2.1.5 A (1)

2.1.6 B (1)

2.1.7 B (1)

2.1.8 B (1) (8 x 1) (8)

2.2 2.2.1 river mouth (1)

2.2.2 ground water (1)

2.2.3 drainage basin (1)

2.2.4 river source (1)

2.2.5 water table (1)

2.2.6 surface runoff (1)

2.2.7 confluence (1) (7 x 1) (7)

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2.3 2.3.1 Isobars (1) (1 x 1) (1)

2.3.2 Low pressure/Thermal/Heat low over the interior (1)
The date is 28 March (1)
Presence of tropical cyclone (1)
Generally high temperatures over the interior (1)
Overcast conditions over the interior (1)
Position of the South Atlantic and South Indian high pressures further south (1)
Clear conditions over the South-western Cape (1)
Thermal low displaced the Kalahari high pressure cell (1)
[ANY TWO] (2 x 1) (2)

2.3.3 Along the coast (1)
From west to east along the coast (1)
South easterly, easterly then north eastward (1)
[ANY ONE] (1 x 1) (1)

2.3.4 (a) Heat/thermal low (1) (1 x 1) (1)

(b) The land surface is intensely heated causing warm air to rise (2)
High evaporation rates (2)
Condensation results in dense cloud cover/heavy rain/thunderstorms (2)
It allows for the pulling of cool, dry air from the western part of the country and warm, moist air from the eastern parts of the country to the interior (2)
It leads to the formation of the moisture boundary/Line thunderstorms occur (2)
[ANY TWO] (2 x 2) (4)

2.3.5 (a) Scattered/ little cloud cover/$\frac{2}{8}$ /$\frac{1}{4}$ indicated (2)
Low temperatures (2)
Off shore winds (2)
[ANY ONE] (1 x 2) (2)

(b) **AIR TEMPERATURE**
Anticlockwise movement of air from the high-pressure cell brings cooler air onto the land (2)
South Atlantic high-pressure ridges over the land feeding in cooler air (2)

WIND DIRECTION
Wind direction is influenced by the anticlockwise movement of air in a high pressure (2)
[BOTH AIR TEMPERATURE AND WIND DIRECTION MUST BE MENTIONED] (2 x 2) (4)

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2.4 2.4.1 B (1) (1 x 1) (1)

2.4.2 Evidence of clouds forming (at A than B) (2)
More vegetation causes more evapo-transpiration (at A than B) (2)
Evaporation of water from the soil (at A than B) (2)
More natural surfaces (at A than B) (2)
[ANY ONE] (1 x 2) (2)

2.4.3 There are more condensation nuclei/hygroscopic nuclei in B (at B than A) (2)
(1 x 2) (2)

2.4.4 Tall buildings cause the sun's rays to be reflected and deflected between the buildings (multiple reflection) (2)
A larger surface area to absorb the sun's heat (2)
[ANY ONE] (1 x 2) (2)

2.4.5 **ARTIFICIAL SURFACES**
Concrete and metals are used in the construction of buildings therefore more heat is retained (2)
Tarred (darker surface) roads are a greater absorber of heat/Low albedo (2)
Glass and mirror surfaces of modern building leads to multiple reflections of heat raising the temperature (2)
Taller buildings have a larger surface area that can be heated (2)
Heat is trapped between tall buildings (2)
The storm water drainage systems in urban areas result in less evaporation, less cooling and increased temperatures (2)

URBAN ACTIVITIES
Urban areas have more heat generating activities such as restaurants (2)
Use of appliances like stoves, air conditioners, fridges, etc. generates heat (2)
Industries (light) that produce heat (2)
Vehicles increase the production of pollutants that absorb and retain heat for longer (2)
Building activities like construction generate heat (2)
[ANY FOUR - MUST REFER TO BOTH ARTIFICIAL SURFACES AND URBAN ACTIVITIES] (4 x 2) (8)

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2.5 2.5.1 (Side) view of a river from source to mouth (1)
[CONCEPT] (1 x 1) (1)

2.5.2 It has a concave shape (2)
It is steep in the upper course, less steep in the middle course and gradual in the lower course (2)
[ANY ONE] (1 x 2) (2)

2.5.3 Ultimate (permanent) – sea (1)
Temporary – dam (1) (2 x 1)
(2)

2.5.4 It will decrease the capacity/reduce the volume of water (2) (1 x 2) (2)

2.5.5 Original longitudinal profile is graded /concave shaped/with no temporary base levels (2)
New longitudinal profile is ungraded/multi-concave/has temporary base levels of erosion (2)
[ANY ONE COMPARISON] (2 x 2) (4)

2.5.6 **EROSION**
More erosion upstream of dam due to greater water volumes (2)
Erosion temporarily stops at the dam (2)
Rate of erosion decreases downstream of the dam due to less water (2)
[ANY ONE]

DEPOSITION
Deposition of silt in the dam results in less deposition downstream (2)
The rate of deposition increases as the velocity of the water is reduced downstream (2)
[MUST REFER TO BOTH EROSION AND DEPOSITION]
[ANY ONE] (2 x 2) (4)

2.6 2.6.1 Undercut slope (1)
Meander loop (1)
(Accept Meander) (1)
[ANY ONE] (1 x 1) (1)

2.6.2 **UNDERCUT SLOPE**
Faster moving water on the outer bank (2)
Increased erosion on the outer bank (2)

MEANDER/MEANDER LOOP
The gradient is more gradual (2)
Reduction in velocity (2)
Increase in lateral erosion (2)
[ANY ONE] (1 x 2) (2)

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2.6.3 Constant undercutting of the outer bank causes it to collapse (2)
Faster moving water on the outer bank removes the eroded material (2)
[ANY ONE] (1 x 2) (2)

2.6.4 (Regular) flooding generally occurs in the lower course of the river and as it overflows sediments are deposited on the banks (2)
In the lower course of the river the gradient is more gentle and deposition occurs (2)
[ANY ONE] (1 x 2) (2)

2.6.5 **POSITIVE**
It reduces risk of flooding of farmland and loss of farm equipment (2)
Reduces direct run off into the river making more water available for farming on the floodplain (2)
Levees prevent fertile soil from the floodplain from being washed into the river (2)
Raised banks increases the carrying capacity of the river (2)
More water available for farming (2)
Prevents loss of livestock/farmland therefore higher profits (2)
Fertile soil on the levee promotes farming (2)

NEGATIVE
Reduces the deposition of sediment (alluvium) on farmland (2)
Reduces the fertility of soil on the farmland (2)
Reduces access to water for farmers (2)
Forms an obstacle to tributaries joining the main river, reducing the amount of water available in the river (2)
Irrigation becomes more difficult and expensive (2)
Bad drainage can result in waterlogged floodplains and rotting crops (2)
[CANDIDATES MUST REFER TO BOTH POSITIVE AND NEGATIVE IMPACT]
[ANY FOUR] (4 x 2) (8)
[75]

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SECTION B: RURAL AND URBAN SETTLEMENTS AND ECONOMIC GEOGRAPHY OF SOUTH AFRICA

QUESTION 3

3.1 3.1.1 C (1)

3.1.2 E (1)

3.1.3 A (1)

3.1.4 H (1)

3.1.5 I (1)

3.1.6 D (1)

3.1.7 F (1)

3.1.8 B (1) (8 x 1) (8)

3.2 3.2.1 primary (1)

3.2.2 tertiary (1)

3.2.3 primary (1)

3.2.4 secondary (1)

3.2.5 tertiary (1)

3.2.6 secondary (1)

3.2.7 primary (1) (7 x 1) (7)

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3.3 3.3.1 Correct the imbalances of the past with regards to land ownership (1)
[CONCEPT] (1 x 1) (1)

3.3.2 (a) Land redistribution (1)
Land restitution (1) (2 x 1) (2)

(b) Land redistribution is where state owned land is redistributed to previously disadvantaged people (2)
Land restitution refers to the process where people who were forcefully removed from their land can claim their land back or be compensated financially (2)
[CONCEPTS] (2 x 2) (4)

3.3.3 Prioritise targeted skills development (1)
Capacity building programmes (1) (2 x 1) (2)

3.3.4 Shorter time period for land to become available (2)
No costly drawn out legal processes involved (2)
No willing-buyer willing-seller clause (2)
Land is now more easily accessible and more affordable (2)
A Government advisory panel has been put in place to facilitate the process (2)
[ANY ONE] (1 x 2) (2)

3.3.5 **NEGATIVE:**
Re-allocated land may not be used productively or be cultivated at all (2)
Redistribution of land might not stimulate economic growth (2)
The move from subsistence to commercial farming might not take place on re-allocated land (2)
Redistributed land is given to people without any agricultural knowledge (2)
Some beneficiaries of restitution might not move back to their land (2)
Lack of support by the government in terms of skills training and finance (2)
Subsistence farming practices may lower agricultural output (2)
Lack of farming skill of new farmers may decrease agricultural output (2)
Lack of capital may result in decreased agricultural output (2)
Infertile soil can result from bad soil management (2)
Agricultural land might not be used correctly or is used for other purposes (2)
Uncertainty can lead to neglect of farms (2)
Land could be under- utilised as farmers might not have capital to buy equipment etc. (2)
Some commercial farmers could abandon farming and enter other sectors of the economy (2)
Nepotism and corruption with regards to how land is redistributed could decrease agricultural production. (2)

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POSITIVE:
Encourages more small- scale farmers to engage in farming (2)
Production from small- scale farmers can be cheaper compared to large-scale farming (2)
If more people engage in farming it will reduce food insecurity (2)
Crop production can increase as more people have access to farmland (2)
Small -scale farming can reduce the cost of food as they can provide competition (2)
Exports from small-scale farmers' can increase foreign exchange (2)
Subsistence farmers will have the opportunity to become commercial farmers (2)
More people will be employed on farms and this will increase yields (2)
Can counteracts rural-urban migration and keep people in rural areas to be employed on farms (2)
[ANY TWO] (2 x 2) (4)

3.4 3.4.1 Urbanisation is the process of the increasing percentage of the population living in urban areas (1)
Urban expansion is the physical/areal/spatial growth of the urban area (1)
[CONCEPTS] (2 x 1) (2)

3.4.2 Increases/upward (1)
(37% to 56%) (1)
Positive (1)
[ANY ONE] (1 x 1) (1)

3.4.3 With more people entering the city there is more demand for housing (2)
More space is required for the growth of industries (2)
More recreation areas are required (2)
More services and facilities are needed (accept examples of services) (2)
Growth of the infrastructure to accommodate the increased population (accept examples of infrastructure) (2)
[ANY TWO] (2 x 2) (4)

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3.4.4 **TRAFFIC CONGESTION**:
Results from insufficient roads/lanes to cater for the additional vehicles on the road (2)
There will be more vehicles on the road because of greater affordability (2)
Inefficient public transport system (2)
Greater distances between workplace and home (2)

HOUSING SHORTAGES:
Increase in rural-urban migration increases urban population (2)
People cannot afford formal housing (2)
Municipalities cannot cope with the demand of RDP housing (2)

INFORMAL SETTLEMENT:
Increase in population numbers due to influx of migrants (2)
People cannot afford formal houses (2)

SERVICE PROVISION:
Municipalities cannot keep up with the demands for services which leads to strike action (2)
Understaffing/shortage of services results in long queues, time off work which reduces productivity in order to receive e.g. medical services (can explain example) (2)
Culture of non-payment for services, which leads to municipal shortfalls (2)
Poor management by municipalities (2)

OVERCROWDING:
Too many people residing in a residence/flats (2)

LACK OF PLANNING:
Municipalities did not plan for the influx of people in urban areas (2)
Municipal budgets did not cater for the influx of people into urban areas (2)

URBAN BLIGHT:
Buildings are not maintained by landlords who rent apartments out (2)
Influx of people into the city cause overcrowding in apartments (2)
Lack of service provision by municipalities due to non-payment of services (2)

INNER CITY PROBLEMS:

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Lack of jobs and poverty forces people into crime (2)
Insufficient policing (2)
Social ills e.g. prostitution, drug abuse, human trafficking etc. (2)
Informal trading contributes to squalor in the inner city (2)
[ANY FOUR – NO MARKS FOR NAMING OF THE PROBLEM. AWARD MARKS FOR CAUSE FOR THE PROBLEM] (4 x 2) (8)

3.5 3.5.1 When a country is able to provide access to nutritious food for its inhabitants (1)
[CONCEPT] (1 x 1) (1)

3.5.2 Food insecurity is not great news due to the fact that people still do not have access to nutritious food (2)
People are still searching in dust bins for food (2)
People are still begging on the streets for food (2)
[ANY ONE] (1 x 2) (2)

3.5.3 People are unemployed (live on streets) (2)
They will not be able to afford the food due to high prices (2)
Unaffordable to those living on the streets (2)
Inaccessible to them (2)
[ANY TWO] (2 x 2) (4)

3.5.4 Use genetically modified crops to ensure higher yields (2)
Improved scientific farming methods which would encourage higher yields (2)
More training and skills development would increase large-scale farming (2)
A greater variety of crops should be grown as South Africa has a diverse climate (2)
Land reform programmes would transfer land ownership to more farmers which would increase crop production (2)
Sustainable agriculture would serve to protect agricultural land for a long time thereby ensuring more food production (2)
The government should provide incentives to protect small-scale farmers which would increase food production (2)
Free trade would make importing of food easier and more accessible (2)
Planting a variety of crops would prevent soil erosion and ensure enough fertile land (2)
Create employment opportunities for their skills base (2)
Food aid schemes can provide people with a temporary solution to a shortage of food (2)
Community food gardens increases daily access to food, without people having to buy food (2)
Convert from subsistence to commercial farming (2)
Invest in research to improve crops and adapt to climate change (2)
Regulate food prices to ensure accessibility (2)
Use of organic farming practices to protect soil (2)
Water and drought management/expand irrigation schemes to ensure sustainable supply of water (2)

Promote the growth of industries to process more food (2)
Reducing food wastage will ensure that there is more food available (2)

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Strict laws to prevent price fixing will provide access to food for poorer people (2)
Food fortification - nutrients are added to basic food such as bread and maize to increase its nutrient value (2)
Zero rating (Vat exemption) of more basic food to increase accessibility (2)
Store surplus yield so that in an event of a natural disaster, people will have access to the surplus yield that was stored (2)
[ANY FOUR] (4 x 2) (8)

3.6 3.6.1 Kwa-Zulu-Natal (Accept KZN) (1) (1 x 1) (1)

3.6.2 Bayside Aluminium (1)
Hillside Aluminium (1)
Richards Bay Minerals (RBM) (1)
Mondi paper (1)
IQF fertiliser (1)
Sugar mill (1)
[ANY TWO] (2 x 1) (2)

3.6.3 Many smelter factories in the area (2)
Raw materials needed for the manufacturing industry are nearby (2)
Availability of cheap electricity due to nearby coal fields (2)
Availability of a labour force (2)
Well-equipped harbour to export large amounts of manufactured products (2)
Good rail and road networks to the PWV and Durban-Pinetown regions (2)
Large amounts of available land for industries (2)
Access to a large supply of water (2)
Demand for heavy machinery by local industries (2)
Accessibility to international markets (2)
Break-of-bulk point (2)
[ANY TWO] (2 x 2) (4)

3.6.4 Employment opportunities created in industries, infrastructure development (2)
Earning potential increases (2)
Buying power of locals increases/Multiplier effect (2)
Poverty is reduced (2)
Accessibility to more and better services (accept examples) (2)
Standard of living improves (2)
Access to better infrastructure (accept examples) (2)
Skills uplifted (2)
Fourth- industrial revolution skills- (technology, computer) (2)
Enhancing innovative ideas (2)
Research and entrepreneurial development (can give examples like vendors, tuck shops, car guards, etc.) (2)
Better communication between companies and local technicians (2)
Social responsibility programs (e.g. study bursaries)
Gives opportunities for the local community to cater for the tourist market (2)
[ANY TWO] (2 x 2) (4)

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3.6.5 It has a well-developed transport network- rail, sea and road (2)
Minimum traffic congestion issues (2)
Cheaper labour costs on outskirts as compared to core industrial areas (2)
Established deep port harbour will facilitate trade (export and imports) (2)
High quality local municipality services provided (2)
Adequate supply of power from nearby coal fields (2)
Close to international airport (2)
Good telecommunication network (2)
Break-of-bulk point (2)
[ANY TWO] (2 x 2) (4)

[75]

QUESTION 4

4.1 4.1.1 A (1)

4.1.2 B (1)

4.1.3 B (1)

4.1.4 A (1)

4.1.5 A (1)

4.1.6 A (1)

4.1.7 B (1) (7 x 1) (7)

4.2 4.2.1 D (1)

4.2.2 G (1)

4.2.3 A (1)

4.2.4 I (1)

4.2.5 B (1)

4.2.6 C (1)

4.2.7 F (1)

4.2.8 E (1) (8 x 1) (8)

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4.3 4.3.1 (a) Transition zone (1)
(Accept zone of decay) (1)
(Accept light industry) (1)
[ANY ONE] (1 x 1) (1)

(b) Mixed functions (accept examples e.g. light industries, residential areas, ware houses) (1)
Dilapidated buildings (1)
High land values (1)
Social evils are rife e.g. prostitution, drug trafficking, etc. (1)
Illegal occupancy of buildings by unemployed persons (1)
Graffiti on walls (1)
Buildings used for functions other than their original function (brownfields) (1)
Invasion and succession of the CBD (1)
Overcrowded conditions (1)
Informal traders (1)
Close to the CBD (1)
Light industries are found in the transition zone (1)
Light industries occupies small amount of space (1)
Light industries are not associated with pollution (1)
Light industries use light raw materials (1)
Light industries are close to the market as perishable goods are being manufactured (1)
[ANY TWO] (2 x 1) (2)

(c) Close to local market (CBD) (2)
Does not require large spaces (2)
Light industries can occupy multi-storey buildings (2)
Produces less air, water and water pollution (2)
Close to labour force (2)
[ANY ONE] (1 x 2) (2)

(d) <u>Applicable to both the Transition zone and light industry:</u>
Land use zone **A** is the area of future expansion of the CBD which has high land values (2)
Land use zone **A** is close to the CBD therefore the demand for this land will increase in the future (2)
Competition for land increases the land value (2)
[ANY ONE] (1 x 2) (2)

4.3.2 Next to recreational area (2)
On the outskirts of urban area (2)
Away from industries (2)
Large dwellings (2)
Evidence of gardens (2)
Different architectural designs (2)
Near the greenbelt (aesthetic beauty) (2)
[ANY TWO] (2 x 2) (4)

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4.3.3 Air pollution in zone **C** would discourage higher income housing at **B** (2)
Noise pollution in zone **C** would discourage higher income housing at **B** (2)
Zone **C** would take away the aesthetic appeal of zone **B** (2)
Zone **C** requires abundant and cheap land while the land values at zone **B** is high (2)
C will lower the property values of **B** (2)
[ANY TWO] (2 x 2) (4)

4.4 4.4.1 When people occupy land illegally/When people live in self-constructed structures, that is made up of any available material (1)
[CONCEPT] (1 x 1) (1)

4.4.2 Nature of construction material used (1)
Spacing among structures (1)
Emergency accessibility challenges (1)
Human behaviour (1)
[ANY TWO] (2 x 1) (2)

4.4.3 People light fires, use paraffin heaters etc. (to keep warm) which are highly flammable (2)
Increased use of paraffin/gas stoves (2)
Increased use of coal or wood to make open fires (2)
Illegal electricity connections (2)
Negligence when using open fires (2)
Material used to make fires stored around shacks (2)
Increased use of candles to generate light (2)
[ANY TWO] (2 x 2) (4)

4.4.4 Provide safer electricity /solar panels to these settlements (2)
Provide proper infrastructure so that emergency personnel can promptly attend to fires (accept examples) (2)
Provide regular policing services to monitor illegal connections (2)
Establish community forums to assist in case of fires (2)
Increased access to potable (clean) water (2)
Create safe after-care places to ensure safety and supervision of children (2)
Access to community halls in case of emergency (2)
Demarcate specific plots for people to settle so that there is space between houses (2)
Build formal brick houses (2)
Increased awareness programs (2)
Install fire hydrants (2)
[ANY FOUR] (4 x 2) (8)

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4.5 4.5.1 Eastern Cape (1)
(Accept EC) (1) (1 x 1) (1)

4.5.2 Automotive industry /motor vehicle industry /assembly of motor vehicles (1)
(1 x 1) (1)

4.5.3 Natural bay seaport (harbour) (1)
It has a more central location as compared to the other core industrial areas to reach the northern and southern parts of South Africa (1)
Covering an area of 1957,6km² (1)
Located in the wetter eastern half of the country (1)
[ANY TWO] (2 x 1) (2)

4.5.4 Large labour force (2)
Availability of a market (2)
Large buying power (2)
[ANY ONE] (1 x 2) (2)

4.5.5 Provides sustainable employment for local residents (2)
Increased earnings will benefit local businesses (2)
Improved infrastructure associated with industries will boost other economic activities in the area (2)
Export of vehicles increases foreign exchange (2)
Industries will contribute to local economic growth (2)
Taxes paid by the industry contributes to regional income (2)
Provides market for raw materials to increase production (2)
Export of products increases foreign exchange (2)
Multiplier-effect stimulates other sectors of the local economy (2)
Results in the upskilling of people which will increase quality and output (2)
Fourth-industrial revolution skills e.g. robotics will increase efficiency in the workplace (2)
[ANY TWO] (2 x 2) (4)

4.5.6 Lack of minerals and raw materials (2)
Lack of minerals to beneficiate (2)
Water shortages due to no supplementation by water schemes (2)
Shortage of skilled labour force (2)
Less tertiary activities and services (2)
No administrative capital advantage (2)
Poorer infrastructure compared to PWV (2)
Smaller market in PE-Uitenhage (2)
Electricity is more expensive (2)
Less capital investment in PE-Uitenhage region (2)
[ANY TWO] (2 x 2) (4)

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4.6 4.6.1 Small business enterprises that are not registered with SARS/Government entities/ for tax purposes (1)
[CONCEPT] (1 x 1) (1)

4.6.2 Ban street trading (1)
Fine offenders R5 000 without an option of jail (1)
Facial expression/Body language of the minister (1)
[ANY ONE] (1 x 1) (1)

4.6.3 Taking business away from formal businesses (2)
Clutter formal business areas (2)
Informal businesses tend to be untidy, causing litter and have potential health hazards (2)
They are unsightly and spoil the aesthetics of the area (2)
They tend to be associated with high levels of noise (2)
Hinder movement of pedestrians on pavement (2)
Don't contribute formally to the tax base/They are not registered (2)
Its associated with crime (2)
They discourage people from supporting formal businesses (2)
They deal in counterfeit products (2)
[ANY ONE] (1 x 2) (2)

4.6.4 Gives them an income to support their families (2)
It reduces poverty (2)
Major source of employment (2)
Develop entrepreneurial skills (2)
Reduces the dependency on social grants because the vendors are independent (2)
To improve their standard of living (2)
Promotes food security (2)
Able to establish relationships with formal businesses (2)
They have flexible trading hours (2)
Convenience of working from home (2)
Do not require large amounts of capital to start the business (2)
Not necessary to apply for permits therefore cutting down on costs (2)
Do not have to comply with trade regulations (2)
[ANY TWO] (2 x 2) (4)

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4.6.5 This sector is not regulated (own boss) (2)
Poor legislation to guide/provides rules for this sector (2)
This sector does not pay taxes to SARS (2)
Goods that are sold are cheap and affordable (2)
Goods are not SABS approved (knockoffs) (2)
Lack of employment in the formal sector forces people to look for employment in the informal sector (2)
Rural-urban migration leads to a decrease in employment opportunities (Push factors) (2)
Slump in the South African economy causes large scale retrenchments (2)
Technology has taken the place of workers in most industries (2)
Increasing cost of urban life forces people to look for extra sources of income in the informal sector (2)
Businesses in the formal sector sub-contract people from the informal sector creating a demand for informal trader (2)
Many foreigners cannot be permanently employed in the formal sector and the informal sector is the only opportunity for them to find employment (2)
Social grants inadequate to meet the needs of the people therefore this supplements income (2)
Lack of skills and finance to educate themselves (2)
Difficulty in securing funding for formal business (2)
Informal businesses are easier to start up (2)
Convenience of working from home reduces costs of renting premises (2)
Do not require large amounts of capital to start the business (2)
No need to apply for permits therefore less bureaucracy (red tape) (2)
Do not have to comply with trade regulations (2)
[ANY FOUR] (4 x 2) (8)

[75]

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basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS/ NATIONAL SENIOR CERTIFICATE EXAMINATIONS

GEOGRAPHY P1

2019

MARKS: 225

TIME: 3 hours

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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.

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SECTION A: CLIMATE, WEATHER AND GEOMORPHOLOGY

Answer at least ONE question in this section.

QUESTION 1

1.1 Refer to FIGURE 1.1 showing a cross-section of a tropical cyclone. Choose the correct word(s) from those given in brackets to make the statements TRUE. Write only the word(s) next to the question numbers (1.1.1 to 1.1.7) in the ANSWER BOOK.

1.1.1 Cloud **A** is a (cumulus/cumulonimbus) cloud.

1.1.2 The updrafts at **B** are caused by (convection/advection) currents.

1.1.3 Area **C** is named the (eye/eye wall).

1.1.4 The atmospheric condition experienced at **C** is (stable/unstable)

1.1.5 **D** indicates an area of (divergence/convergence).

1.1.6 **E** will experience (light rain/thunderstorms).

1.1.7 Ocean **F** is likely (warm/cold). (7 x 1) (7)

1.2 Choose a term from COLUMN B that matches the description of a fluvial landform in COLUMN A. Write only the letter (A–I) next to the question numbers (1.2.1 to 1.2.8) in the ANSWER BOOK, e.g. 1.2.9 J.

COLUMN A		COLUMN B	
1.2.1	A meander loop that is cut off from the main river	A	braided stream
1.2.2	The naturally raised banks of a river	B	delta
1.2.3	Forms when a river deposits its load and blocks its own path	C	undercut slope
1.2.4	Creates rough, turbulent water because of an uneven river bed	D	meander
1.2.5	Develops at the river mouth where deposition takes place	E	leveé
1.2.6	Vertical cliff where underlying soft rock is eroded away by plunging water	F	waterfall
1.2.7	Type of slope that forms on the outer bank of a meander	G	oxbow lake
1.2.8	Refers to a curve or bend along the course of a river	H	rapids
		I	slip-off slope

(8 x 1) (8)

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1.3 FIGURE 1.3 is a synoptic weather map.

1.3.1 Name anticyclone **A**. (1 x 1) (1)

1.3.2 What evidence indicates that **A** is an anticyclone? (1 x 2) (2)

1.3.3 Why is anticyclone **A** generally associated with fog along the west coast of South Africa? (1 x 2) (2)

1.3.4 Why do anticyclones **A** and **B** migrate (move) northwards during winter in South Africa? (2 x 2) (4)

1.3.5 How will the movement of mid-latitude cyclone **C** be influenced by anticyclone **B**? (1 x 2) (2)

1.3.6 Explain how anticyclone **B** influences rainfall conditions along the east coast of South Africa in winter. (2 x 2) (4)

1.4 Study FIGURE 1.4 showing valley climates.

1.4.1 Does wind **B** occur during the day or at night? (1 x 1) (1)

1.4.2 Match the types of precipitation (radiation fog and frost) with the statements below:

(a) Formed when dew point temperature drops below freezing point on the valley floor (1 x 1) (1)

(b) Formed when temperature drops below dew point in the lower section of the valley (1 x 1) (1)

1.4.3 How does wind **B** create an inversion in the valley? (2 x 2) (4)

1.4.4 In a paragraph of approximately EIGHT lines, outline the negative impact of these forms of precipitation (radiation fog or frost) on humans. (4 x 2) (8)

1.5 Drainage patterns are indicated in FIGURE 1.5.

1.5.1 What is a *drainage pattern*? (1 x 1) (1)

1.5.2 Describe the dendritic drainage pattern. (1 x 2) (2)

1.5.3 State ONE visible difference between the tributaries of a dendritic and a trellis drainage pattern. (2 x 2) (4)

1.5.4 Give the underlying rock structure of a dendritic and a trellis drainage pattern. (2 x 2) (4)

1.5.5 Explain why a dendritic drainage pattern is more suitable for farming. (2 x 2) (4)

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1.6 FIGURE 1.6 shows river rejuvenation.

1.6.1 What type of erosion is associated with river rejuvenation? (1 x 1) (1)

1.6.2 What evidence indicates that river rejuvenation has taken place? (1 x 1) (1)

1.6.3 Identify the force of upliftment associated with rejuvenation. (1 x 1) (1)

1.6.4 Why is rejuvenated land not suitable for human activity? (2 x 2) (4)

1.6.5 In a paragraph of approximately EIGHT lines, explain how rejuvenation could change the fluvial features downstream of the point of rejuvenation. (4 x 2) (8)

[75]

QUESTION 2

2.1 Refer to FIGURE 2.1 showing the distribution of temperature over an urban area. Choose the correct word(s) from those given in brackets to make each of the statements TRUE. Write only the word(s) next to the question numbers (2.1.1 to 2.1.8) in the ANSWER BOOK.

2.1.1 The lines representing temperature on the sketch are known as (isohyets/isotherms).

2.1.2 Area (**A**/**B**) consists of more artificial surfaces.

2.1.3 The temperature decreases from (**A** to **B**/**B** to **A**).

2.1.4 The general horizontal surface air movement will be from (**A** to **B**/ **B** to **A**).

2.1.5 The evaporation rate is higher in area (**A**/**B**).

2.1.6 There are more hygroscopic nuclei in area (**A**/**B**), therefore it will experience a greater cloud cover.

2.1.7 Transpiration is higher in area (**A**/**B**).

2.1.8 Area (**A**/**B**) is likely to experience more precipitation. (8 x 1) (8)

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2.2 Choose a term from COLUMN B that matches the description of the fluvial landform in COLUMN A. Write only the letter (A–H) next to the question numbers (2.2.1 to 2.2.7) in the ANSWER BOOK, e.g. 2.2.8 I.

COLUMN A		COLUMN B	
2.2.1	The point of origin of a river	A	watershed
2.2.2	High-lying area separating two drainage basins	B	floodplain
2.2.3	Where the tributaries join the main river	C	mouth
2.2.4	The flat area next to river	D	source
2.2.5	High-lying area between two tributaries	E	drainage basin
2.2.6	Point where the river flows into the ocean	F	catchment area
2.2.7	The area drained by a river system	G	interfluve
		H	confluence

(7 x 1) (7)

2.3 Refer to FIGURE 2.3 which illustrates two stages in the development of a mid-latitude cyclone.

2.3.1 State the hemisphere (north or south) in which the mid-latitude cyclone developed. (1 x 1) (1)

2.3.2 Give a reason for your answer to QUESTION 2.3.1. (1 x 1) (1)

2.3.3 Along which front does a mid-latitude cyclone develop? (1 x 1) (1)

2.3.4 State ONE difference between the cold sector and the warm sector. (2 x 2) (4)

2.3.5 Describe how an occlusion occurs. (2 x 2) (4)

2.3.6 Explain why it is suitable for outdoor activities to take place after the occlusion stage. (2 x 2) (4)

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2.4 FIGURE 2.4 is a representation of a coastal low and a berg wind.

2.4.1 Name the season represented in the diagram. (1 x 1) (1)

2.4.2 Give ONE reason for your answer to QUESTION 2.4.1. (1 x 1) (1)

2.4.3 Why is the wind visible in FIGURE 2.4, known as a berg wind? (1 x 1) (1)

2.4.4 Refer to the air movement represented by the arrows at **A** and **B**.

(a) Name the resultant local winds associated with a coastal low at point **A** and at point **B**. (2 x 1) (2)

(b) Why is the local wind at **A** associated with dry conditions? (1 x 2) (2)

(c) In a paragraph of approximately EIGHT lines, discuss the impact of the air movement from the Kalahari High to the coastal low on the physical (natural) environment of the West Coast regions of South Africa. (4 x 2) (8)

2.5 FIGURE 2.5 illustrates types of rivers.

2.5.1 Differentiate between a *permanent* and an *episodic river*. (2 x 1) (2)

2.5.2 Describe the position of the water table in the permanent river. (1 x 2) (2)

2.5.3 Discuss TWO factors that cause an episodic river. (2 x 2) (4)

2.5.4 In a paragraph of approximately EIGHT lines, suggest the impact of deforestation (vegetation removal) on a permanent river. (4 x 2) (8)

2.6 Refer to FIGURE 2.6 which shows different activities polluting water resources.

2.6.1 What is *river management*? (1 x 1) (1)

2.6.2 Name ONE way in which the factory pollutes the river. (1 x 1) (1)

2.6.3 Explain the importance of the wastewater treatment plant in river management. (2 x 2) (4)

2.6.4 State TWO ways in which fertilisers from the crop land can impact on the ecology of the river. (2 x 2) (4)

2.6.5 Outline the negative impact of water pollution on the economy of a country. (2 x 2) (4)

[75]

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

Answer at least ONE question in this section.

QUESTION 3

3.1 Refer to FIGURE 3.1 showing rural settlement patterns. Match the descriptions below with the rural settlement patterns **A** or **B**. Write only **A** or **B** next to the question numbers (3.1.1 to 3.1.8) in the ANSWER BOOK, e.g. 3.1.9 B.

3.1.1 A nucleated settlement pattern

3.1.2 Lacks privacy

3.1.3 Sharing of farming equipment

3.1.4 Safety and security risk

3.1.5 Fragmented (broken up) farm land

3.1.6 Far from basic services like shops and schools

3.1.7 Produces large yields

3.1.8 Requires large amounts of money to practise farming (8 x 1) (8)

3.2 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 numbers (3.2.1 to 3.2.7) in the ANSWER BOOK, e.g. 3.2.8 C.

3.2.1 The East London Industrial Development Zone (IDZ) is situated in the…

A Northern Cape.
B Western Cape.
C Free State.
D Eastern Cape.

3.2.2 The main mineral mined in the Phalaborwa SDI is …

A copper.
B platinum.
C gold.
D iron ore.

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3.2.3 The spatial development initiative (SDI) situated in Limpopo is the … SDI.

A Richards Bay
B Phalaborwa
C Saldanha Bay
D Platinum

3.2.4 In the Port Elizabeth-Uitenhage industrial region, the main industry is …

A fish processing.
B chemical manufacturing.
C motor vehicle assembly.
D oil refining.

3.2.5 Food processing is one of the main industries in the … industrial region.

A Western Cape
B PWV/Gauteng
C Durban-Pinetown
D Port Elizabeth-Uitenhage

3.2.6 The only landlocked industrial region is …

A the Western Cape.
B Port Elizabeth-Uitenhage.
C PWV/Gauteng.
D Durban-Pinetown.

3.2.7 The core industrial region that contributes the least to South Africa's GDP is the … industrial region.

A Western Cape
B Port Elizabeth-Uitenhage
C PWV/Gauteng
D Durban-Pinetown (7 x 1) (7)

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3.3 Refer to FIGURE 3.3, an extract on service provision as an urban settlement issue.

3.3.1 According to the FIGURE 3.3, what percentage of the population relies on public health care services? (1 x 1) (1)

3.3.2 Quote a statement from the extract about the state of health care in the public sector. (1 x 2) (2)

3.3.3 Explain why the provision of quality health care in urban areas is considered to be a social injustice. (2 x 2) (4)

3.3.4 In a paragraph of approximately EIGHT lines, discuss how service delivery in the public health care sector in urban areas could be improved. (4 x 2) (8)

3.4 Refer to FIGURE 3.4 showing a model of urban structure.

3.4.1 Identify the model of urban structure. (1 x 1) (1)

3.4.2 Which land-use zone covers the largest area in the illustrated model of urban structure? (1 x 1) (1)

3.4.3 Name ONE visible characteristic of the CBD. (1 x 1) (1)

3.4.4 Give ONE reason for the development of the outlying business district (**7**) on the outskirts of the city. (1 x 2) (2)

3.4.5 Refer to land-use zones **5** and **6**.

(a) Comment on the location of land-use zones **5** and **6** in relation to each other. (1 x 2) (2)

(b) Compatibility (ability to live or to exist together) determines the location of land-use zones in an urban area. Give reasons why **5** and **6** are not compatible. (2 x 2) (4)

3.4.6 What are the similarities between the South African city and the model identified in FIGURE 3.4.1? (2 x 2) (4)

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3.5 Refer to FIGURE 3.5 showing the West Coast Spatial Development Initiative (SDI).

3.5.1 What is a *spatial development initiative*? (1 x 1) (1)

3.5.2 Name the port associated with the West Coast SDI. (1 x 1) (1)

3.5.3 Name ONE manufacturing industry in the West Coast SDI. (1 x 1) (1)

3.5.4 Discuss TWO physical factors that favoured the development of the SDI on the West coast. (2 x 2) (4)

3.5.5 Write a paragraph of approximately EIGHT lines to explain how the West Coast SDI uplifts the local community. (4 x 2) (8)

3.6 Refer to FIGURE 3.6 showing the role of international trade in economic development.

3.6.1 What is the purpose of international trade*?* (1 x 1) (1)

3.6.2 Quote from the extract why international trade is growing rapidly. (1 x 2) (2)

3.6.3 According to the extract, global trade contributes to the reduction of poverty. Explain this statement. (2 x 2) (4)

3.6.4 Explain how distance from major trading partners restricts South Africa from competing in world markets. (2 x 2) (4)

3.6.5 Explain how international trade can limit local production in a country. (2 x 2) (4)

[75]

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QUESTION 4

4.1 Match each of the descriptions below with either a high-order or a low-order central place. Write only 'high-order central place' or 'low-order central place' next to the question numbers (4.1.1 to 4.1.7) in the ANSWER BOOK, e.g. 4.1.8 high-order central place.

4.1.1 This central place offers a wide variety of functions

4.1.2 A low threshold population is associated with this central place

4.1.3 A larger sphere of influence is evident in this central place

4.1.4 According to the urban hierarchy, this central place is in the majority

4.1.5 A conurbation is an example of this type of central place

4.1.6 There is a smaller range in this central place

4.1.7 Specialised services, like universities and art galleries, are found in this type of central place (7 x 1) (7)

4.2 Various options are provided as possible answers to the following questions. Choose the correct economic concept to answer the statements. Write down only the letter (A–D) next to the question numbers (4.2.1 to 4.2.8), e.g. 4.2.9 C.

4.2.1 Transport is an example of the … sector.

A primary
B secondary
C tertiary
D quaternary

4.2.2 The … sector is linked to research and development.

A primary
B secondary
C tertiary
D quaternary

4.2.3 The value of goods and services produced within the boundaries of a country is its …

A gross domestic product.
B balance of payment.
C gross national product.
D balance of trade.

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4.2.4 Products that are sold overseas, are sold on the … market.

A import
B export
C home
D national

4.2.5 Value-added goods are produced in the … sector.

A primary
B secondary
C tertiary
D quaternary

4.2.6 Sugar cane farming is an example of … farming.

A small-scale commercial
B small-scale subsistence
C large-scale commercial
D large-scale subsistence

4.2.7 When an industry is situated close to a mineral source, it is known as a/an … industry.

A raw-material orientated
B market orientated
C break-of-bulk point
D ubiquitous

4.2.8 The process whereby industries migrate from core industrial regions to peripheral industrial regions:

A Centralisation
B Commercialisation
C Agglomeration
D Decentralisation (8 x 1) (8)

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4.3 Read the extract in FIGURE 4.3 referring to the effects of rural depopulation.

4.3.1 Define the term *rural depopulation*. (1 x 1) (1)

4.3.2 Quote TWO pieces of evidence from the passage that indicates the social effects of rural depopulation. (2 x 1) (2)

4.3.3 'Farms get bigger, while less manpower is needed'.

(a) Suggest ONE possible reason why farms get bigger. (1 x 2) (2)

(b) Discuss how 'bigger farms' could increase rural depopulation. (1 x 2) (2)

4.3.4 In a paragraph of approximately EIGHT lines, explain how land reform could reduce rural depopulation in South Africa. (4 x 2) (8)

4.4 Study FIGURE 4.4, a photograph showing an informal settlement (**A**).

4.4.1 What is an *informal settlement*? (1 x 1) (1)

4.4.2 State TWO basic needs that people who live in most informal settlements do not have easy access to. (2 x 1) (2)

4.4.3 State TWO ways in which the appearance of informal settlement differs from the appearance of the formal settlement at **B**. (2 x 1) (2)

4.4.4 Name TWO factors that influenced the location of this informal settlement. (2 x 1) (2)

4.4.5 Explain how the people living in **A** can benefit from settlement **B**. (2 x 2) (4)

4.4.6 Discuss possible solutions that the local municipality can provide to reduce the growth of settlement **A**. (2 x 2) (4)

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4.5 Refer to FIGURE 4.5, an infographic on maize farming in South Africa.

4.5.1 Why does South Africa have to export maize? (1 x 1) (1)

4.5.2 In which years did South Africa experience its lowest and highest maize production? (2 x 1) (2)

4.5.3 Suggest a possible reason for the demand for South African maize by foreign countries. (1 x 2) (2)

4.5.4 The trend shown in the infographic is an erratic (inconsistent) production of maize over the years. Give a possible reason for this trend. (1 x 2) (2)

4.5.5 Explain what impact low maize production can have on the economy of South Africa. (2 x 2) (4)

4.5.6 Suggest possible strategies that the South African government could adopt to ensure a more stable production of maize. (2 x 2) (4)

4.6 FIGURE 4.6 is an article about the Durban-Pinetown Industrial Region.

4.6.1 Where would you rank Durban-Pinetown in terms of industrial output in South Africa? (1 x 1) (1)

4.6.2 Quote evidence from the passage to show that secondary economic activities make a big contribution to the GDP. (1 x 1) (1)

4.6.3 Which word in the article describes the significant role of the manufacturing sector in KwaZulu-Natal's economic growth? (1 x 1) (1)

4.6.4 Discuss reasons why the Durban-Pinetown Industrial Region is ideal for the ship building and repair industry. (2 x 2) (4)

4.6.5 In a paragraph of approximately EIGHT lines, discuss the positive impact of the Durban-Pinetown Industrial Region on the economic development in KwaZulu-Natal. (4 x 2) (8)

[75]

TOTAL: 225

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SENIOR CERTIFICATE EXAMINATIONS/
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GEOGRAPHY P1

2019

ANNEXURE

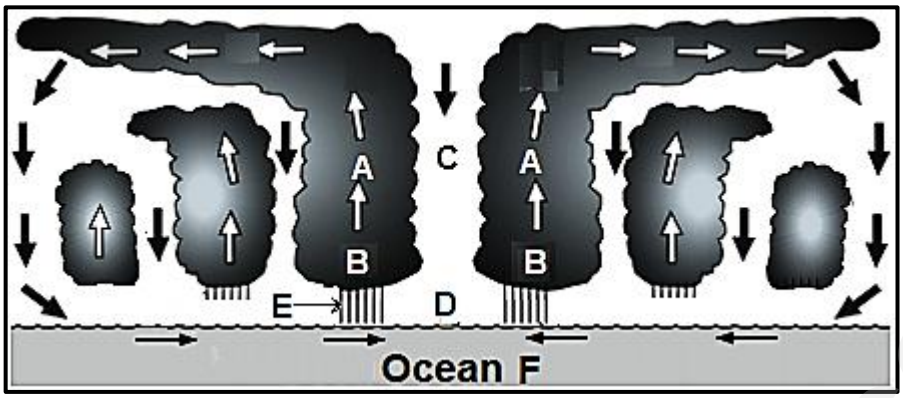
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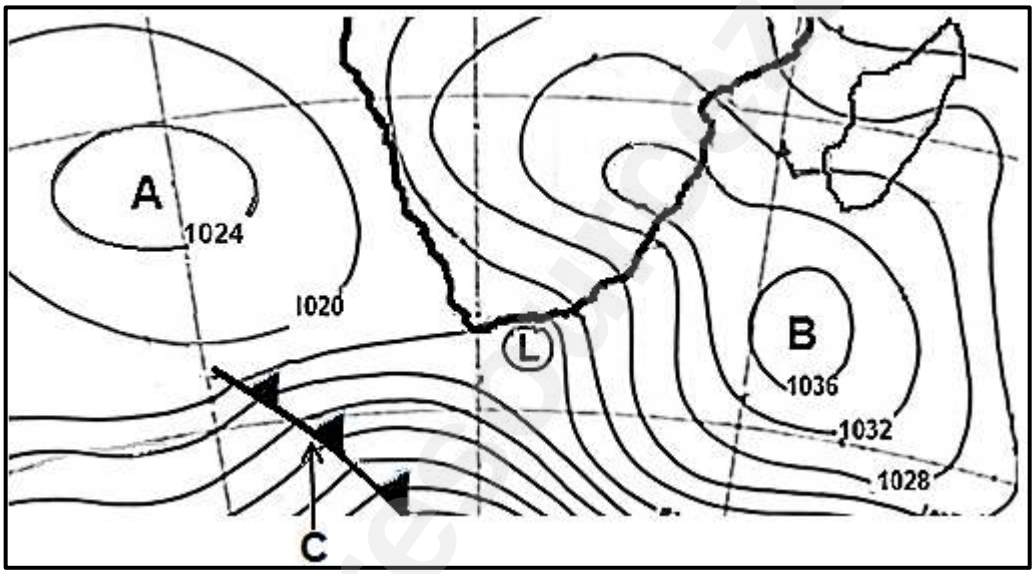
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FIGURE 1.1: CROSS-SECTION OF A TROPICAL CYCLONE



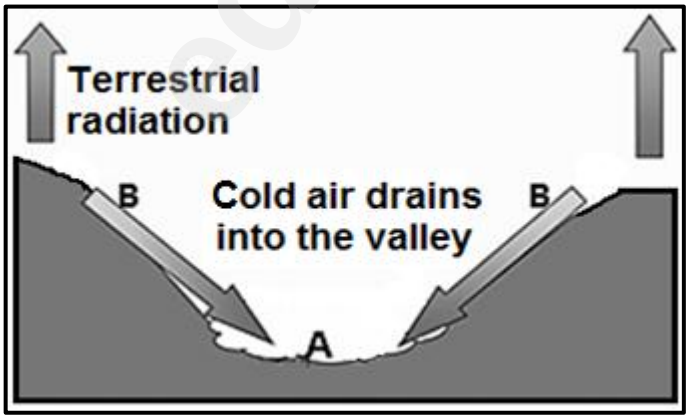
[Source: https://www.google.com/search?q=tropical+cyclones&tbm=isch&source]

FIGURE 1.3: A SYNOPTIC WEATHER MAP



[Source: South African Weather Services]

FIGURE 1.4: VALLEY CLIMATES

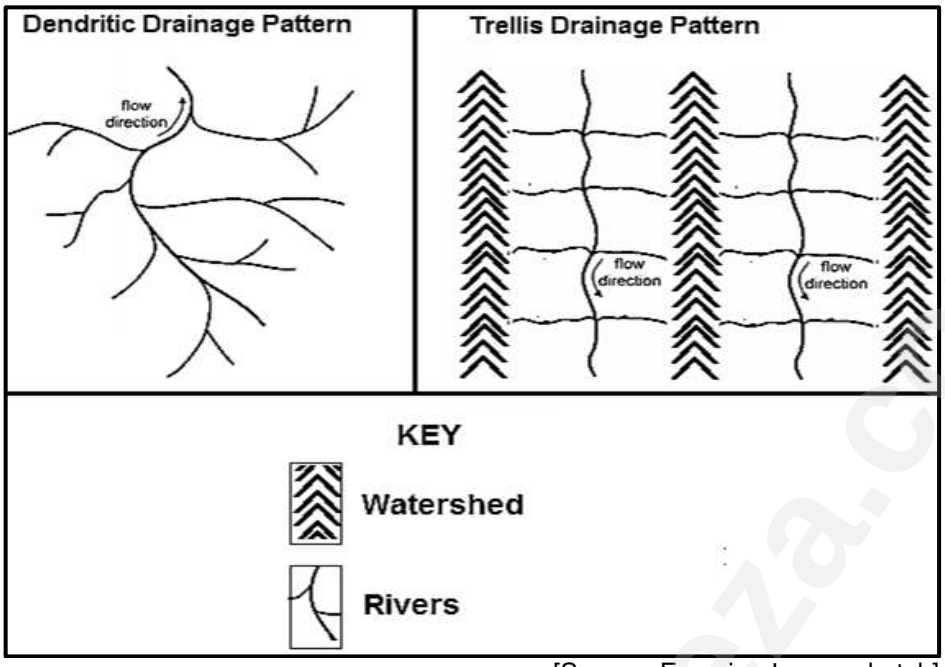


[Source: https://www.google.com/search?q=radiation+fog+and+frost+in+a+valley&source]

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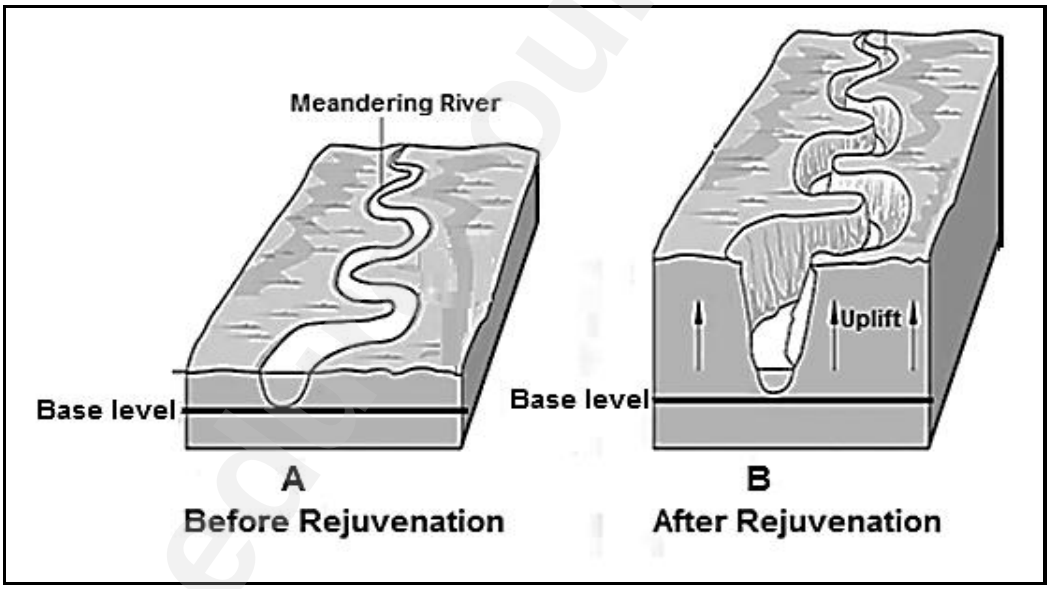
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FIGURE 1.5: DRAINAGE PATTERNS



[Source: Examiner's own sketch]

FIGURE 1.6: RIVER REJUVENATION

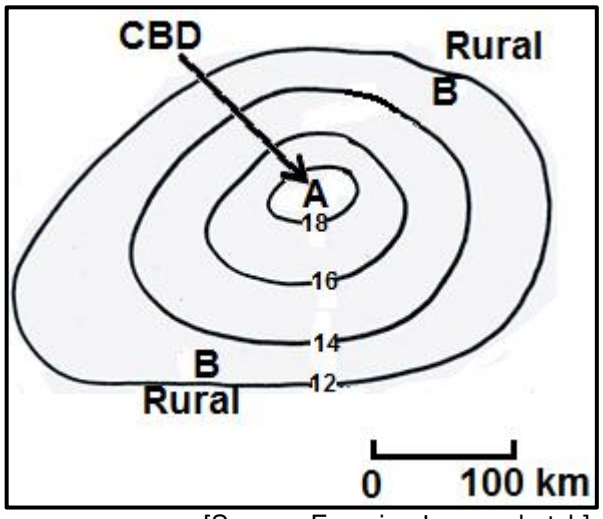


[Adapted from https://www.google.com/search?q=rejuvenation+of+rivers:]

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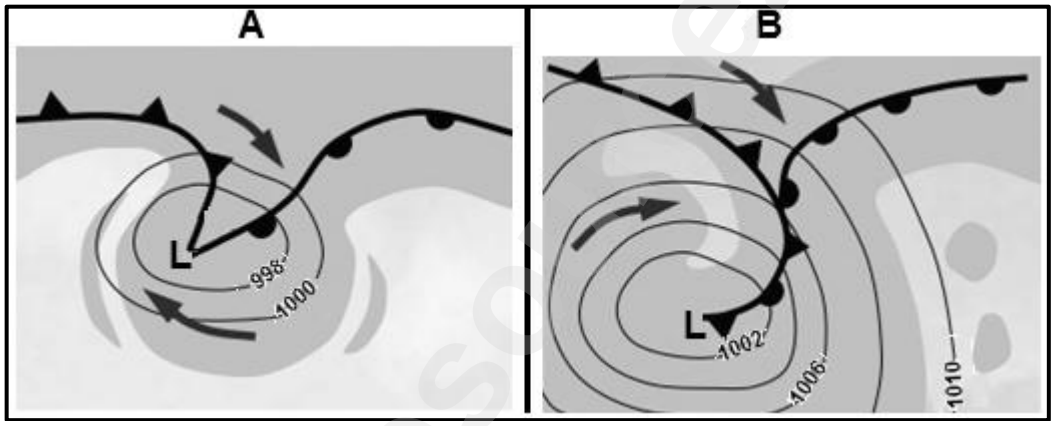
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FIGURE 2.1: DISTRIBUTION OF TEMPERATURE OVER AN URBAN AREA



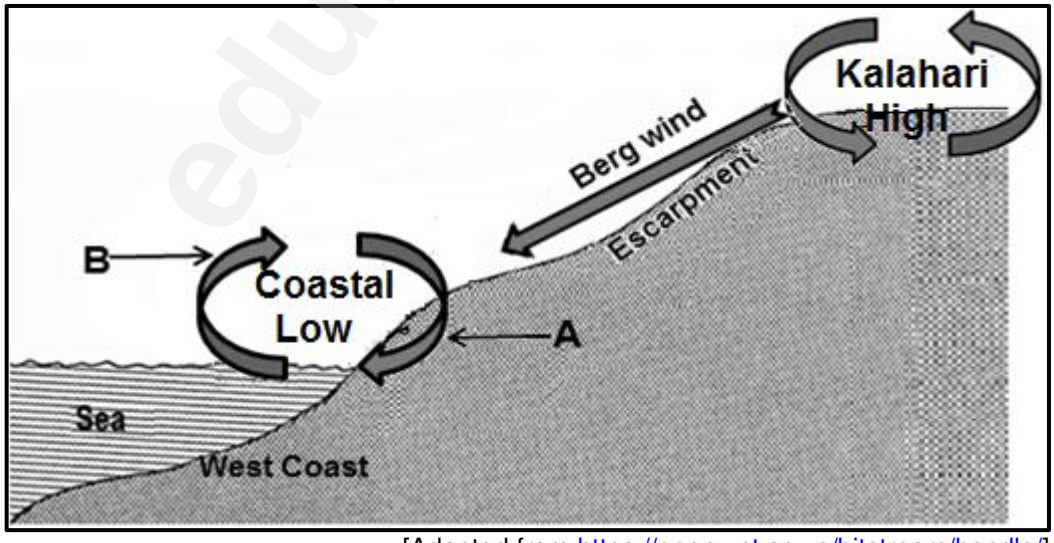
[Source: Examiner's own sketch]

FIGURE 2.3: TWO STAGES IN THE DEVELOPMENT OF A MID-LATITUDE CYCLONE



[Adapted from https://www.slideshare.net/aikyatha/fronts-and-midlatitude-cyclones]

FIGURE 2.4: COASTAL LOW AND A BERG WIND



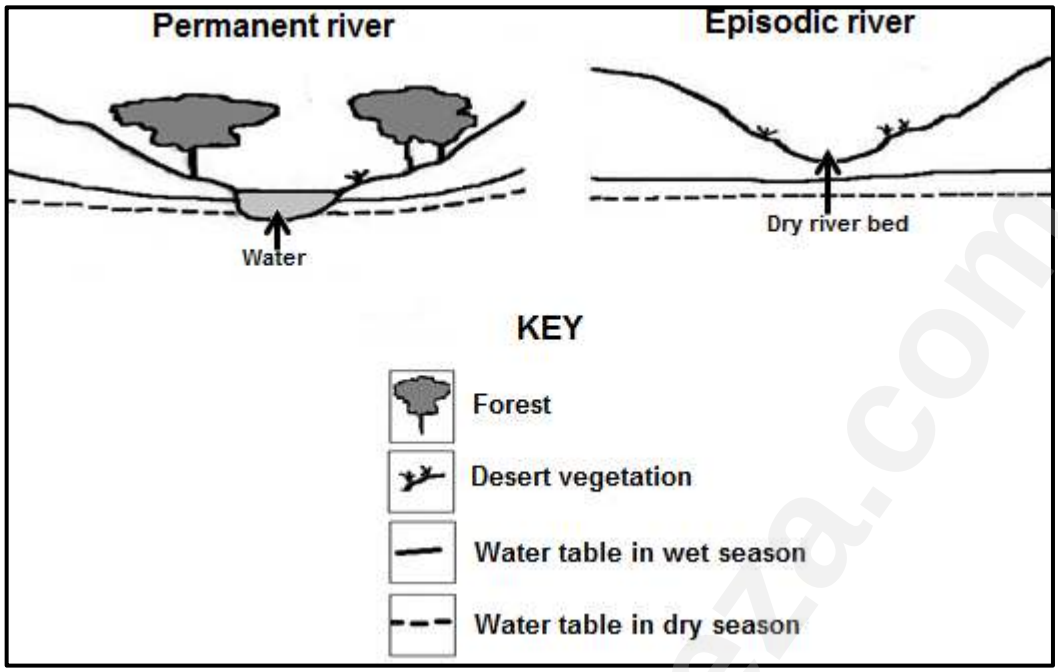
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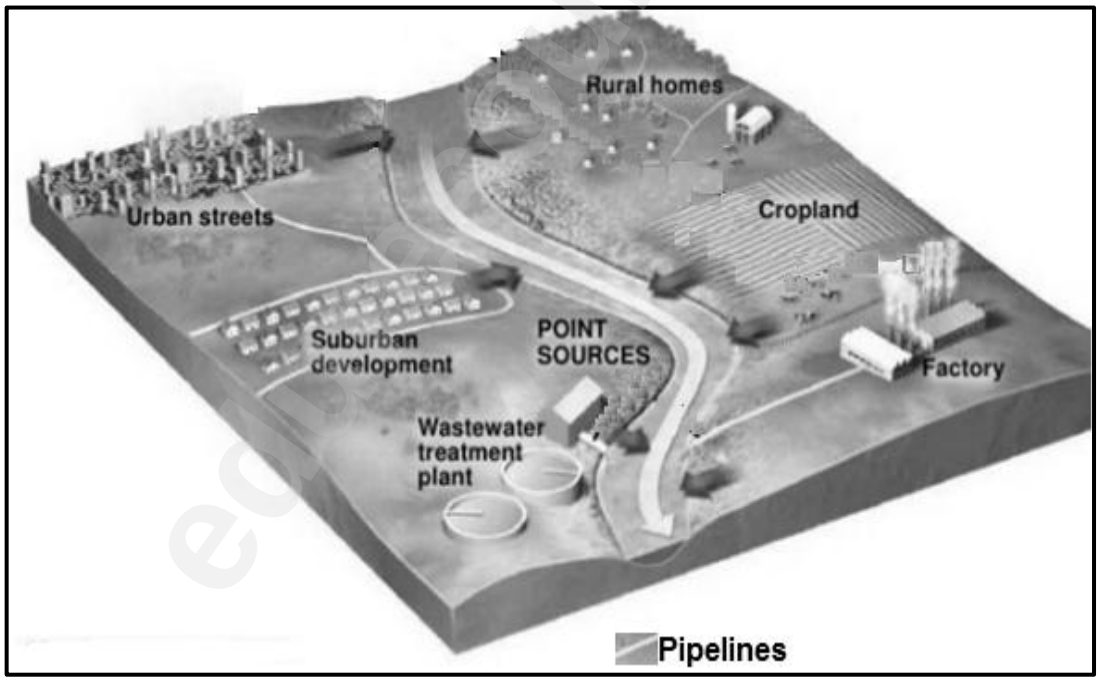
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FIGURE 2.5: TYPES OF RIVERS



[Adapted by geology-lecture-16-19-638.jpg-]

FIGURE 2.6: DIFFERENT ACTIVITIES POLLUTING WATER RESOURCES



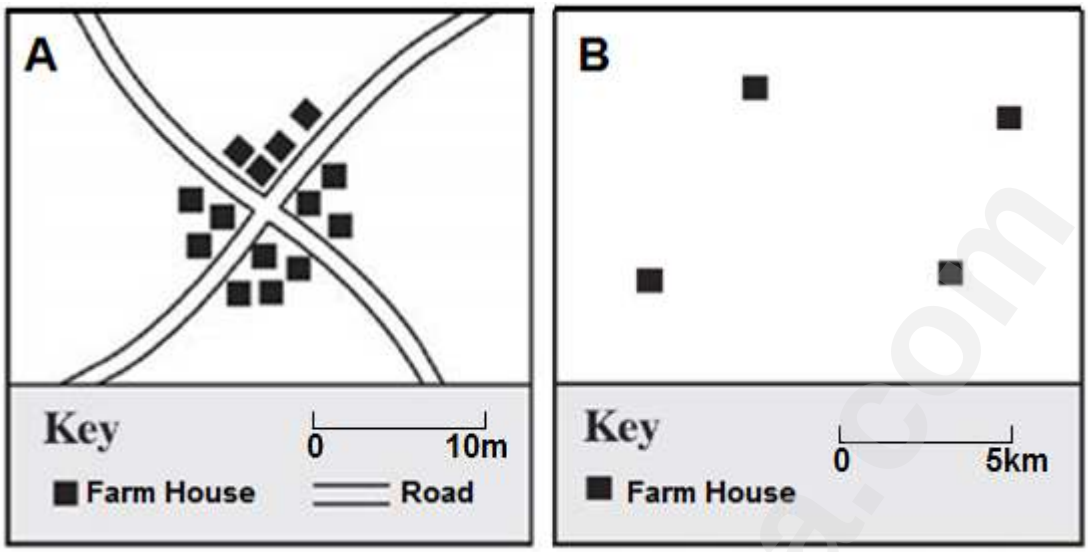
[Source: https://www.google.com/search?q=how+industries+pollute+water&source]

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FIGURE 3.1: RURAL SETTLEMENT PATTERNS



[Source: https://www.slideshare.net/xksinz/settlement-patterns]

FIGURE 3.3: SERVICE PROVISION AS AN URBAN SETTLEMENT ISSUE

LACK OF SERVICES: HEALTH CARE

There is a huge gap between private and public health care in South Africa. For most South Africans the quality of health care is inadequate.

This is reflected in the following data. Though 84% of South Africa's population, or 50 million people, rely on public health care, only 30% of the nation's doctors work at public hospitals. Private health care applies to 8 million people but this small minority employs 70% of the doctors.

Expenditures on health care reveal that ten times more money is spent on the private sector than on the public sector.

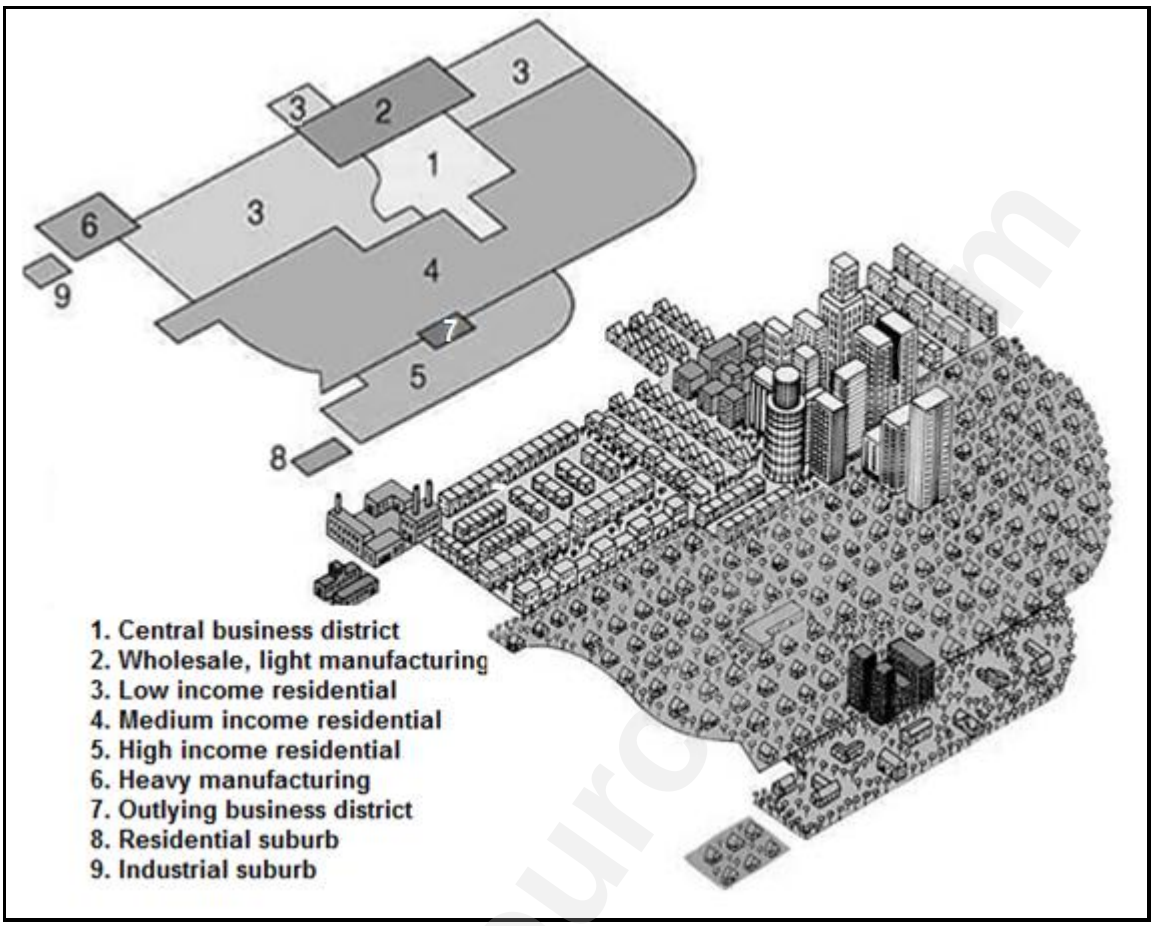
[Adapted from https://borgenproject.org/healthcare in south africa/]

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FIGURE 3.4: A MODEL OF URBAN STRUCTURE

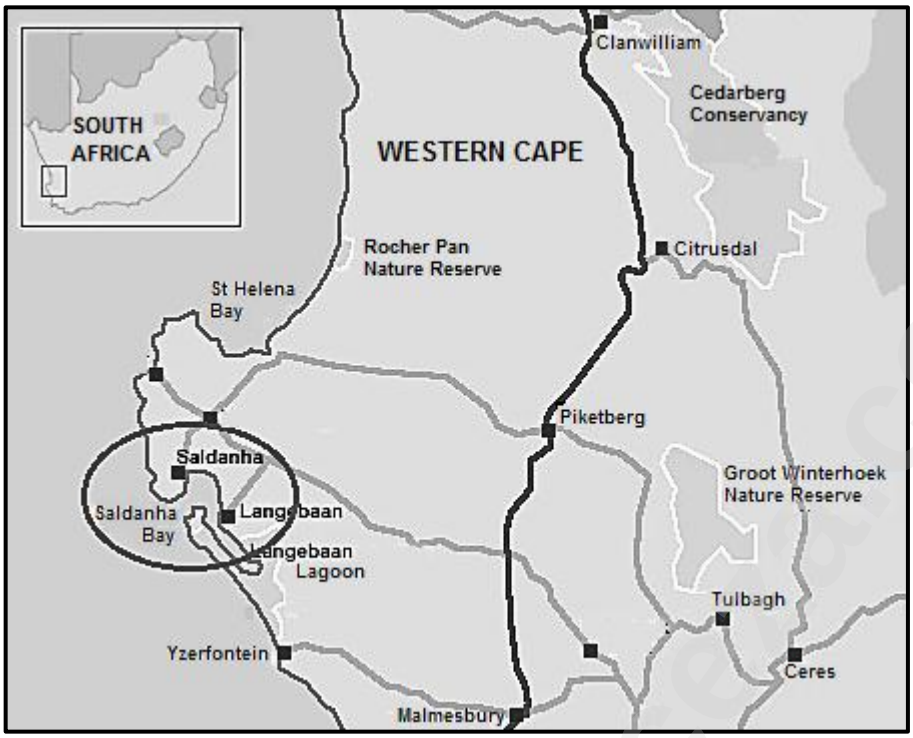


[Source: https://planningtank.com/settlement-geography/model]

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FIGURE 3.5: WEST COAST SDI



[Adapted from http://www.eyesonafrica.net/cntry-imgs/westcst_imgs/west-coast-upd_r12_c4.jpg]

FIGURE 3.6: ROLE OF INTERNATIONAL TRADE IN ECONOMIC DEVELOPMENT

BENEFITS OF INTERNATIONAL TRADE IN AN ECONOMY

The purpose of international trade is to allow countries to exchange their goods and services with other countries.

Countries with the strongest international trade practices have become prosperous (well-off) and have the power to control the world economy. It is a fact that global trade can become one of the major contributors to the reduction of poverty.

International trade accounts for a good part of many developing countries' revenue, positively affecting their gross domestic product. International trade is growing at a rapid rate due to some of the following reasons: use of modern production techniques; highly advanced transportation systems and outsourcing (contract out) of manufacturing and services.

[Adapted from http://www.ariafilalo.com/blog/benefits-international-trade-economy/]

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FIGURE 4.3: THE EFFECTS OF RURAL DEPOPULATION

WHAT ARE THE EFFECTS OF RURAL DEPOPULATION IN RURAL AREAS?

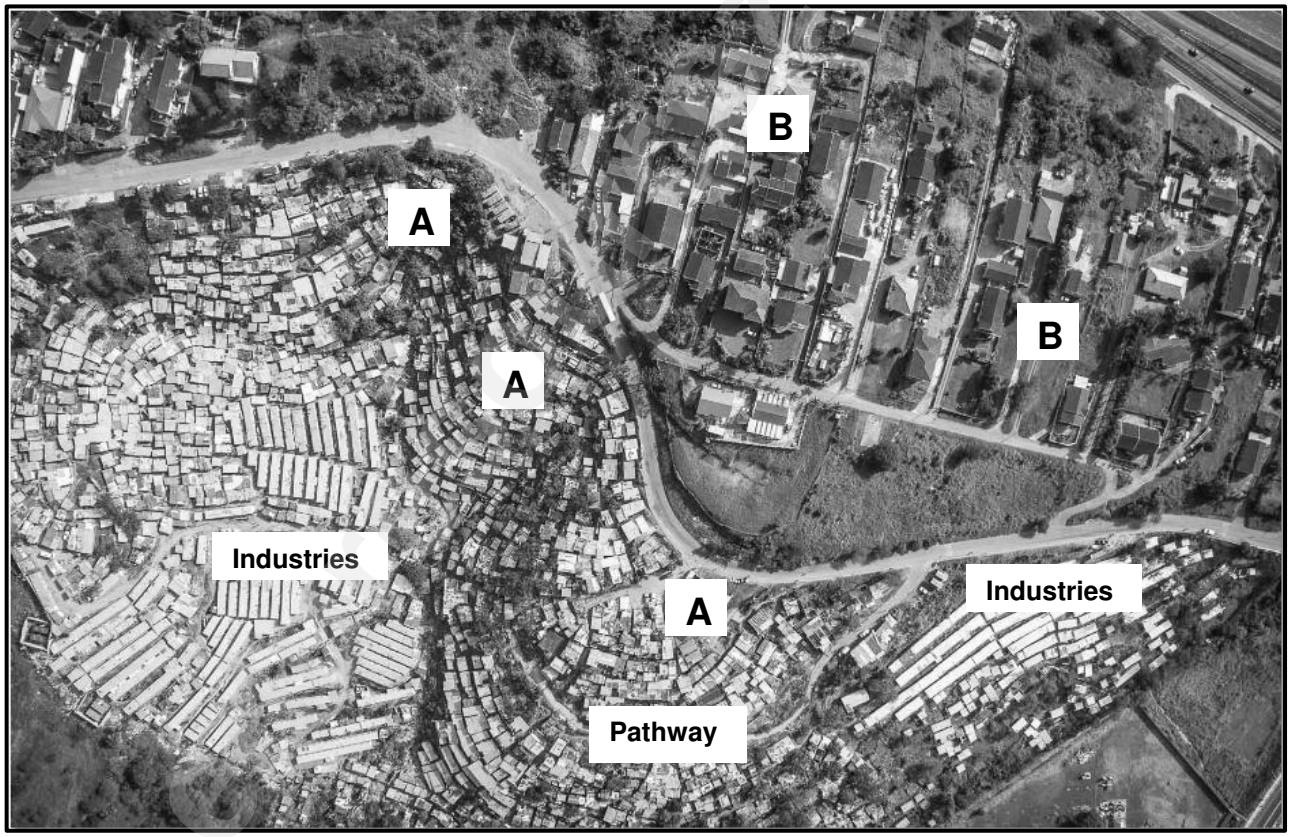
By Peter Balin

There used to be 13 farms with families within 1 km of me. Now there are five farms, with four of them housing only one resident.

As towns depopulate and stores leave, you have to travel further for necessities. I could fill a page listing the stores we used to have in our town and now they are just about all gone. The churches decline because of population decline, the schools consolidate and communities lose their identity. Farms get bigger while less manpower is needed.

[Adapted from www.quora.com]

FIGURE 4.4: PHOTOGRAPH SHOWING AN INFORMAL SETTLEMENT (A)



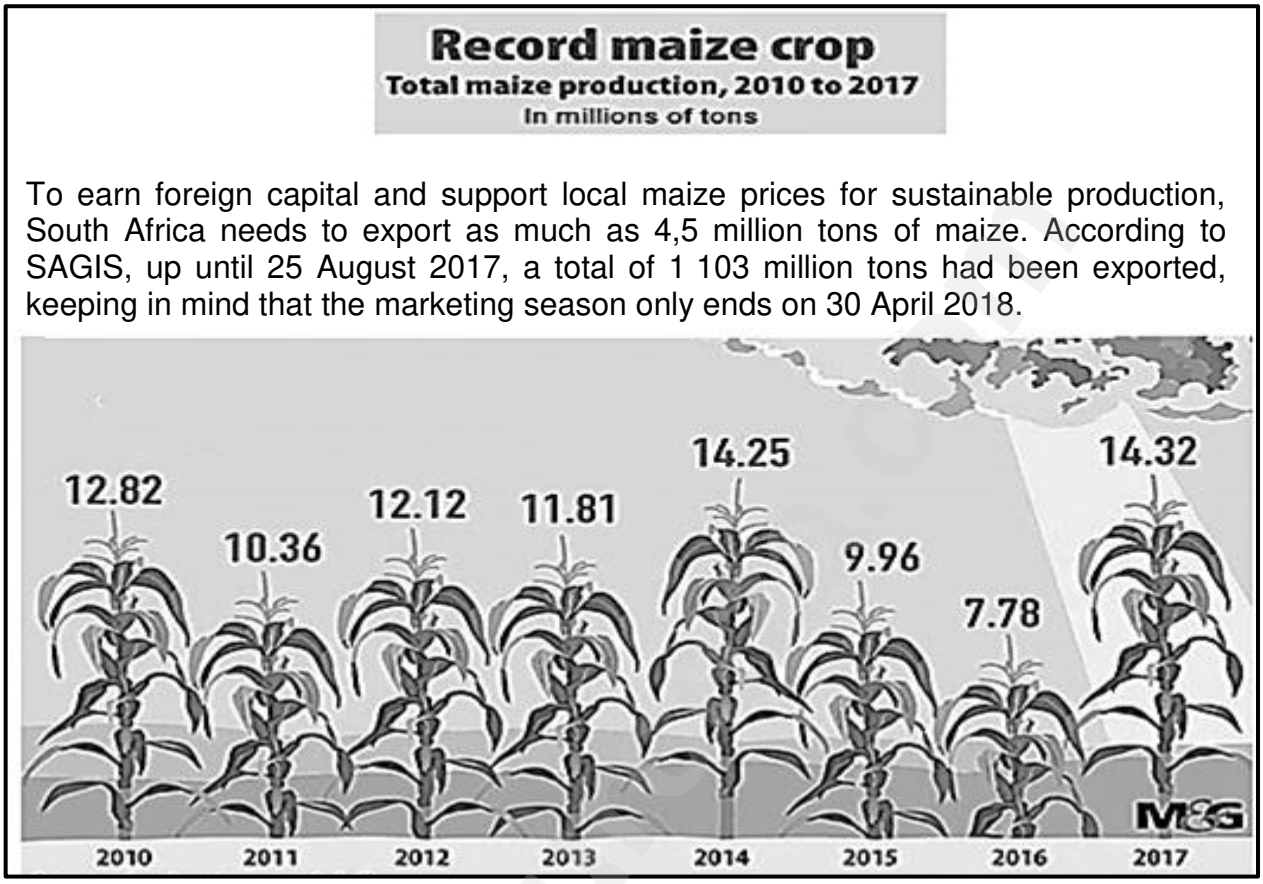
[Source: https://www.google.com/search?q=informal settlements]

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FIGURE 4.5: INFOGRAPHIC ON MAIZE FARMING IN SOUTH AFRICA



To earn foreign capital and support local maize prices for sustainable production, South Africa needs to export as much as 4,5 million tons of maize. According to SAGIS, up until 25 August 2017, a total of 1 103 million tons had been exported, keeping in mind that the marketing season only ends on 30 April 2018.

[Source: Graphic, John McCann, Data Source, DAFF]

FIGURE 4.6: DURBAN-PINETOWN INDUSTRIAL REGION

MANUFACTURING SECTOR

The Durban-Pinetown Industrial Region is the second largest in the country, after PWV/Gauteng. The manufacturing sector is geared for export, with nearly a third of South Africa's manufactured exports being produced in KwaZulu-Natal. Its diversified nature is significant in the KwaZulu-Natal's economic growth rate, and generates 20 per cent of provincial employment.

The largest manufacturing industries are the automobile and component sector, pulp and paper products, chemicals and petrochemicals, and food and beverages.

The Durban-Pinetown Industrial Region has a competent shipbuilding and repair sector with an excellent skills base. Over the years a variety of ocean going vessels have been built as well as renowned luxury motorised yachts. At present the shipbuilding industry has good basic infrastructure. There are immense possibilities around the Durban shoreline, especially in the construction of ships or parts. World demand for ships is on the increase and such an investment would create many jobs in the area.

[Source: http://kzntopbusiness.co.za/site/manufacturing]

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Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS/ NATIONAL SENIOR CERTIFICATE EXAMINATIONS

GEOGRAPHY P1

2019

MARKING GUIDELINES

MARKS: 225

These marking guidelines consist of 19 pages.

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Marking Guidelines

The following marking guidelines have been developed to standardise marking in all provinces.

Marking

- ALL selected questions MUST be marked, irrespective of whether it is correct or incorrect
- Candidates are expected to make a choice of THREE questions to answer. If all questions are answered, ONLY the first three questions are marked.
- A clear, neat tick must be used: ✓
  - If ONE mark is allocated, ONE tick must be used: ✓
  - If TWO marks are allocated, TWO ticks must be used: ✓✓
  - The tick must be placed at the FACT that a mark is being allocated for
  - Ticks must be kept SMALL, as various layers of moderation may take place
- Incorrect answers must be marked with a clear, neat cross: ×
  - Use MORE than one cross across a paragraph/discussion style questions to indicate that all facts have been considered
  - Do NOT draw a line through an incorrect answer
  - Do NOT underline the incorrect facts
- Where the maximum marks have been allocated in the first few sentences of a paragraph, place an **M** over the remainder of the text to indicate the maximum marks have been achieved

For the following action words, ONE word answers are acceptable: **give**, **list**, **name**, **state**, **identify**
For the following action words, a FULL sentence must be written: **describe**, **explain**, **evaluate**, **analyse**, **suggest**, **differentiate**, **distinguish**, **define**, **discuss**, **why**, **how**
The following action words need to be read within its context to determine whether a ONE word answer or FULL sentence is required: **provide**, **what**, **tabulate**

Totalling and transferring of marks

- Each sub-question must be totalled
  - Each question has six sub-sections, therefore six sub-totals per question required
  - Sub-section totals to be written in right hand margin at the end of the sub-section and underlined
  - Sub-total must be written legibly
  - Leave room to write in moderated marks on different levels
- Total sub-totals and transfer total to top left hand margin next to question number
- Transfer total to cover of answer book

Moderation

Marking on each level of moderation is done in the same way as the initial marking. All guidelines for marking must be adhered to.

If a mark for a sub-question is changed after moderation, the moderator must strike through the marker's mark and write down the new mark. ~~12~~ 16
The total for the question must be re-calculated, and similarly be struck off and the new total to be written down.

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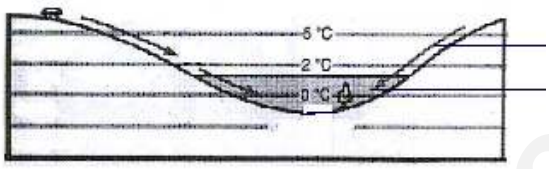
QUESTION 1

1.1.1 A (South Atlantic High) (1) ✓
1.1.2 B (Kalahari High) (1) ✓
1.1.3 B (South Indian) (1) ✗ **2**

1.2.1 Melting snow ✓
1.2.2 Mouth ✗
1.2.3 Third order ✓ **2**

1.3.1 Katabatic ✗
1.3.2 **1** occurs during the day while **2** occurs at night ✓✓

1.3.3 Cold air rolls down ✓✓ into the valley and forms an inversion



Air flows downslope ✓✓ **6**

1.4.1 Shape of front concave ✗
Steep gradient of front ✓

1.4.2 Warm air undercuts the cold air ✗

1.4.3 Air behind the cold front is colder ✓✓ than the air in front. Cold air moves faster ✓✓ than warm air ahead of it. Cold front catches up ✓✓ with the warm front. **7**

1.5.1 (a) A river that only flows all year round ✗

(b) The river channel is wide ✗

(c) Regularity ✓✓ of rainfall and the soil type ✓✓ over which the streams flow. **4**

1.6.1 Gauteng ✓ and the Eastern Cape ✗

1.6.2 Mining waste dumped ✓ in the river and industries pollute ✓ the water.

1.6.3 The cost of food production will increase at it is costly ✓✓ to buy purified water. Farmers will have to buy more ✓✓ chemicals to purify water. Chemicals cost ✓✓ a lot and this will increase production costs. It will be costly ✓✓ to purify water for use in electricity generation. These costs will be included in electricity prices. Costs will increase the price of electricity during production. There will be less clean water to generate hydro electricity. **11**

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SECTION A: CLIMATE, WEATHER AND GEOMORPHOLOGY

QUESTION 1

1.1 1.1.1 cumulonimbus (1)

1.1.2 convection (1)

1.1.3 eye (1)

1.1.4 stable (1)

1.1.5 convergence (1)

1.1.6 thunderstorms (1)

1.1.7 warm (1) (7 x 1) (7)

1.2 1.2.1 G (Oxbow lake) (1)

1.2.2 E (Leveé) (1)

1.2.3 A (Braided stream) (1)

1.2.4 H (Rapids) (1)

1.2.5 B (Delta) (1)

1.2.6 F (Waterfall) (1)

1.2.7 C (Undercut) (1)

1.2.8 D (Meander) (1) (8 x 1) (8)

1.3 1.3.1 South Atlantic (High) (1)
(Accept St Helena (High)) (1 x 1) (1)

1.3.2 Highest air pressure (1 024 hPa/mb) is in the centre (2)
Air pressure increases towards the centre (2)
[ANY ONE] (1 x 2) (2)

1.3.3 Anticlockwise (divergence) circulation around the high pressure carries cold, drier air towards the land where it condenses to form fog (2) (1 x 2) (2)

1.3.4 The ITCZ (heat equator) migrates (moves) northwards in winter (2)
Sun directly overhead in the Northern Hemisphere/Tropic of Cancer (2)
In winter all pressure systems migrate (move) north with the apparent movement of the sun (2)
[ANY TWO] (2 x 2) (4)

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1.3.5 The South Indian High (**B**) is in the path of mid-latitude cyclone (2)
Anticyclone (**B**) thus occupies a blocking position/preventing MLC from moving eastwards (2)
Mid-latitude cyclone is forced to move in a south-easterly direction (2)
[ANY ONE] (1 x 2) (2)

1.3.6 The fetch (distance) of the wind from **B** has a shorter distance to travel/**B** is closer to the coastline in winter (2)
This results in less moisture being fed onto the land (2)
Increased sinking air associated with less condensation (2)
There will be less rainfall because of these conditions (2) **[THESE TWO MARKS CAN ONLY BE AWARDED ON CONDITION THAT REFERENCE HAS BEEN MADE TO THE EXPLANATIONS]**
[ANY TWO] (2 x 2) (4)

1.4 1.4.1 night (1) (1 x 1) (1)

1.4.2 (a) frost (1) (1 x 1) (1)

(b) radiation fog (1) (1 x 1) (1)

1.4.3 Wind **B** is cold air that is heavy and drains onto the valley floor (2)
This cold air converges on the valley floor and displaces the warm air in the valley and forces it to rise (2)
This warm air causes an increase in temperature with height which is an inversion (2)
[ANY TWO] (2 x 2) (4)

1.4.4 **RADIATION FOG**
Affects visibility for motorists and other activities (2)
Slows traffic and people are late for work/higher fuel costs (2)
Risk of accidents increase (2)
Constant dampness makes/creates uncomfortable conditions for people (2)
Combines with pollutants to form smog which causes health issues (2)

AND/OR

FROST
Farmers are only able to plant frost resistant crops on the valley floor (2)
Difficult to live on the valley floor because the temperature is low (2)
It is more expensive because it will require artificial heating (2)
People can fall ill due to cold conditions (2)
Reduction in income as farming activities are reduced (2)
[ANY FOUR. ACCEPT IF CANDIDATE REFERS TO ONE ASPECT ONLY. IF CANDIDATES REFER TO BOTH IT IS ALSO ACCEPTABLE]
(4 x 2) (8)

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1.5 1.5.1 It refers to the way in which streams are arranged in a drainage basin/The description of the pattern of a river system/streams in a drainage basin/Surface pattern formed by the river and its tributaries (1)
[CONCEPT] (1 x 1) (1)

1.5.2 It resembles the branches of a tree (2) (1 x 2) (2)

1.5.3 Dendritic: Tributaries join at acute angles (2)
Trellis: Tributaries join main stream at 90° angle (2)
} Difference must be qualified

Dendritic: Long tributaries (2)
Trellis: Short tributaries (2)
} Difference must be qualified
OR
The dendritic pattern (2) has longer (2) tributaries
OR
The trellis pattern (2) has shorter (2) tributaries
[**ANY ONE RELATED DIFFERENCE. NO PART MARKS]** (2 x 2) (4)

1.5.4 <u>Dendritic</u>
The underlying rock structure is massive/uniformly/equally resistant to erosion (2)

<u>Trellis</u>
Varying resistance to erosion/folded rock structure/Alternative layers of hard and soft rock/Inclined rock strata (2) (2 x 2) (4)

1.5.5 In the dendritic pattern water is widely distributed in the drainage basin and water is accessible (2)
Longer tributaries therefore water is more accessible (2)
Occurs over flat/gentle land (middle/lower course) thus more suitable for farming (2)
Larger floodplains with access to fertile soils (2)
[ANY TWO] (2 x 2) (4)

1.6 1.6.1 Vertical (Accept downward) (1) (1 x 1) (1)

1.6.2 Upliftment (1)
Entrenched/Incised meanders (1)
[ANY ONE] (1 x 1) (1)

1.6.3 Isostatic uplift/Tectonic forces (1) (1 x 1) (1)

1.6.4 Steeper slopes make it unsuitable for human living (2)
Deeper gorges makes farming activity impossible (2)
Building infrastructure will be more expensive (2)
More specialised farming machinery will be needed (2)
Water will not be easily accessible for human usage (2)
Narrow floodplains reduce fertile farming land (2)
[ANY TWO] (2 x 2) (4)

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1.6.5 A knick point will develop between the old and the new point of erosion (2)
Waterfalls develop at the knick point where there is a sharp change in gradient (2)
Vertical (accept downward) erosion results in (paired) terraces (2)
Valleys within valleys develop as a result of a new valley floor (2)
Meanders deeply erode to form entrenched or incised meanders (2)
Floodplains are narrowed (2)
[ALSO ACCEPT THE FOLLOWING]
Higher velocity may remove some braided streams (2)
Higher velocity may break through the levees (2)
Higher velocity may wash the existing deltas away (2)
Higher velocity may result in more oxbow-lakes (2)
[ANY FOUR] (4 x 2) (8)
[75]

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QUESTION 2

2.1 2.1.1 isotherms (1)

2.1.2 A (1)

2.1.3 A to B (1)

2.1.4 B to A (1)

2.1.5 B (1)

2.1.6 A (1)

2.1.7 B (1)

2.1.8 A (1) (8 x 1) (8)

2.2 2.2.1 D/source (1)

2.2.2 A/watershed (1)

2.2.3 H/confluence (1)

2.2.4 B/floodplain (1)

2.2.5 G/interfluve (1)

2.2.6 C/mouth (1)

2.2.7 E/drainage basin (1) (7 x 1) (7)

2.3 2.3.1 South (1) (1 x 1) (1)

2.3.2 Air movement is clockwise indicated by the arrows (1)
Symbol in this diagram implies clockwise circulation (1)
Warm front located east of the cold front (in the Southern Hemisphere) (1)
The warm sector lies to the north of the cold sector (in the Southern Hemisphere) (1)
The V of the warm sector points southwards (in the Southern Hemisphere) (1)
[ANY ONE] (1 x 1) (1)

2.3.3 Polar front (1) (1 x 1) (1)

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2.3.4

Cold sector	Warm sector
Dry air (2)	Humid air (2)
Dense, heavy air (2)	Light, less dense (2)
Low temperature (2)	High temperature (2)
High pressure (2)	Low pressure (2)
South-easterly/south-westerly wind (2)	North-westerly wind (2)
Behind the cold front (2)	Behind the warm front (2)

[ANY ONE DIFFERENCE]

In the cold sector (2) the air is drier (2)
In the warm sector (2) the air is more moist (2)
In the cold sector (2) the air is denser and heavier (2)
In the warm sector (2) the air is lighter and less dense (2)
In the cold sector (2) the temperature is lower (2)
In the warm sector (2) the temperature is higher (2)
In the cold sector (2) the pressure is higher (2)
In the warm sector (2) the pressure is lower (2)
In the cold sector (2) south-easterly/south-westerly winds occur (2)
In the warm sector (2) north-westerly winds occur (2)
The cold sector (2) is behind the cold front (2)
The warm sector (2) is behind the warm front (2)
[ANY ONE. THE SECTOR WITH THE QUALIFICATION] (2 x 2) (4)

2.3.5 The leading edge of the cold front catches up with warm front at the apex (2)
Cold air undercuts the warm air and it is displaced and uplifted (2)
Cold and warm front merges/joins (2)
[ANY TWO] (2 x 2) (4)

2.3.6 Weather will be stable with clear skies and sunny conditions (2)
No rain which makes it suitable for outdoor activities (2)
Moderate temperatures which will be pleasant for outdoor activity (2)
Moderate to light winds make outdoor activities possible (2)
[ANY TWO] (2 x 2) (4)

2.4 2.4.1 Winter (1) (1 x 1) (1)

2.4.2 The presence of the Kalahari High Pressure Cell (in the interior) (1)
The presence of berg winds (1)
Kalahari High is close to the surface (1)
[ANY ONE] (1 x 1) (1)

2.4.3 Blows from the Kalahari High Pressure to coastal low (1)
Blows down the escarpment to coastal low (1)
Blows down the mountain to the ocean (1)
[ANY ONE] (1 x 1) (1)

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2.4.4 (a) A - offshore (1)
B - onshore (1) (2 x 1) (2)

(b) Lack of moisture because air blows from the land to the sea (2)
Air subsides therefore no condensation (2)
[ANY ONE] (1 x 2) (2)

(c) **NEGATIVE**
Warm, dry wind increases surface water evaporation (2)
Warm winds dry out the vegetation (2)
Dry vegetation could result/facilitate veld fires (2)
The gusty winds could fan and spread the fire (2)
Veld fires destroy ecosystems/habitats (2)
Biodiversity is reduced (2)
Food chains are disrupted (2)
Destruction of vegetation can result in bare soil and soil erosion (2)
Soil erosion will decrease soil fertility (2)
POSITIVE
Raises the temperature of coastal areas in winter (2)
Veld fires encourage regrowth and regeneration of natural vegetation (2)
[ANY FOUR] (4 x 2) (8)

2.5 2.5.1 Permanent rivers flow throughout the year (1) and episodic rivers flow only for a few hours after heavy rainfall or thunderstorms (1)
[CONCEPT] (2 x 1) (2)

2.5.2 The water table is above the river bed (2) (1 x 2) (2)

2.5.3 Low or sporadic rainfall to feed the ground water level (2)
High evaporation rate from the soil (2)
More permeable rocks results in deeper infiltration (2)
Longer periods of drought (2)
Drier soils absorb water easily (2)
Overuse of underground water (2)
[ANY TWO] (2 x 2) (4)

2.5.4 More overland flow would result in more water reaching the stream (2)
Water level in stream will rise (2)
Greater possibility for flooding to occur (2)
Less infiltration will cause the water table to drop in the dry season (2)
Increased erosion will increase the stream load (2)
Increased deposition would make the stream shallower (2)
Destabilisation of the river banks/levees (2)
Disruption of aquatic ecosystems/food webs/food chains (2)
[ANY FOUR] (4 x 2) (8)

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2.6 2.6.1 Using river resources in a sustainable way so that it will still be available in the future (1)
[CONCEPT] (1 x 1) (1)

2.6.2 Chemical waste/waste water could be released in the river (1)
Acid rain caused by air pollution by the factory could end up in the river (1)
[ANY ONE] (1 x 1) (1)

2.6.3 Waste water will be treated/purified at the wastewater treatment plant so that it could be re-used/recycled (2)
More fresh water resources will be available (2)
The purified water will prevent and eliminate diseases (2)
Protect aquatic ecosystems (2)
[ANY TWO] (2 x 2) (4)

2.6.4 Aquatic life threatened (2)
Imbalance of the ecosystem (2)
Reduced biodiversity (2)
Increased nitrate encourages growth of algae/eutrophication (2)
Reduced oxygen levels (2)
[ANY TWO] (2 x 2) (4)

2.6.5 Less clean/pure water resources for primary and secondary economic activities (2)
Less clean water results in water restrictions (2)
Water treatment is expensive and increases the cost of water (2)
Finding alternative water sources will become costly (Accept examples) (2)
Less goods produced for home and export market (2)
Decreases the productivity of farming/manufacturing (2)
Negative influence on stock farming as the number of animals will be reduced (2)
Poor water quality will negatively influence tourism due to the fear of diseases by drinking poor quality water (2)
Fewer tourists will mean less income for the country (2)
[ANY TWO] (2 x 2) (4)
[75]

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SECTION B: RURAL AND URBAN SETTLEMENTS AND ECONOMIC GEOGRAPHY OF SOUTH AFRICA

QUESTION 3

3.1 3.1.1 A (1)

3.1.2 A (1)

3.1.3 A (1)

3.1.4 B (1)

3.1.5 A (1)

3.1.6 B (1)

3.1.7 B (1)

3.1.8 B (1) (8 x 1) (8)

3.2 3.2.1 D/Eastern Cape (1)

3.2.2 A/Copper (1)

3.2.3 B/Phalaborwa SDI (1)

3.2.4 C/Motor vehicle assembly (1)

3.2.5 A/Western Cape (1)

3.2.6 C/PWV/Gauteng (1)

3.2.7 B/Port Elizabeth-Uitenhage (1) (7 x 1) (7)

3.3 3.3.1 84% (1) (1 x 1) (1)

3.3.2 '…only 30% of the nation's doctors work at public hospitals' (2)
'more money is spent on the private sector than on the public sector' (2)
'For most South Africans the quality of health care is inadequate.'
[ANY ONE] (1 x 2) (2)

3.3.3 Not everybody has the same access to quality health care (2)
Private health care is very expensive (2)
People stand in long queues for long hours (2)
Medication in public health care not always available (2)
Mobile clinics are not properly stocked with medicines and equipment (2)
The services offered in public clinics is restricted because of budget constraints (2)
Public health care facilities are not maintained adequately (2)
Doctor to patient ratio is high (2)
[ANY TWO] (2 x 2) (4)

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3.3.4 Increase the number of doctors employed in public hospitals and clinics (2)
Build more hospitals and clinics to cater for the large population numbers (2)
Proper maintenance of hospital infrastructure (2)
Sufficient provision of equipment/stock (2)
Make health care more affordable (2)
Regulate the prices of all medical services and medicine (2)
Extend working hours in local clinics to allow greater access to treatment (2)
Regulate the prices of medical schemes (2)
Introduce an affordable national health insurance (2)
Improve salaries of healthcare workers (2)
Improve qualifications of healthcare workers in public hospitals (2)
Regular monitoring of health care workers by senior management (2)
Increase in number of healthcare workers in the public sector (2)
Provide incentives to improve service delivery in public hospitals (2)
Provision of public and private partnerships (2)
[ANY FOUR] (4 x 2) (8)

3.4 3.4.1 Multiple nuclei model/Harris and Ullman (1) (1 x 1) (1)

3.4.2 Residential (1) (1 x 1) (1)

3.4.3 Tall buildings/skyscrapers (1)
High building density (1)
[ANY ONE] (1 x 1) (1)

3.4.4 To decentralise commercial activities (2)
Outlying business district is more accessible in the outskirts (2)
Commercial activities now closer to the residential areas (2)
Less traffic congestion in the outskirts (2)
Lower crime rate in the outskirts (2)
More space/room for expansion on the outskirts (2)
Land cheaper in the outskirts (2)
Less pollution in the outskirts (2)
Peaceful/tranquil surroundings in the outskirts (2)

OR

CBD became less accessible than the outlying business district (2)
Commercial activities of CBD far from residential areas (2)
More traffic congestion in the CBD (2)
Higher crime rate in CBD (2)
Less space in CBD (2)
More pollution in the CBD (2)
High land values/rentals in the CBD (2)
Urban blight in the CBD (2)
[ANY ONE] (1 x 2) (2)

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3.4.5 (a) Land-use zones **5** and **6** are far apart (2)
Located on opposite sides of the city (2)
[ANY ONE] (1 x 2) (2)

(b) Heavy manufacturing industrial land use zones cause a lot of noise pollution which does not suit high income residential zones (2)
Air pollution from industrial areas repels (push away) high-income residential zones (2)
Unpleasant odours from industrial areas is not attractive to high-income residential zones (2)
Heavy industries are not aesthetically pleasing for people in high-income residential areas (2)
Influx of traffic congestion near heavy manufacturing land-use zones does not suit high income residential zones (2)
[ANY TWO] (2 x 2) (4)

3.4.6 There is a clear separation between high, middle and low income residential areas (2)
Separation between suburbs and the workplace (2)
Sharply defined land-use zones (2)
Tall buildings/high building density in the CBD of both (2)
[ANY TWO] (2 x 2) (4)

3.5 3.5.1 A government programme to encourage investment in infrastructure in undeveloped areas (1)
[CONCEPT] (1 x 1) (1)

3.5.2 Saldanha Bay (Accept Port of Saldanha) (1) (1 x 1) (1)

3.5.3 Steel processing/manufacturing (1)
Fish processing and fishmeal industries (1)
Gas power plant (1)
Ship repair (1)
[ANY ONE] (1 x 1) (1)

3.5.4 Bay allows for the development of a natural harbour (2)
Available vacant land for the expansion of industries (2)
Flat land makes construction cheaper and easier (2)
Flat land makes the construction of infrastructure easier, therefore increases accessibility (2)
Climate is conducive for productivity (2)
[ANY TWO] (2 x 2) (4)

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3.5.5 Employment opportunities are created in industries, farming, infrastructural development and tourism (2)
These employment opportunities also uplifts the skills of people (2)
Industries become involved in social responsibility programmes (2)
Earning potential increases as people now have fixed jobs (2)
Poverty is reduced as people have money to afford basic needs (2)
Accessibility to more and better services for the local community (2)
Standard of living increases as people can now afford private homes/medical care/education (2)
Tourism provides opportunities for local communities in the informal sector to sell their wares/arts and craft (2)
Upgrading and development of new infrastructure benefits the community (2)
[ANY FOUR] (4 x 2) (8)

3.6 3.6.1 To allow a country to exchange goods and services produced with those of other countries (1) (1 x 1) (1)

3.6.2 'Use of modern production techniques' (2)
'Highly advanced transportation systems' (2)
'Outsourcing of manufacturing and services' (2)
[ANY ONE] (1 x 2) (2)

3.6.3 It promotes foreign investment and greater access to government funding (2)
It creates job opportunities thus improving the standard of living (2)
It improves the skills of people hence they earn a better salary (2)
Purchasing power increases due to higher income (2)
Goods can be bought at a lower price thus reducing expenses (2)
It encourages the development of more secondary industries which has a multiplier effect (2)
[ANY TWO] (2 x 2) (4)

3.6.4 South Africa is at the southern tip of Africa and the major trading partners are located in the Northern Hemisphere (2)
Due to the distance it takes longer to deliver goods (2)
Higher transport costs increase the price of exported goods (2)
The longer travelling distance results in goods not being easily available (2)
The longer travelling distance affects the quality of perishable goods (2)
[ANY TWO] (2 x 2) (4)

3.6.5 Market is flooded with imported goods (2)
Increased competition limits the ability of local industries to expand their operations (2)
It results in the closure of local industries (2)
Imported goods are sometimes cheaper than local goods (2)
Local production decreases due to lower demand (2)
Loss of jobs locally as industries close/high unemployment (2)
Limited growth in the economy/GDP stagnates (2)
[ANY TWO] (2 x 2) (4)
[75]

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QUESTION 4

4.1 4.1.1 High order central place (1)

4.1.2 Low order central place (1)

4.1.3 High order central place (1)

4.1.4 Low order central place (1)

4.1.5 High order central place (1)

4.1.6 Low order central place (1)

4.1.7 High order central place (1) (7 x 1) (7)

4.2 4.2.1 C (Tertiary sector) (1)

4.2.2 D (Quaternary) (1)

4.2.3 A (Gross domestic product) (1)

4.2.4 B (Export) (1)

4.2.5 B (Secondary) (1)

4.2.6 C (Large scale commercial) (1)

4.2.7 A (Raw material orientated) (1)

4.2.8 D (Decentralisation) (1) (8 x 1) (8)

4.3 4.3.1 Rural depopulation is the decreasing number of people in rural areas (1)
[CONCEPT] (1 x 1) (1)

4.3.2 'Now there are 5 farms, with four of them housing only one resident' (1)
'The churches decline …' (1)
'… schools consolidate' (1)
'… communities lose their identity' (1)
[ANY TWO] (2 x 1) (2)

4.3.3 (a) Consolidation of smaller uneconomic farm units (2)
Commercial farmers buy land from subsistence farmers creating larger farm units/facilitates mechanisation (2)
[ANY ONE] (1 x 2) (2)

(b) Mechanisation takes place reducing the demand for workers (2)
Workers are forced to leave the rural areas to find employment (2)
Families lose their source of income and are forced to move (2)
[ANY ONE] (1 x 2) (2)

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4.3.4 It encourage (subsistence/ commercial) farming and thus create food security and more jobs (2)
It would transfer land to people which would encourage them to stay in rural areas (2)
It would return land to people hence encouraging them to stay or return to the rural areas (2)
It offers communities the opportunity to generate income and improve services in rural areas (2)
It allows communities to lease out land for commercial purposes hence creating more jobs (2)
It could prevent people from being forcibly removed from land owned by others in rural areas (2)
[ANY FOUR] (4 x 2) (8)

4.4 4.4.1 When people occupy unserviced land and build from a variety of available materials (Learners may refer to illegal land) (1)
[CONCEPT] (1 x 1) (1)

4.4.2 Employment (1)
Water (1)
Electricity (1)
Schools (1)
Sanitation (1)
Healthcare (1)
Refuse removal (1)
Formal housing (1)
Planned roads (1)
[ANY TWO] (2 x 1) (2)

4.4.3 The informal settlement has a higher density of buildings (1)
The informal settlement has no proper roads (1)
Houses are smaller in size (1)
Plots are smaller (1)
Higher density/overcrowding (1)
More vegetation in **B** than **A** (1)
B appears planned and **A** appears unplanned (1)
[ANY TWO. ALSO ACCEPT THE OPPOSITE PERSPECTIVE] (2 x 1) (2)

4.4.4 Industries for employment (1)
Main road (1)
Formal settlement will provide informal jobs (1)
Vacant land available (1)
Availability of services (1)
[ANY TWO] (2 x 1) (2)

4.4.5 People from **A** would be able to get job opportunities from **B** (2)
Close proximity to work and therefore save time (2)
Close proximity to work reduces transport costs (2)
Close access to services such as schools and shops in the formal settlement (2)
Access to social and religious services such as church, parks etc. in the formal settlement (2)
[ANY TWO] (2 x 2) (4)

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4.4.6 Relocate informal settlement dwellers to areas where self-help homes can be built (2)
Provision of land for building informal houses (2)
Provide site and service plots (2)
Provide RDP houses to those living in informal settlements (2)
Strict legislation on preventing the growth of informal settlements (2)
[ANY TWO] (2 x 2) (4)

4.5 4.5.1 To earn foreign capital (1)
Support local maize prices for sustainable maize production (1)
[ANY ONE] (1 x 1) (1)

4.5.2 Lowest – 2016 (1)
Highest – 2017 (1) (2 x 1) (2)

4.5.3 Staple diet for many African countries (2)
SA produces a higher quality maize than other competing countries (2)
Used as an additive in the production of other foods (2)
Maize is supplied at an affordable price (2)
The climatic factors are not conducive for production in foreign countries (2)
[ANY ONE. ALSO ACCEPT OPPOSITE PERSPECTIVE] (1 x 2) (2)

4.5.4 Climatic factors such as drought, floods, unreliable rainfall (2)
Veld fires (2)
Diseases (2)
Climate change (2)
Uncertainties about land reform (2)
Soil erosion/less arable land/more infertile soil (2)
[ANY ONE] (1 x 2) (2)

4.5.5 Less income generated from exports (2)
Increase in price of maize for local inhabitants (2)
Decrease in GDP due to a drop in sales (2)
Greater loss of jobs (2)
Extra costs will be incurred to import food to make up for the shortage (2)
Increased production costs as genetically modified (GM) crops has to be considered for a more stable production (2)
Decrease in raw materials for manufacturing (2)
Purchasing power of farmers and farm workers decrease (2)
[ANY TWO] (2 x 2) (4)

4.5.6 The government should subsidise farmers (2)
Invest more money in research/agricultural production to increase production (2)
Speed up land reform to encourage the establishment of more farmers (2)
Encourage the use of genetically modified crops as it can grow under more hardy conditions (2)
Water transfer schemes will improve production (2)
Skills training for emerging farmers (2)
Improve accessibility to markets to sell goods (2)
Make research into changing weather patterns/climate accessible to all farmers (2)
[ANY TWO] (2 x 2) (4)

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4.6 4.6.1 2nd (1) (1 x 1) (1)

4.6.2 'The manufacturing sector is geared for export, (1) with nearly a third of South Africa's manufactured exports being produced in KZN' (1)
[MARK FOR EITHER FIRST OR SECOND PART OF THE QUOTE]
(1 x 1) (1)

4.6.3 Diversified (1) (1 x 1) (1)

4.6.4 A large skills base to provide a skilled and unskilled labour force (2)
Good infrastructure to import and export raw materials and finished goods (2)
World demand for ships creates opportunities for expansion (2)
Coastal location is favourable for the shipping industry (2)
[ANY TWO] (2 x 2) (4)

4.6.5 More employment opportunities are created (2)
Reduction in poverty due to people being employed (2)
Greater income results in an improved standard of living (2)
KZN home market will increase in strength as people have more money (2)
An increase in the export of goods will occur (2)
Increase in foreign income as exports increase (2)
This encourages the growth of the gross domestic product (2)
High level of industrialisation attracts foreign investment (2)
Multiplier effect results in further economic development (2)
Results in new beneficiation initiatives developing (2)
Linked industries are developed to support major industries (2)
[ANY FOUR] (4 x 2) (8)
[75]

TOTAL: 225

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basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

GEOGRAPHY P1

NOVEMBER 2018

MARKS: 225

TIME: 3 hours

This question paper consists of 13 pages and a 13-page annexure.

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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. 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 where you have to state, name, identify or list.
11. Units of measurement MUST be indicated in your final answers, e.g. 1 020 hPa, 14 °C or 45 m.
12. Write neatly and legibly.

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SECTION A: CLIMATE, WEATHER AND GEOMORPHOLOGY

QUESTION 1

1.1 Refer to FIGURE 1.1 which shows anticyclones over South Africa. Choose the correct word(s) from those given in brackets. Write only the word(s) next to the question numbers (1.1.1 to 1.1.7) in the ANSWER BOOK.

1.1.1 Pressure cell **A** is situated further (north/south) in winter.

1.1.2 Pressure cell **B** is named the (South Atlantic/South Indian) High-Pressure Cell.

1.1.3 When isobars are elongated away from pressure cell **B** they form a (ridge/trough).

1.1.4 The pressure reading at **C** is approximately (1 012 hPa/1 016 hPa).

1.1.5 The wind speed at weather station **D** is (20 knots/10 knots).

1.1.6 The wind direction at weather station **D** is (north-east/north-west).

1.1.7 Pressure cells **A**, **B** and **C** represent the (equatorial low/subtropical high) pressure belt. (7 x 1) (7)

1.2 FIGURE 1.2 shows sketches (**1** to **4**) based on river capture.

1.2.1 Refer to sketch **1**. Which one, river **A** or river **B**, is likely to be the captor stream?

1.2.2 Name the climatic factor causing river **B** in sketch **2** to erode at a faster rate.

1.2.3 What type of erosion caused the watershed to move towards river **A** in sketch **2**?

1.2.4 Refer to sketch **3**. Which one, river **A** or river **B**, is the captured stream?

1.2.5 Refer to sketch **4**. Name the feature of river capture at **C**.

1.2.6 Refer to sketch **4**. Name the feature of river capture at **D**.

1.2.7 What is the term used to describe river **A** which has been reduced in volume in sketch **4**?

1.2.8 Does river **A** or river **B** flow at a lower altitude in sketch **2**? (8 x 1) (8)

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1.3 Study FIGURE 1.3 showing mid-latitude cyclones on a synoptic weather map of southern Africa.

1.3.1 Give the term used to describe the linked mid-latitude cyclones. (1 x 1) (1)

1.3.2 What evidence suggests that mid-latitude cyclone **A** is the oldest? (1 x 2) (2)

1.3.3 Why is front **D** NOT associated with heavy rain? (1 x 2) (2)

1.3.4 What causes the dissipation of mid-latitude cyclones? (1 x 2) (2)

1.3.5 Write a paragraph of approximately EIGHT lines explaining the weather conditions that will be experienced by a tourist visiting Cape Town with the approach of a cold front. (4 x 2) (8)

1.4 Study FIGURE 1.4 showing a diagram on valley climates.

1.4.1 Is the slope wind at **X** an anabatic or a katabatic wind? (1 x 1) (1)

1.4.2 Other than the label, what evidence indicates that **B** is the thermal belt? (1 x 1) (1)

1.4.3 What is the term used to describe an increase in the temperature as the height increases in the valley? (1 x 1) (1)

1.4.4 Explain why slope wind **X** will be more intense in winter. (2 x 2) (4)

1.4.5 Account for the low temperature that is likely to be experienced on the valley floor during winter. (2 x 2) (4)

1.4.6 How will farmers have to adapt their farming techniques (methods) due to the temperature change on the valley floor? (2 x 2) (4)

1.5 FIGURE 1.5 shows a river system with a low drainage density.

1.5.1 Give evidence to suggest that the river system has a low drainage density. (1 x 1) (1)

1.5.2 Describe TWO factors that may have resulted in a low drainage density. (2 x 2) (4)

1.5.3 How will an increased drainage density impact on the existing stream order at **A**? (1 x 2) (2)

1.5.4 Write a paragraph of approximately EIGHT lines discussing how human activities along the river's course could increase the drainage density of the drainage basin. (4 x 2) (8)

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1.6 FIGURE 1.6 shows the changing cross-profile of the valley along the river's course.

1.6.1 In which course is the source of the river? (1 x 1) (1)

1.6.2 Name TWO elements of the cross-profile that changed from the upper to the lower course in FIGURE 1.6. (2 x 1) (2)

1.6.3 Differentiate between the fluvial processes that shaped the cross-profiles of the upper course and lower course of the river. (2 x 2) (4)

1.6.4 Describe the reasons for the change in the shape of the cross-profile of the middle course. (2 x 2) (4)

1.6.5 Explain why the shape of the cross-profile in the upper course of the river will make it the most suitable place to build a dam. (2 x 2) (4)

[75]

QUESTION 2

2.1 Study FIGURE 2.1, a cross-sectional view of a tropical cyclone.

Choose the correct word(s) from those given in brackets which will make each statement geographically CORRECT. Write only the word(s) next to the question numbers (2.1.1 to 2.1.8) in the ANSWER BOOK.

2.1.1 The (eye/vortex) at **A** is characterised by descending air.

2.1.2 The area at **B** is an area of (high/low) air pressure.

2.1.3 (Light/Heavy) rainfall occurs at **C**.

2.1.4 The vertical movements of air at **D** are known as (updraughts/ down draughts).

2.1.5 The upper air at **E** is (converging/diverging).

2.1.6 **F** is associated with (low/high) air pressure.

2.1.7 The graph (**G**) shows air (pressure/temperature) with the passage of the tropical cyclone.

2.1.8 Surface (air temperature/wind speed) is depicted by graph **H**. (8 x 1) (8)

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2.2 Choose a term from COLUMN B that matches the fluvial landform description in COLUMN A. Write only the letter (A–H) next to the question numbers (2.2.1 to 2.2.7) in the ANSWER BOOK, e.g. 2.2.8 I.

COLUMN A		COLUMN B	
2.2.1	Flat, natural feature next to a river	A	rapid
2.2.2	An embankment along the river where coarse material is deposited first	B	delta
2.2.3	Curves or bends found along the course of a river	C	meander
2.2.4	When a meander loop becomes separated from the river	D	braided stream
2.2.5	Streams with multiple channels and islands of sediment between the channels	E	floodplain
2.2.6	A vertical drop in the course of a river as a result of softer rock eroding faster than hard rock	F	oxbow lake
2.2.7	A depositional landform that occurs when a river flows into the ocean	G	levee
		H	waterfall

(7 x 1) (7)

2.3 FIGURE 2.3 shows line thunderstorms over South Africa.

2.3.1 Name the front over the interior of the country where line thunderstorms originate. (1 x 1) (1)

2.3.2 What evidence suggests that line thunderstorms are illustrated (shown)? (1 x 2) (2)

2.3.3 Why are line thunderstorms generally associated with summer? (1 x 2) (2)

2.3.4 What is the source of moisture for the formation of line thunderstorms? (1 x 2) (2)

2.3.5 Why is there usually a thicker band of clouds to the east of the front? (2 x 2) (4)

2.3.6 Explain why the weather conditions associated with line thunderstorms are more severe than isolated (normal) thunderstorms. (2 x 2) (4)

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2.4 Refer to FIGURE 2.4 showing a pollution dome over a South African city.

2.4.1 What is a *pollution dome*? (1 x 1) (1)

2.4.2 Why is a pollution dome associated with an urban area? (1 x 2) (2)

2.4.3 Explain why the pollution dome is more concentrated at night. (2 x 2) (4)

2.4.4 Write a paragraph of approximately EIGHT lines explaining how pollution domes increase the maintenance costs of the built environment for people living in the city. (4 x 2) (8)

2.5 Study FIGURE 2.5 which illustrates river rejuvenation.

2.5.1 Define the term *river rejuvenation*. (1 x 1) (1)

2.5.2 Identify the condition that resulted in river rejuvenation. (1 x 1) (1)

2.5.3 Name ONE likely fluvial feature that can form at the knickpoint along the river profile. (1 x 1) (1)

2.5.4 Explain the impact of river rejuvenation on the grading of a river. (2 x 2) (4)

2.5.5 Write a paragraph of approximately EIGHT lines elaborating on the changes that will occur in the fluvial features found in the illustrated course of the river as a result of river rejuvenation. (4 x 2) (8)

2.6 Refer to FIGURE 2.6, an extract based on the impact of deforestation on river management.

2.6.1 What is *deforestation*? (1 x 1) (1)

2.6.2 (a) By which year is it expected that almost all tropical forests will be lost? (1 x 1) (1)

(b) The size of which province can be compared to the total area of forests being lost annually? (1 x 1) (1)

2.6.3 Name TWO negative consequences of deforestation on river systems. (2 x 2) (4)

2.6.4 Suggest TWO measures that can be put in place by the government and non-governmental organisations (NGOs) to manage river systems at risk due to deforestation. (2 x 2) (4)

2.6.5 Discuss the negative impact of poor river management practices on South Africa's future water supply. (2 x 2) (4)

[75]

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

QUESTION 3

3.1 Choose ONE word/term from the list below that matches a description of settlement patterns or shapes. Write only the word/term next to the question numbers (3.1.1 to 3.1.8) in the ANSWER BOOK.

linear; T-shaped; cross-shaped; dispersed; cobweb; circular; stellar; semi-circular; nucleated

3.1.1 Shape of settlements located along a narrow canal

3.1.2 Settlement shape that develops along many main roads which radiate in different directions from a central point

3.1.3 Shape of settlement located along a harbour

3.1.4 Settlement shape that resulted from houses that are grouped around a market square

3.1.5 Settlement pattern that resulted from houses being close together

3.1.6 Settlement shape where two major roads intersect

3.1.7 Settlement pattern that resulted when houses are far apart from each other

3.1.8 Settlement shape where a secondary road meets with a main road (8 x 1) (8)

3.2 Refer to FIGURE 3.2 depicting the sector composition of the South African economy in 2017.

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 numbers (3.2.1 to 3.2.7) in the ANSWER BOOK, e.g. 3.2.8 A.

3.2.1 The total value of goods and services produced in a country in one year:

A GNP
B GDP
C GPP
D RDP

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3.2.2 Which tertiary activity contributed the most to the South African economy?

A General government services
B Manufacturing
C Trade, catering and accommodation
D Finance, real estate and business services

3.2.3 … form(s) part of the tertiary sector of the economy.

A Agriculture, forestry and fishing
B Electricity, gas and water
C Mining and quarrying
D Manufacturing

3.2.4 Name the category that contributed the least to the primary sector in 2017:

A Mining and quarrying
B Construction
C Transport, storage and communication
D Agriculture, forestry, fishing

3.2.5 This category dominated the secondary sector in 2017:

A General government services
B Manufacturing
C Trade, catering and accommodation
D Finance, real estate and business services

3.2.6 Which tertiary activity contributed the least to the South African economy in 2017?

A Personal services
B General government services
C Electricity, gas and water
D Transport, storage and communication

3.2.7 What percentage did the tertiary sector contribute to the South African economy in 2017?

A 10%
B 25%
C 77%
D 91%

(7 x 1) (7)

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3.3 FIGURE 3.3 shows bar graphs indicating the level and rate of urbanisation in South Africa between 2006 and 2016.

3.3.1 Define the term *urbanisation.* (1 x 1) (1)

3.3.2 State the relationship between the level and the rate of urbanisation between 2006 and 2016. (1 x 2) (2)

3.3.3 Discuss TWO physical factors in the rural area that could have contributed to the rate of urbanisation shown in FIGURE 3.3. (2 x 2) (4)

3.3.4 Write a paragraph of approximately EIGHT lines discussing the reasons why the rate and level of urbanisation has led to increased protests against service delivery in urban areas. (4 x 2) (8)

3.4 FIGURE 3.4 shows the rural-urban fringe marked as **A**.

3.4.1 What is the *rural-urban fringe*? (1 x 1) (1)

3.4.2 State TWO urban land uses that are evident in the rural-urban fringe (**A**). (2 x 1) (2)

3.4.3 Give TWO reasons why the rural-urban fringe is becoming more urban in nature. (2 x 2) (4)

3.4.4 Why is the rural-urban fringe an attractive location for the gated community (secure neighbourhood with security guards and controlled access)? (2 x 2) (4)

3.4.5 The demand for housing is growing rapidly and developers are looking at the rural-urban fringe as a solution for the shortage of building space. Suggest TWO possible objections to planned housing developments in the rural-urban fringe. (2 x 2) (4)

3.5 Refer to FIGURE 3.5, an extract on South Africa's beef industry.

3.5.1 Which country had the highest exportation of beef in 2016? (1 x 1) (1)

3.5.2 Quote evidence from the extract that suggests that the beef industry is growing in South Africa. (1 x 1) (1)

3.5.3 Refer to the statement below.

By exporting higher quality beef, our industry can protect itself from shocks that result in reduced profits.

(a) Why does the exportation of low quality beef reduce profits? (1 x 1) (1)

(b) Suggest how farmers can produce higher quality beef. (2 x 2) (4)

3.5.4 Write a paragraph of approximately EIGHT lines explaining the factors preventing South Africa from being competitive with other top beef exporters. (4 x 2) (8)

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3.6 Read the extract in FIGURE 3.6 referring to the East London IDZ.

3.6.1 In which province is the East London IDZ located? (1 x 1) (1)

3.6.2 Give TWO positive impacts of the East London IDZ identified in FIGURE 3.6. (2 x 1) (2)

3.6.3 How did the development of the East London IDZ improve the infrastructure of the province? (2 x 2) (4)

3.6.4 Give TWO incentives that the provincial government could have offered to attract investment to the East London IDZ. (2 x 2) (4)

3.6.5 Explain why it is more beneficial for the economy of the province in which ELIDZ is situated if companies focus on export-orientated manufacturing. (2 x 2) (4)

[75]

QUESTION 4

4.1 Refer to FIGURE 4.1 on different street patterns. Match the descriptions below with street patterns **A**, **B** or **C**. Choose the answer and write only the letter A, B or C next to the question numbers (4.1.1 to 4.1.7) in the ANSWER BOOK, e.g. 4.1.8 A. You may choose the same letter more than once.

4.1.1 Commonly found in the oldest parts of South African cities

4.1.2 Transport routes radiate from a central point

4.1.3 Streets intersect at right angles and planning is made easy

4.1.4 Associated with ancient cities with ring roads as a feature

4.1.5 Associated with new urban developments

4.1.6 Can result in traffic congestion

4.1.7 Suburbs with this street pattern will have irregular roads for the smooth flow of traffic (7 x 1) (7)

4.2 Refer to FIGURE 4.2 showing statistics on gold mining in January 2017.

4.2.1 Name the province where the most gold is mined in South Africa.

4.2.2 Which gold mine in Gauteng produces the most gold per ounce (oz) in South Africa?

4.2.3 Name the mining company that produced the most gold.

4.2.4 Name the country with the highest production of gold in the world.

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4.2.5 What is the ranking of South Africa in terms of gold production in the world?

4.2.6 Calculate the contribution that Africa made to the world's gold production in January 2017.

4.2.7 At the end of which year did South Africa's gold production drop to its lowest point?

4.2.8 Is the most recent production of gold in South Africa showing an increasing or decreasing trend? (8 x 1) (8)

4.3 Read the extract in FIGURE 4.3 referring to poor public transport as an economic injustice in South Africa.

4.3.1 Name the type of public transport system highlighted in the extract. (1 x 1) (1)

4.3.2 Give ONE reason why the poor public transport system named in QUESTION 4.3.1 is considered to be an economic injustice. (1 x 1) (1)

4.3.3 What drastic measure has government taken to solve the taxi crisis? (1 x 1) (1)

4.3.4 Why does the taxi industry transport 15 million commuters daily? (2 x 2) (4)

4.3.5 Why are taxi drivers against new taxi businesses such as Uber and Taxify? (2 x 2) (4)

4.3.6 Discuss TWO possible solutions that government could implement to reduce taxi violence. (2 x 2) (4)

4.4 FIGURE 4.4 shows water as a social justice issue in rural areas.

4.4.1 How was water transported in rural areas prior to the invention of the water wheel shown in FIGURE 4.4? (1 x 1) (1)

4.4.2 How has the water wheel by Wello changed access to water in rural areas? (1 x 2) (2)

4.4.3 What role can access to water in rural areas play in reducing poverty? (1 x 2) (2)

4.4.4 Give a reason for the poor water infrastructure in rural areas of South Africa. (1 x 2) (2)

4.4.5 Write a paragraph of approximately EIGHT lines suggesting sustainable solutions to improve access to water in rural areas. (4 x 2) (8)

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4.5 Read the extract in FIGURE 4.5 based on the PWV/Gauteng Industrial Region.

4.5.1 Quote evidence from the article to support the statement that the PWV/Gauteng Industrial Region is a core industrial region. (1 x 1) (1)

4.5.2 Discuss ONE factor that has contributed to the PWV/Gauteng Industrial Region being a preferred destination for international investors. (1 x 2) (2)

4.5.3 Gauteng's manufacturing sector is a major market for copper.

(a) Why is the Phalaborwa SDI the main supplier of copper to Gauteng? (1 x 2) (2)

(b) How will the Phalaborwa SDI benefit from strengthening its trading links with Gauteng? (1 x 2) (2)

4.5.4 Write a paragraph of approximately EIGHT lines explaining how energy provision and labour will become major challenges that the PWV/Gauteng Industrial Region will experience in the processing of copper in the next three years. (4 x 2) (8)

4.6 Refer to the cartoon in FIGURE 4.6 showing the role of international trade in the South African economy.

4.6.1 What is *international trade*? (1 x 1) (1)

4.6.2 Name the product that is being imported into South Africa in large quantities. (1 x 1) (1)

4.6.3 Which government department is represented as the referee in the cartoon? (1 x 1) (1)

4.6.4 Explain why the cartoon suggests that the fight cannot be nice, clean and fair. (1 x 2) (2)

4.6.5 Name ONE way in which cheap imports negatively impact on the GDP of South Africa. (1 x 2) (2)

4.6.6 Why are cheap imports allowed into South Africa despite its negative impact on the economy of South Africa? (2 x 2) (4)

4.6.7 Suggest TWO possible measures to reduce South Africa's reliance (dependence) on cheap imports. (2 x 2) (4)

[75]

TOTAL: 225

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GRADE 12

GEOGRAPHY P1

NOVEMBER 2018

ANNEXURE

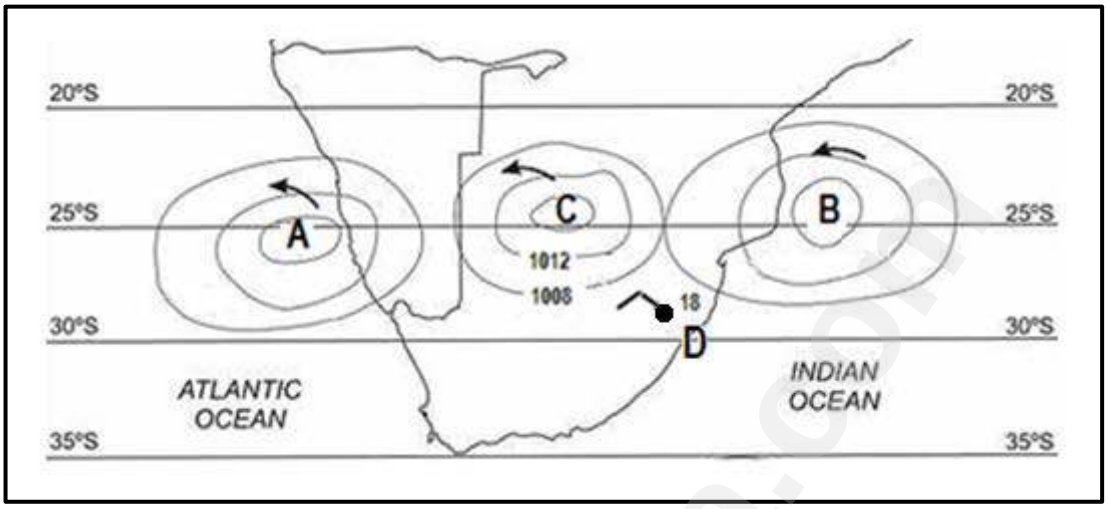
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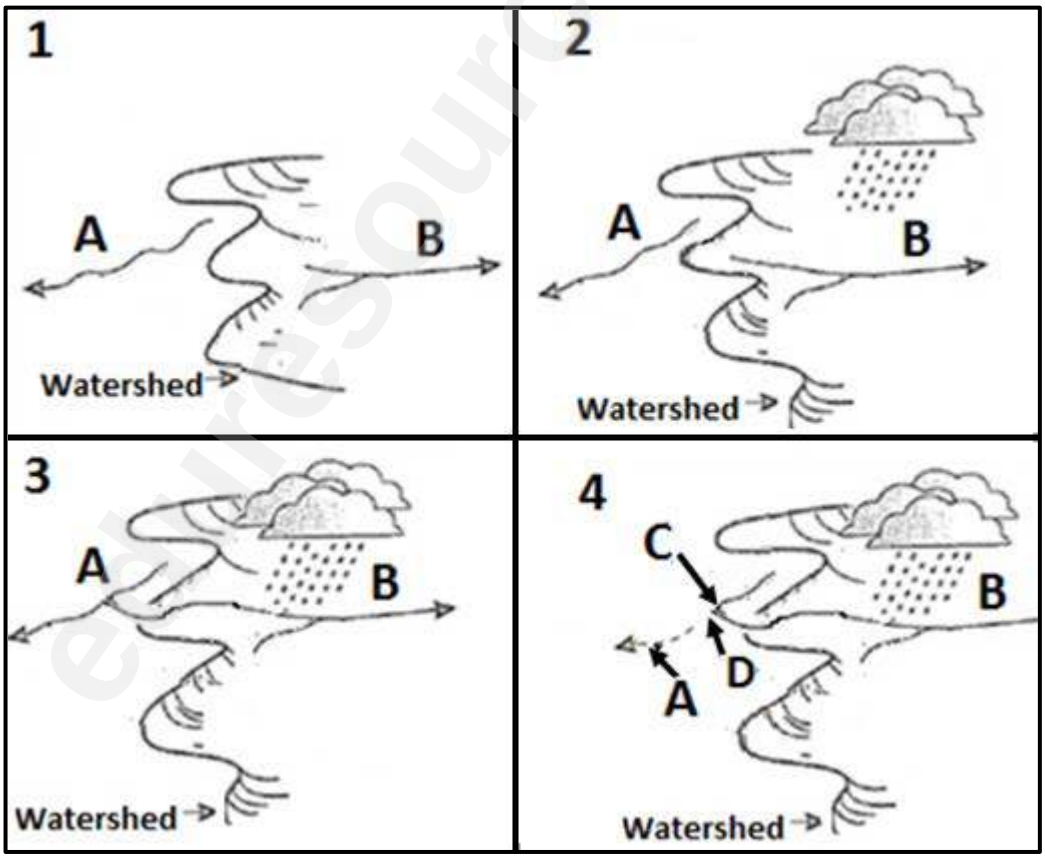
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FIGURE 1.1: ANTICYCLONES



[Source: http://www.aelsnet.net/eportal/pluginfile.php/412/mod_imscp/content/2/influence of_pressure_systems.htm]

FIGURE 1.2: RIVER CAPTURE



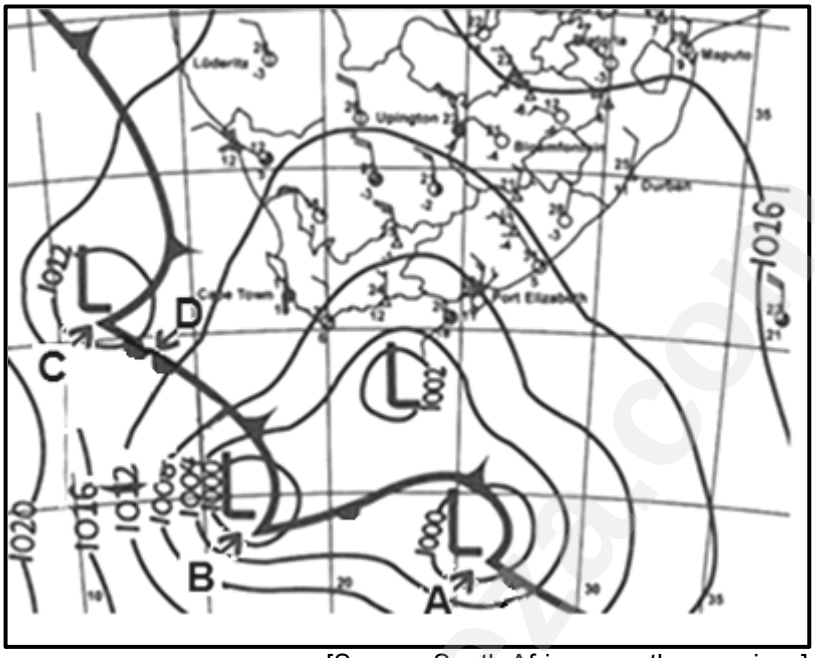
[Adapted from https://www.bing.com/images/search=landforms+of+stream+capture]

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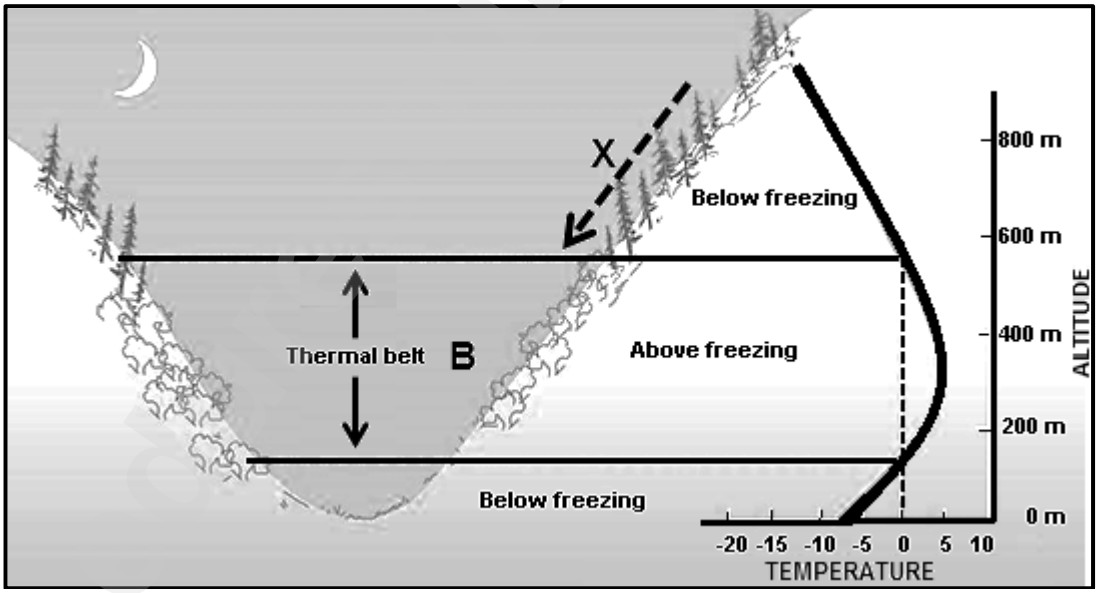
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FIGURE 1.3: MID-LATITUDE CYCLONES



[Source: South African weather services]

FIGURE 1.4: VALLEY CLIMATES



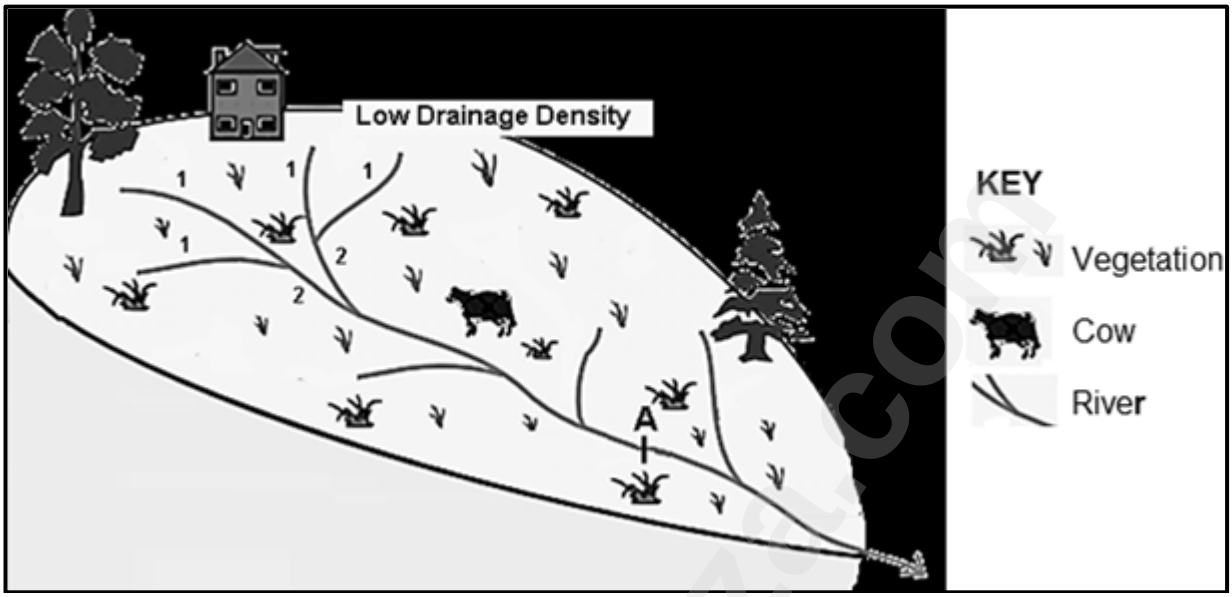
[Adapted from http://apollo.lsc.vsc.edu/classes/met130/notes/chapter3/drainage3.html]

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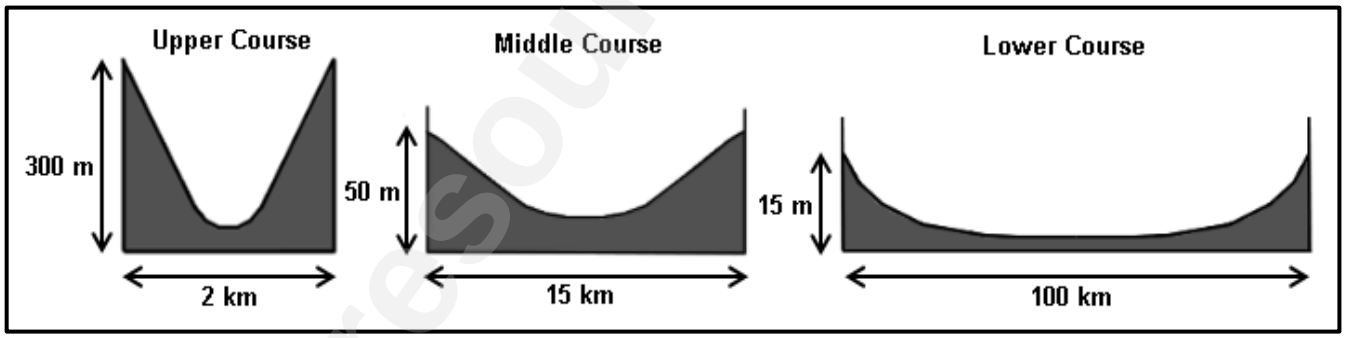
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FIGURE 1.5: DRAINAGE DENSITY



[Adapted from Google Images]

FIGURE 1.6: CHANGING CROSS-PROFILE OF THE VALLEY ALONG A RIVER'S COURSE



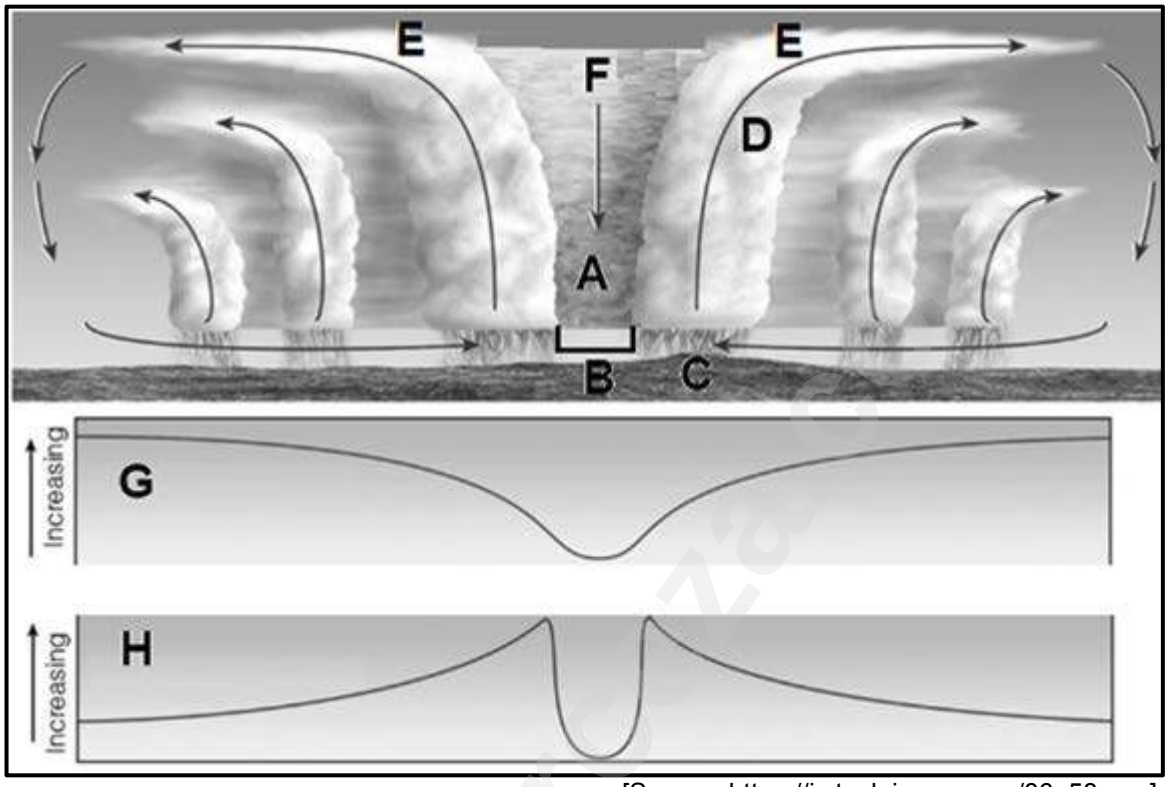
[Adapted from http://www.geography.learnontheinternet.co.uk/topics/longprofile.html]

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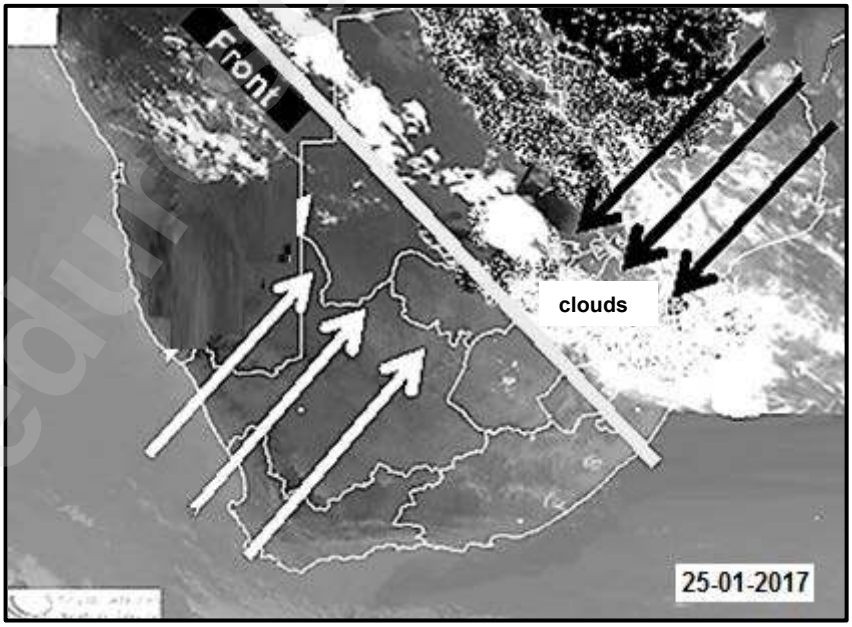
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FIGURE 2.1: TROPICAL CYCLONE CROSS-SECTION



[Source: https://i.stack.imgur.com/86n58.png]

FIGURE 2.3: LINE THUNDERSTORMS OVER SOUTH AFRICA



[Adapted from https://www.bing.com/images/search?=line+thunderstorms+in+south+africa&simid]

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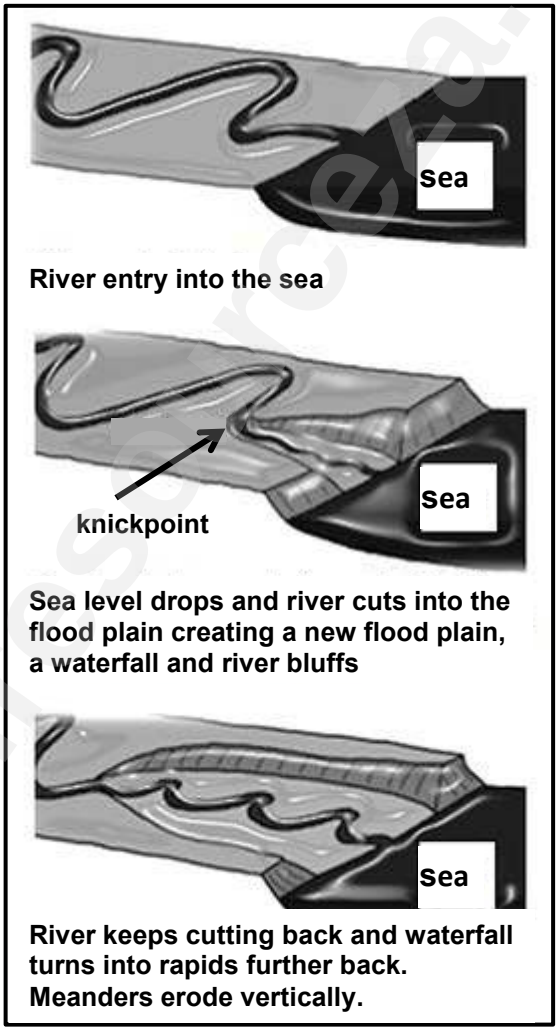
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FIGURE 2.4: POLLUTION DOME



[Source: http://www.metlink.org/secondary/key-stage-]

FIGURE 2.5: RIVER REJUVENATION



[Source: https://alevelrivers.weebly.com/rejuvination.html]

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FIGURE 2.6: DEFORESTATION AND ITS IMPACT ON RIVER MANAGEMENT

GOING, GOING, GONE!

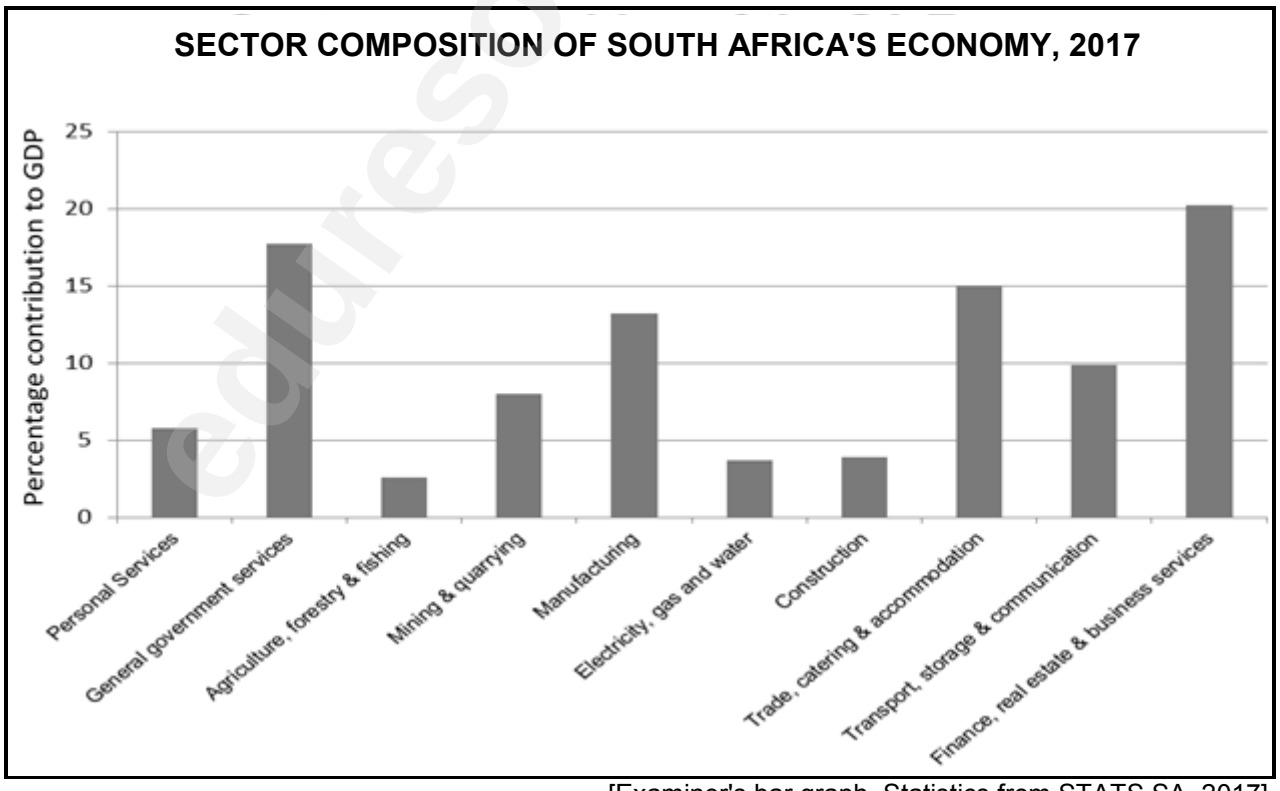
The current rate of deforestation worldwide is of great concern. Currently 12 million hectares of forests are cleared annually – an area 1,3 times the size of KwaZulu-Natal! Almost all of the deforestation occurs in the moist forests and open woodlands of the tropics. At this rate all moist tropical forests could be lost by the year 2050, except for isolated areas in Amazonia, the Zaire basin, as well as a few protected areas within reserves and parks. Some countries, such as Ivory Coast, Nigeria, Costa Rica and Sri Lanka are likely to lose all their tropical forests by the year 2030 if no conservation steps are taken.

DID YOU KNOW?

- The World Resources Institute regards deforestation as one of the world's most pressing land-use problems.
- An area of forest equal to 20 football or rugby fields is lost every minute.
- South Africa's climate is such that less than 0,5% of its surface area is covered with indigenous forest – great care should be taken to conserve the few forests we have.

[Adapted from https://www.environment.co.za/environmental-issues/deforestation.html]

FIGURE 3.2: SECTOR COMPOSITION OF SOUTH AFRICA'S ECONOMY, 2017



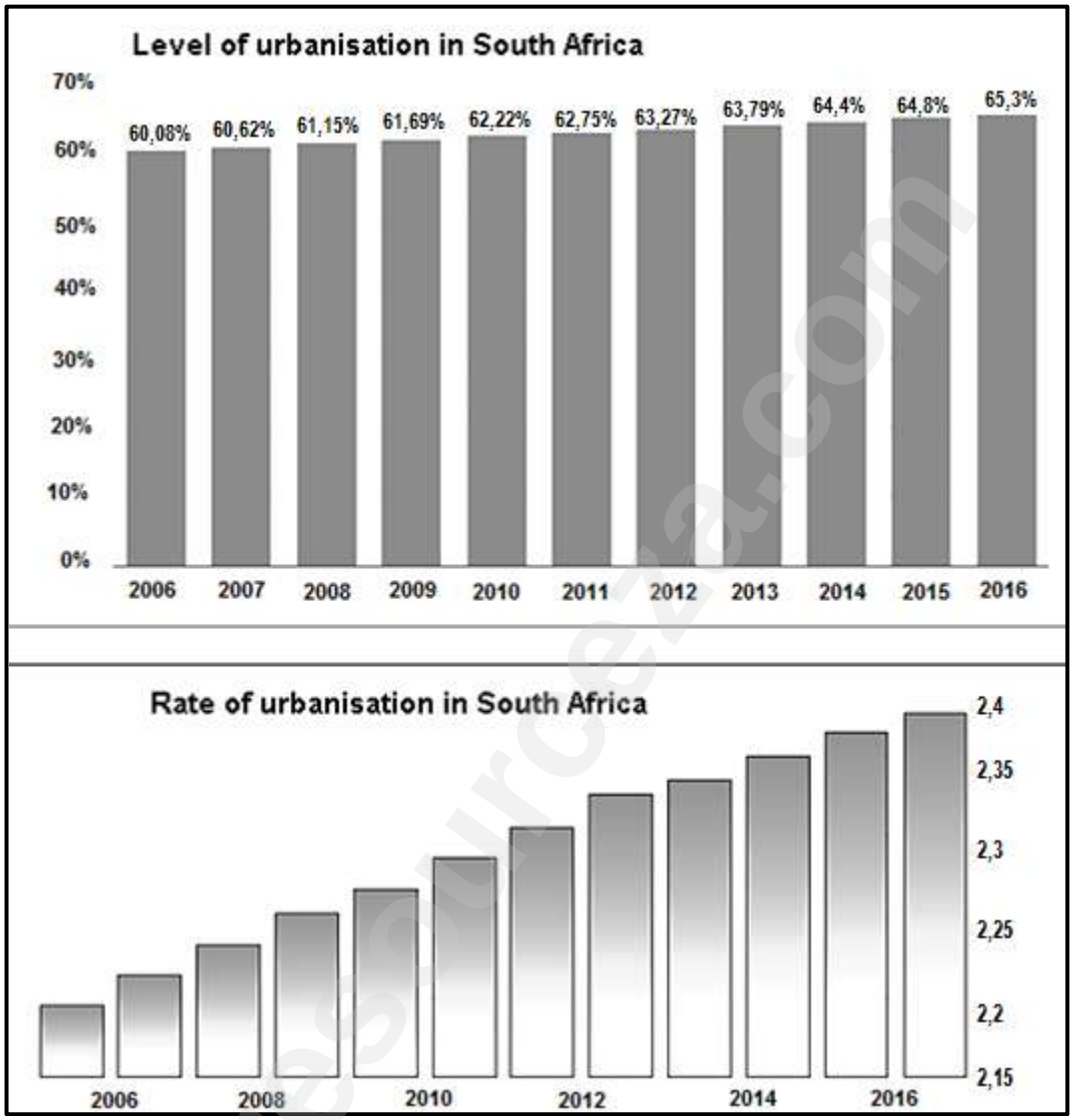
[Examiner's bar graph, Statistics from STATS SA, 2017]

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FIGURE 3.3: LEVEL AND RATE OF URBANISATION IN SOUTH AFRICA



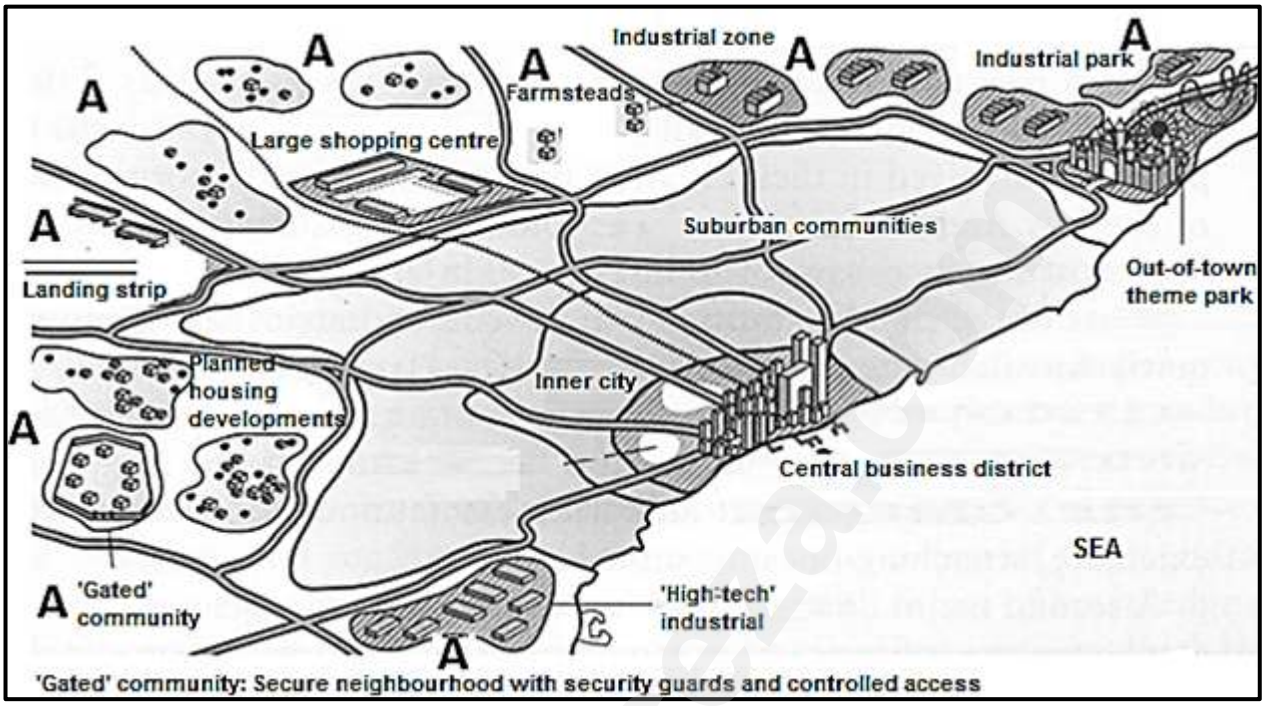
[Source: https://www.statista/com/statistics/455931/urbanization-in-south-africa/ and https://tradingeconomics.com/south-africa/urban-population-growth-annual-percent-wb-data.html]

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FIGURE 3.4: RURAL-URBAN FRINGE



[Adapted from https://newellta.weebly.com/urban-models.html]

FIGURE 3.5: BEEF FARMING

2020 AND BEYOND: A VISION FOR THE SOUTH AFRICAN BEEF INDUSTRY

By Lloyd Phillips, 7 December 2017

In 2016 South Africa became a net red meat exporter for the first time, supplying mainly the cheap beef market.

In 2016 global red meat exports amounted to 9,44 million tons. Brazil led the way, exporting 1,85 million tons or 19,6% of the total. South Africa ranked 15th at 60 000 tons, or 0,64%, of the world total.

The recent drought showed how crucial it was for the country's beef industry to stop focusing on exporting only cheap beef. By exporting higher quality beef, our industry can protect itself from shocks that result in reduced profits.

It must be noted, however, that with the current high beef price in South Africa, the country will be unable to compete against the likes of Brazil and other top beef exporters.

[Adapted from https://www.farmersweekly.co.za/agri-business/agribusinesses/2020-beyond-vision-sa-beef-industry/]

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FIGURE 3.6: EAST LONDON IDZ (ELIDZ)



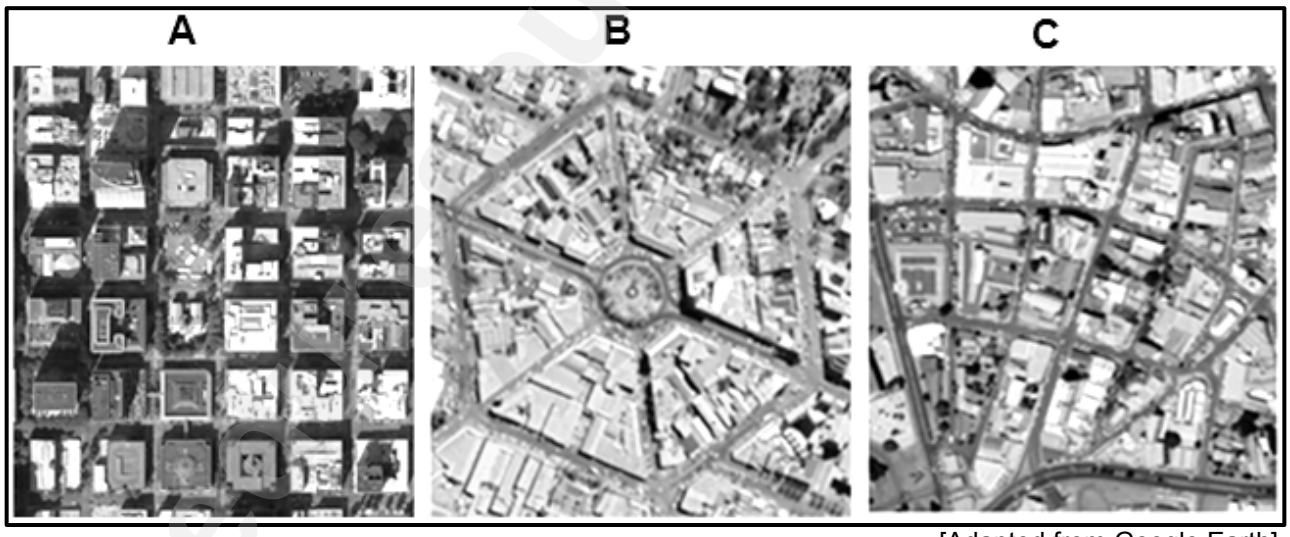
The East London Industrial Development Zone (ELIDZ) has had a tremendous impact on the Eastern Cape according to a report released by Statistics South Africa (Stats SA) in 2016.

The report revealed that there are 3 435 direct manufacturing and services jobs active in the zone.

One of the key highlights from the Stats SA report is the extent of export-orientated manufacturing in this IDZ. The Stats SA report revealed that 36% of the goods manufactured in the ELIDZ during the period of study were for the export market.

[Source: http://www.engineeringnews.co.za/article/elidz-enterprises-impact-local-economy-2017-02-10]

FIGURE 4.1: STREET PATTERNS



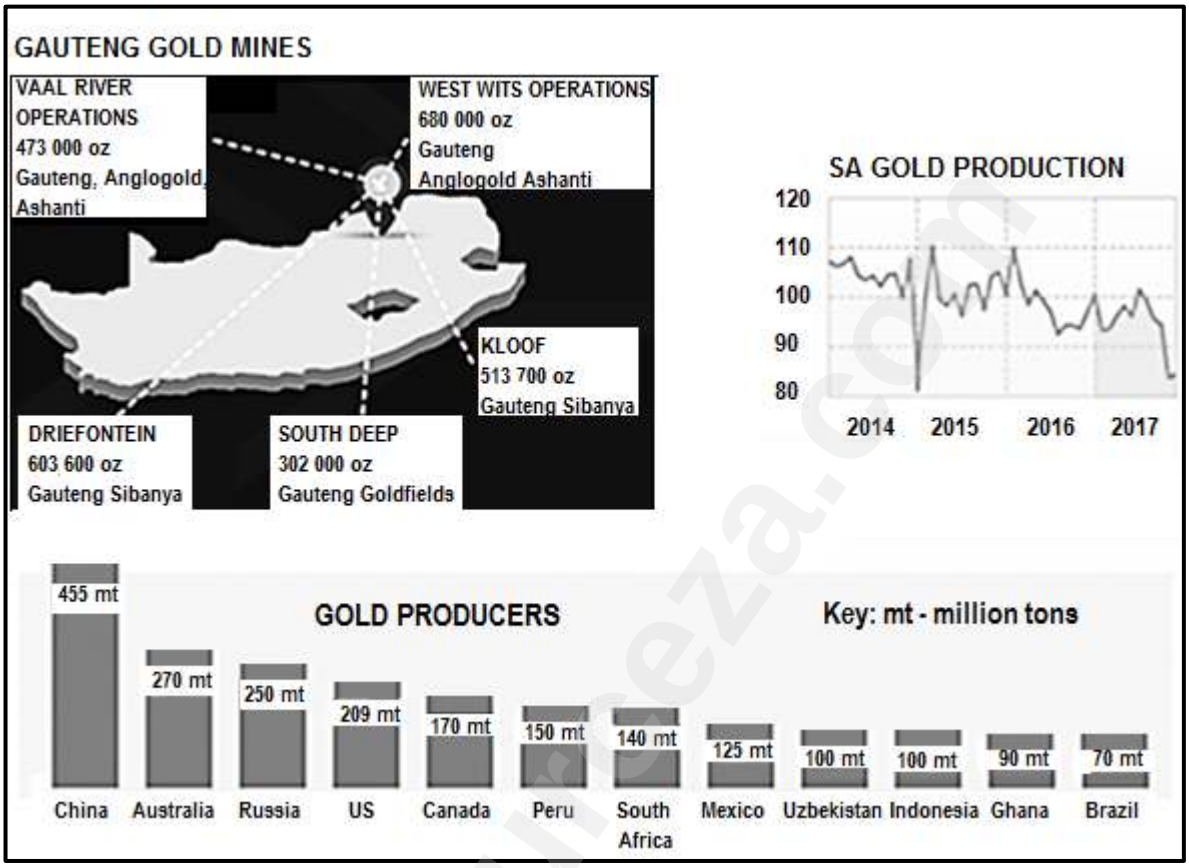
[Adapted from Google Earth]

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FIGURE 4.2: GOLD MINING STATISTICS FOR 2017



[Adapted from http://www.kitco.com/ind/Media/images/South_Africa.jpeg and http://www.statssa.gov.za/wp-content/uploads/2018/02/Infographic_v04-1]

FIGURE 4.3: POOR PUBLIC TRANSPORT AS AN EXAMPLE OF AN URBAN ECONOMIC INJUSTICE

WHAT WILL IT TAKE TO DISRUPT SOUTH AFRICA'S PUBLIC TAXI INDUSTRY?

By Lebogang Tsele, 24 May 2017

The South African public taxi industry is reported to serve 15 million commuters per day. The multi-billion rand minibus taxi industry is still largely unregulated and has challenges, such as unlicensed vehicles, violence and the safety of commuters.

Government has taken drastic measures to curb a number of killings involving two minibus taxi associations in Ladysmith. The MEC for Transport, Community Safety and Liaison, Mxolisi Kaunda, announced that he would be shutting down both the Sizwe transport and Klipriver taxi associations. He described them as conflict ridden and said the department had to use extraordinary means to restore calm, peace and stability.

There are a lot of new businesses, such as Uber and Taxify, and this is causing a lot of discomfort in the industry. However, this would be a much needed change in the industry.

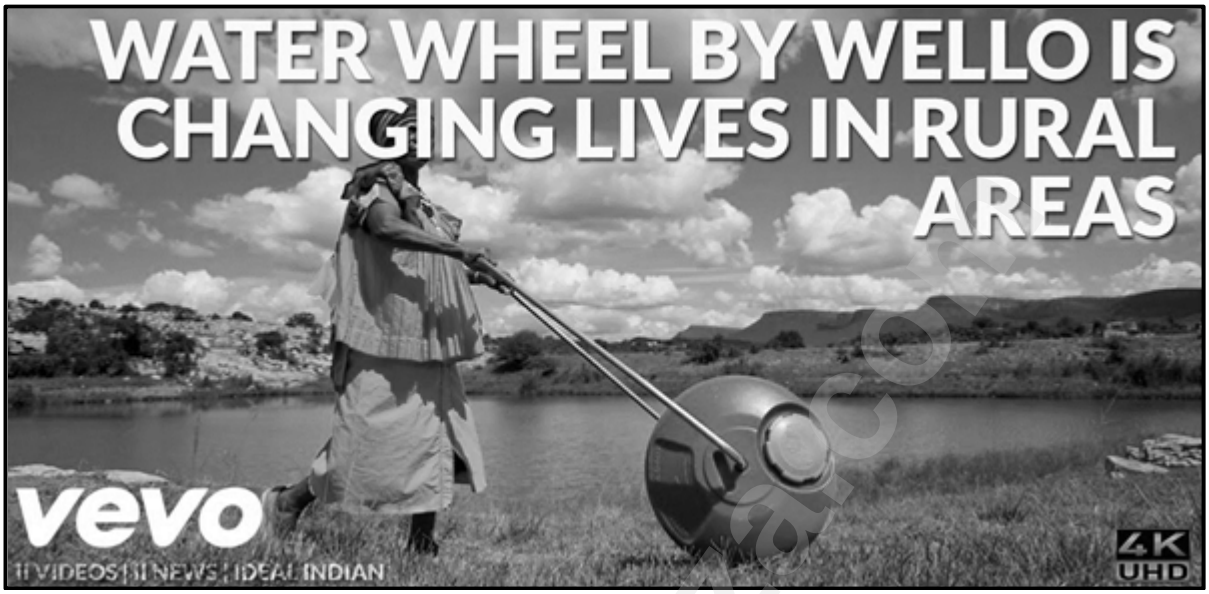
[Adapted from https://www.smesouthafrica.co.za/17264/Tech-To-Disrupt-Taxi-Industry/ and Kaveel Singh in *eNCA*]

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FIGURE 4.4: WATER AS SOCIAL JUSTICE ISSUE IN RURAL AREAS



[Source: https://www.youtube.com/watch?v=DnIZOsH7ezU]

FIGURE 4.5: PWV/GAUTENG INDUSTRIAL REGION

GAUTENG TO REMAIN DOMINANT IN SA ECONOMY UNTIL 2017

By Leandi Kolver

Gauteng continued to dominate the South African economy, contributing nearly 35% to the national gross domestic product, until at least 2017. It is noted that Gauteng's provincial economy was 75% and was made up of tertiary sector industries, including trade, transport, finance and community services. The province was also regarded as the natural destination for international investors wishing to establish a springboard into Africa.

The PWV/Gauteng Industrial Region's diversified manufacturing sector produced more than 50% of South Africa's manufactured exports. The PWV/Gauteng Industrial Region has a number of copper-processing industries, which is supported by raw materials from the Phalaborwa SDI. The diversified manufacturing sector, including copper, will face major challenges in the next three years, including challenges related to energy provision, labour, underinvestment in capital equipment and technology.

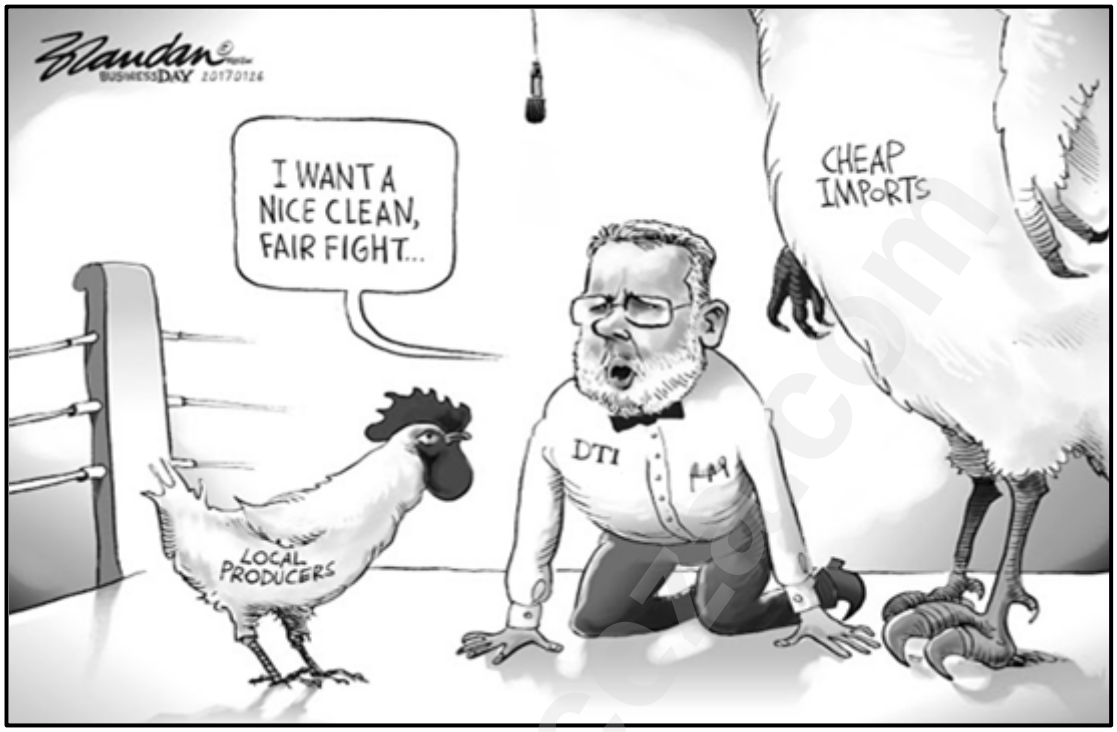
[Adapted from http://www.engineeringnews.co.za/article/gauteng-to-remain-dominant-sa-economy-until-2017-2014-05-14/rep_id:4136]

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FIGURE 4.6: ROLE OF INTERNATIONAL TRADE IN ECONOMIC DEVELOPMENT



[Source: www.google/Business Day; 26 January 2017]

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GRADE 12

GEOGRAPHY P1

NOVEMBER 2018

MARKING GUIDELINES

MARKS: 225

These marking guideline consist of 21 pages.

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SECTION A: CLIMATE, WEATHER AND GEOMORPHOLOGY

QUESTION 1

1.1 1.1.1 north (1)

1.1.2 South Indian (1)

1.1.3 ridge (1)

1.1.4 1016 hPa (1)

1.1.5 10 knots (1)

1.1.6 north west (1)

1.1.7 Subtropical High (1) (7 x 1) (7)

1.2 1.2.1 B (1)

1.2.2 Rainfall/Precipitation (1)

1.2.3 Headward erosion/Backward erosion (1)

1.2.4 A (1)

1.2.5 Elbow of capture (1)

1.2.6 Wind gap (Dry gap) (1)

1.2.7 Misfit Stream (1)

1.2.8 B (1) (8 x 1) (8)

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1.3 1.3.1 Family of cyclones/depressions (1) (1 x 1) (1)

1.3.2 It is further east/south/south-east (2)
Movement is eastwards, therefore **A** is ahead of **B** and **C** (2)
[ANY ONE] (1 x 2) (2)

1.3.3 Less moisture causes less/no rainfall (2)
Warm air from the warm sector is uplifted slowly and more gently (gentle gradient) (creating stratus/altostratus/cirrus and cirrostratus clouds, and causes no rain) (2)
Softer rainfall from nimbostratus clouds (2)
[ANY ONE] (1 x 2) (2)

1.3.4 The cold front catches up to the warm front/two fronts merge (2)
Warm air is displaced off the earth's surface (occluded)/Occlusion has taken place (2)
Warm and cold air masses move horizontally past one another again (2)
[ANY ONE] (1 x 2) (2)

1.3.5 **Once passed over**
Lower temperatures as a result of cold air behind the cold front (2)
Strong winds due to strong pressure gradient (2)
West to south westerly winds/backing as a result of clockwise spiralling air (2)
Dense cloud cover due to strong uplift of warm air (2)
Cumulonimbus clouds will result in heavy rainfall/thunderstorms/hail (2)
Atmospheric pressure will be higher due to the cold, dense air following the cold front (2)
Decreasing humidity due to cold air being more dense (2)
Snowfalls may occur as dewpoint temperature is reached below freezing point (2)
OR
While approaching
Fairly high temperatures will remain as one is still in the warm sector (2)
Gentle to moderate winds as the pressure gradient is weak (2)
Northwest to westerly winds as a result of the clockwise spiralling of air (2)
Low stratus clouds with clear patches as a result of the slow rising air (2)
Stratus clouds could result in scattered rain (2)
Atmospheric pressure will be low as a result of the warm, less dense air (2)
Humidity will be relatively low as warm air is less dense (2)
[ANY FOUR. CREDIT CANDIDATE FOR ANY VALID FACTOR GIVEN] (4 x 2) (8)

1.4 1.4.1 Katabatic wind (1) (1 x 1) (1)

1.4.2 Air temperature increases with height/temperature inversion (1)
The highest temperature is found mid-slope (1)
Air temperature is warmer (1)
Temperature is above freezing (1)
[ANY ONE] (1 x 1) (1)

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1.4.3 (Temperature) inversion/Valley inversion/Negative lapse rate (1) (1 x 1) (1)

1.4.4 Air temperatures are much lower (2)
Air is heavier and denser (2)
Increased intensity of downward movement of air/Cold air moves down the slope quickly (2)
[ANY TWO] (2 x 2) (4)

1.4.5 Collection of cold, dense air at the bottom of the valley (2)
Warm air is displaced from the valley floor (2)
Frost forms on the valley floor (2)
Gravity causes cold air to drain towards the valley floor (2)
Dew point temperature below freezing point (2)
[ANY TWO] (2 x 2) (4)

1.4.6 Only frost resistant crops can be planted here/Grow fruit with thick resistant skin, e.g. citrus (2)
Genetically modified seeds adapted for frost conditions (2)
Torches and fire drums (heating systems) to keep air circulating so that temperatures do not drop below 0 °C/anti-frost heating to protect crops (2)
Fans to keep air circulating (2)
Mechanisms to divert subsiding wind (diversion walls) away from crops (2)
Straw in between crops to reduce terrestrial radiation (mulching) (2)
Glass houses (greenhouses) can be built to create an artificial micro-climate for sensitive crops (2)
Cover plants with frost covers (2)
[ANY TWO] (2 x 2) (4)

1.5 1.5.1 There are very few tributaries (1)
Few streams cover a large area (1)
[ANY ONE] (1 x 1) (1)

1.5.2 Low/soft rainfall will increase infiltration and decrease run-off (2)
Gentle gradient will increase infiltration and decrease run-off (2)
More vegetation cover will increase infiltration and decrease run-off (2)
Permeable soil will increase infiltration and decrease run-off (2)
Porous rock will increase infiltration and decrease run-off (2)
Drier soil will increase infiltration and decrease run-off (2)
High evaporation rate reduces water available for surface run-off (2)
Little development therefore few artificial surfaces to prevent infiltration (2)
Low rainfall will result in fewer streams (2)
[ANY TWO] (2 x 2) (4)

1.5.3 There will be more first order streams/fingertip streams (2)
The order of subsequent streams will increase (2)
Stream order at A will increase (2)
3rd order to higher order (2)
[ANY ONE] (1 x 2) (2)

1.5.4 Clearing of natural vegetation/deforestation will increase run-off (2)
Overgrazing by animals removes natural vegetation which increases run-off (2)
Incorrect ploughing methods can result in more water flowing down the furrows (2)
Over-cultivation of farmland destroys vegetation and top soil (2)

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The loss of topsoil due to human activities can result in the formation of gullies (dongas) (2)
Building of settlements increases artificial surfaces therefore more run-off (2)
Building of canals to divert run-off create more river channels (2)
Building of roads reduces natural vegetation which increases run-off (2)
Open cast mining causes removal of natural vegetation increasing run-off (2)
Trampling of soil by livestock decreases infiltration (2)
[ANY FOUR. CANDIDATE MUST INDICATE HOW THE FACTOR RESULTED IN A HIGHER DRAINAGE DENSITY] (4 x 2) (8)

1.6 1.6.1 Upper course (1) (1 x 1) (1)

1.6.2 Width/Breadth (1)
Depth (1)
Shape (1)
Heights of interfluves change (1)
[ANY TWO. ACCEPT DESCRIPTION OR MEASUREMENTS] (2 x 1) (2)

1.6.3 In the upper course vertical/downward erosion takes place (2)
In the lower course deposition/lateral erosion takes place (2) (2 x 2) (4)

1.6.4 (Increased) lateral erosion/(decreased) downward erosion results in a river valley widening (2)
Sheet flow down the valley slopes will result in the lowering of the slopes (2)
River slows down in the middle course causing deposition which decreases the depth of the valley (2)
More gentle gradient in the middle course causing deposition which decreases the depth of the valley (2)
Meandering river will widen the valley floor (2)
Where the river exits the confines of the mountain, the river valley will be wider (2)
Greater volume of water and lower velocity will increase lateral erosion in the middle course (2)
[ANY TWO] (2 x 2) (4)

1.6.5 In the upper course of the river the valley is narrow (2)
Cost of construction of the dam wall will be cheaper (2)
The rocky banks will make the structure stronger (2)
The dam will be deeper because of the deep valley (2)
Cooler temperatures at higher altitude, therefore less evaporation (2)
Smaller water surface area reduces evaporation rates (2)
A deeper dam will have an increased capacity (2)
Less silt in the dam as there are fewer tributaries that enter the dam (2)
Steepness of slope allows easy flow of water into a dam (2)
[ANY TWO] (2 x 2) (4)
[75]

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QUESTION 2

2.1 2.1.1 Eye (1)

2.1.2 Low (1)

2.1.3 Heavy (1)

2.1.4 Updraughts (1)

2.1.5 Diverging (1)

2.1.6 High (1)

2.1.7 Pressure (1)

2.1.8 Wind Speed (1) (8 x 1) (8)

2.2 2.2.1 E (Floodplain) (1)

2.2.2 G (Levee) (1)

2.2.3 C (Meander) (1)

2.2.4 F (Oxbow Lake) (1)

2.2.5 D (Braided stream) (1)

2.2.6 H (Waterfall) (1)

2.2.7 B (Delta) (1) (7 x 1) (7)

2.3 2.3.1 Moisture front (1) (1 x 1) (1)

2.3.2 A band of cloud stretching from the NW to the SE of the country (2)
(Cumulonimbus) clouds arranged in a line from the NW to the SE (2)
Converging air masses over the interior of the country (2)
Presence of the moisture front (2)
[ANY ONE] (1 x 2) (2)

2.3.3 Low pressures over the land during summer, draw in moisture off the oceans onto the land (2)
Inversion layer above escarpment in summer allows inflow of moist air (2)
Increased convergence of air masses from well-developed high-pressure cells along the coast (2)
Weakened Kalahari High Pressure Cell facilitates greater vertical rising of air above the interior (2)
Presence of trough over the interior during summer (2)
[ANY ONE] (1 x 2) (2)

2.3.4 Warm moist air from above the Indian Ocean/Warm Mozambique/Warm Agulhas Current (2)
Warm moist tropical air diverging from the South Indian High Pressure Cell (2)
Warm moist air from the North-easterly winds (2)
[ANY ONE] (1 x 2) (2)

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2.3.5 Warm moist air from the east (more moisture) reaches the interior (2)
Cold dry dense air from the west forces warm moist less dense air to rise (2)
Air on the eastern side is more unstable (2)
Large scale condensation results in dense cloud formation (2)
[ANY TWO] (2 x 2) (4)

2.3.6 Has a longer duration (2)
They cover a greater/widespread area (2)
Damage is more widespread (2)
Continuous feeding of moisture from the ocean (2)
Constant formation of cumulonimbus clouds along the moisture front (2)
Stronger upliftment/rapid rising and condensation along the moisture front (2)
Torrential or heavy rainfall and/or hail (2)
Occurs any time of day (2)
OR
Has a much shorter duration (2)
Isolated thunderstorms are over a small area (2)
Isolated thunderstorms will result in damage that is not widespread (2)
Isolated thunderstorms do not have a continuous source of moisture (2)
Only occurs during late afternoon (2)
[ANY TWO. CANNOT REFER TO THE SAME FACTOR ON BOTH SIDES]
(2 x 2) (4)

2.4 2.4.1 An accumulation of dust, soot and smoke (pollution) particles over the city (1)
[CONCEPT] (1 x 1) (1)

2.4.2 Urban areas produce more pollution/combustion released by cars, industries and other activities/More human activities (2) (1 x 2) (2)

2.4.3 During the night subsidence is stronger/trapped closer to the ground/ inversion layer is closer to the surface at night (2)
Less activity resulting in heat generation to lift pollution dome (2)
Pollution covers a smaller area (2)
Less convection/thermal currents to distribute pollution at night (2)
[ANY TWO] (2 x 2) (4)

2.4.4 Soot accumulation on buildings results in more cleaning services needed (2)
Results in acid rain which results in peeling of paint of buildings (2)
Buildings must be painted more often (2)
Concrete surfaces become pitted (holes) and must be maintained/renovated more frequently (2)
Metal structures such as metal window frames/air conditioners become corroded because of the acid rain/renovated more often (2)
Replacing damaged material with good quality/durable material is costly (2)
Regular replacement/purchase of air conditioner filters (2)
More regular painting of road markings as acid rain makes it peel easier (2)
High pollution results in higher rainfall and can cause flood damage (2)
Damaged plants in gardens to be replaced (2)
Water reservoirs/dams become polluted and money spent to purify water (2)
[ANY FOUR] (4 x 2) (8)

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2.5 2.5.1 When a river is eroding the landscape downwards in response to a lowering/change of its base level (1)
River rejuvenation is a process where rivers (are re-energised to) actively erode downward again (1)
[CONCEPT] (1 x 1) (1)

2.5.2 A drop in the sea level (1) (1 x 1) (1)

2.5.3 Waterfall/rapids (1) (1 x 1) (1)

2.5.4 Rejuvenated rivers will be ungraded/obstructions along the course as a result of renewed downward erosion (2)
River will now show a multi-concave profile (2)
Temporary base levels of erosion will develop (examples: knickpoint, rapids, waterfall) (2)
Overgraded river as renewed downward erosion now takes place (2)
Vertical erosion downstream of the knickpoint dominates (2)
The balance between erosion and deposition is disturbed (2)
[ANY TWO] (2 x 2) (4)

2.5.5 Knickpoints can form because of the old erosion level meeting the new erosion levels (2)
The knickpoint retreats upstream (2)
Waterfall can form at the knickpoint due to the break/lowering along the course of the river (2)
Waterfalls can turn into rapids (2)
Meanders will become more incised and entrenched (erode vertically) (2)
River cuts into the flood plain and a new flood plain develops (2)
A valley within a valley forms because of vertical erosion (2)
Valleys with multi-terraced slopes will form (2)
River channel becomes narrower (2)
New floodplain is narrower than the original flood plain (2)
More meanders develop (2)
[ANY FOUR] (4 x 2) (8)

2.6 2.6.1 Deforestation is the removal of trees/natural vegetation/Cutting down of trees quicker than it can be replaced (1)
[CONCEPT] (1 x 1) (1)

2.6.2 (a) 2050 (1) (1 x 1) (1)

(b) KwaZulu-Natal/KZN (1) (1 x 1) (1)

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2.6.3 Decreased carrying capacity (2)
River blockage (2)
Reduce water quality (2)
Rivers/dams become shallower (2)
Increases the stream load (2)
Disrupt ecosystem of the river (2)
Disrupt biodiversity in a river (2)
Increased flooding of river system (2)
Less infiltration (2)
Decrease in groundwater levels (2)
Reduction in base flow (2)
More evaporation dries soil out (2)
Greater erosion along river banks (2)
Lowering of levees (2)
More polluting of the rivers and eutrophication (2)
[ANY TWO] (2 x 2) (4)

2.6.4 Legislation to protect areas that are prone to deforestation (2)
Fines to those who illegally remove trees (2)
Implement more afforestation within the river system (2)
Create awareness of the negative impacts of deforestation (2)
Educate people on the importance of good river management systems (2)
Promote conservation and establish more protected areas to prevent deforestation (2)
Create a buffer zone for protection of natural forests (2)
Protect river banks from deforestation (2)
Rehabilitation of forests/afforestation (2)
Encourage recycling to reduce deforestation (2)
[ANY TWO] (2 x 2) (4)

2.6.5 Poor river management will result in less water being available (2)
Poor quality of the water will result in higher purification costs (2)
Water is unsafe for human consumption (2)
Increased siltation of dams will compromise water quality (2)
Shortage of good quality water would make it more expensive (2)
More run-off reduces groundwater supply (2)
Expensive to implement inter-basin water transfer schemes (2)
Less water for domestic, industrial and agricultural use (2)
[ANY TWO] (2 x 2) (4)
[75]

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SECTION B: RURAL AND URBAN SETTLEMENTS AND ECONOMIC GEOGRAPHY OF SOUTH AFRICA

QUESTION 3

3.1 3.1.1 Linear (1)

3.1.2 Stellar (1)

3.1.3 Semi-circular/Linear (1)

3.1.4 Circular (1)

3.1.5 Nucleated (1)

3.1.6 Cross-shaped (1)

3.1.7 Dispersed (1)

3.1.8 T-shaped (1) (8 x 1) (8)

3.2 3.2.1 B (GDP) (1)

3.2.2 D (Finance, real estate and business services) (1)

3.2.3 B (Electricity, gas and water) (1)

3.2.4 D (Agriculture, forestry and fishing) (1)

3.2.5 B (Manufacturing) (1)

3.2.6 C (Electricity, gas and water) (1)

3.2.7 C (77%) (1) (7 x 1) (7)

3.3 3.3.1 A process whereby an increasing percentage of people live in urban areas (1)
[CONCEPT] (1 x 1) (1)

3.3.2 As the rate of urbanisation increases the level of urbanisation increases (2)
It is a directly proportional relationship (2)
[ANY ONE] (1 x 2) (2)

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3.3.3 Drought frequency in rural areas increases rural-urban migration (2)
Flood frequency destroy crops causing people to leave rural areas (2)
Stronger El Niño increases droughts and/or floods (2)
Soil erosion decreases production on farm lands forcing people to leave (decrease in soil fertility/desertification) (2)
Stock/crop diseases/pests and stock losses/decreases in crop yields forces farmers to abandon farm lands and move to urban areas (2)
Adverse weather conditions e.g. hail storms destroy crops and this negatively affects production and leads to decreased profits (2)
[ANY TWO. LISTING ALONE CANNOT BE ACCEPTED – MUST BE QUALIFIED] (2 x 2) (4)

3.3.4 Urbanisation (percentage increase of people) has increased the demand for housing in urban areas (2)
The inability of the local government to meet this demand has led to protest actions (2)
Lack of planning from the local government to meet demands for services (2)
Lack of services (electricity, water, sanitation) in informal settlements and people are not happy about this (2)
Unreliable service delivery impacts on daily activities (2)
Services are not properly maintained, therefore quality deteriorates (2)
Urbanisation increased unemployment rates which has frustrated people (2)
There is an increased demand on services such as clinics and hospitals reducing accessibility for people (2)
Traffic congestion as there are not enough roads/unmaintained roads (2)
Lack of space in schools due to high population numbers (2)
Protest due to forced removals and demolition of informal settlements which leaves people without shelter (2)
Protests due to lack of land ownership and access to land (2)
Protests due to competition with foreigners for houses and employment (2)
People are unhappy about nepotism and corruption which is preventing them from accessing government services e.g. housing (2)
[ANY FOUR. REASONS FOR PROTEST ACTIONS MUST BE GIVEN]
(4 x 2) (8)

3.4 3.4.1 The rural-urban fringe is the boundary/transition between the urban edge and the rural periphery where rural and urban functions are mixed (1)
[CONCEPT] (1 x 1) (1)

3.4.2 Landing strip (1)
Large shopping centre (1)
Gated communities (1)
Out of town theme park (1)
High-tech industrial (1)
Industrial park (1)
Industrial zone (1)
Planned housing developments (1)
[ANY TWO] (2 x 1) (2)

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3.4.3 Urban sprawl reduces the extent of the rural-urban fringe (2)
Cheaper land in the rural-urban fringe makes it lucrative for development (2)
Increase in world urban population (2)
Improved technologies allow people to live further from urban areas (2)
People prefer/afford to commute to urban areas (2)
Peaceful environments/larger properties/less pollution/aesthetically pleasing (2)
Counter- urbanisation is encouraged (2)
Development of infrastructure/roads increase accessibility/less congested (2)
Decentralisation of businesses (2)
Sought after location is a pull factor (2)
Higher standard of living allows people to commute over longer distances (2)
[ANY TWO] (2 x 2) (4)

3.4.4 Cheaper land is ideal as large areas are required (2)
Land values lower in the periphery for development (2)
More space required for multifunctional purposes (2)
Rural atmosphere creates a more tranquil/peaceful lifestyle (2)
Away from polluted urban areas (2)
Aesthetic beauty (2)
Usually built around golf courses/recreational areas/parks (2)
Can still commute to urban areas without travelling a great distance (2)
Greater sense of security/less crime (2)
Provision of amenities/services within the gated community (2)
More flexible bylaws/development freedom (2)
[ANY TWO] (2 x 2) (4)

3.4.5 Encroachment on farming land (2)
Job losses amongst farm workers (2)
Food insecurity may increase (2)
Increased deforestation (2)
Destroys ecosystems (2)
Reduces biodiversity (2)
Change in the local climate (2)
Loss of aesthetic appeal/tranquillity (2)
Urban sprawl/uncontrolled urban expansion/rural and urban functions mix (2)
Re-zoning of land use (2)
Conflict between municipality and traditional leaders/land earmarked for land reform (2)
Increase in land values (2)
Exclude the poor from access to land/forced removals (2)
Inadequate compensation for land required for development (2)
Existing services will be put under pressure (2)
Increased waste disposal/land pollution/air pollution (2)
Increased traffic congestion (2)
Potential increase in crime (2)
[ANY TWO] (2 x 2) (4)

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3.5 3.5.1 Brazil (1) (1 x 1) (1)

3.5.2 'South Africa became a net red meat exporter for the first time' (1) (1 x 1) (1)

3.5.3 (a) Make less money as poor quality beef does not fetch high prices (1)
Countries buy less as a result of poor quality (1)
[ANY ONE] (1 x 1) (1)

(b) Improved breeding programmes/research will increase the quality of the beef (2)
Prevent overstocking/Do not exceed carrying capacity (2)
Industrial beef cattle farming (2)
Regular vaccination to prevent diseases (2)
Regular health checks of cattle (2)
Free range farming improves quality of beef (2)
Genetically modified species/scientific methods to improve stock yields (2)
Increase education and skills of farmers/research and development (2)
More agricultural officers to educate small scale and new farmers (2)
Access to funding to improve mechanisation and technology (2)
Government subsidies and grants will improve processing techniques (2)
Accelerate the process of land reform (2)
Improved pasturage and feeding will result in healthier cattle (2)
[ANY TWO] (2 x 2) (4)

3.5.4 Water shortages reduces stock numbers (2)
Regular droughts reduce the amount and quality of stock for export markets (2)
Small-scale (subsistence or commercial) farming can result in less production for markets (2)
Commercial farmers abandon their farms and beef production decreases (2)
A huge demand for beef within South Africa decreases exports (2)
Low government subsidies push up prices (2)
Large distances to overseas markets increases the costs of exportation (2)
Expensive to refrigerate beef products during transportation (2)
Cattle diseases e.g. foot and mouth/mad cow disease reduces meat availability for export markets (2)
Low quality of natural grazing reduces the amount of stock (2)
Unclear land reform policies slows down beef production while outcomes are awaiting (2)
Stock theft reduces the amount of stock (2)
Increased cost of fodder during drought/winter results in beef farmers reducing stock numbers (2)
Veld fires reduce natural grazing and therefore stock (2)
Medication against diseases expensive and increase farming costs (2)
Poor exchange rate reduces profits for beef farmers (2)
Price fluctuations reduce profit (2)

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Increase in production costs (machinery/labour) reduces stock numbers and profits (2)
Trade barriers discourage cattle farming (2)
Youth do not pursue farming/Loss of skilled farmers therefore beef production is low (2)
Lack of scientific breeding methods keeps beef production low (2)
Limited beef processing plants limits the export of beef products (2)
Traditionally cattle is regarded as a symbol of wealth and subsistence farmers are reluctant to sell their cattle (2)
Small-scale farmers cannot access loans from banks and cannot afford the increasing production costs (2)
[ANY FOUR] (4 x 2) (8)

3.6 3.6.1 Eastern Cape (1) (1 x 1) (1)

3.6.2 Investments worth R1.3 billion (1)
Job creation (1)
Increased exports (1)
Foreign income earned (1)
Export-orientated manufacturing (1)
[ANY TWO] (2 x 1) (2)

3.6.3 Harbour was upgraded (2)
Upgrading of rail network (2)
New roads were built (2)
Existing roads were upgraded (2)
Airport facilities were upgraded (2)
Improved communication networks (2)
Improved electricity distribution grids (2)
More emphasis on renewable/green energy (2)
Improve supply and accessibility to water (2)
Upgrading of the built environment (2)
[ANY TWO] (2 x 2) (4)

3.6.4 Fully developed stands at cheaper rate (2)
Provide fully developed infrastructure (2)
Tax rebates (2)
Duty-free imports (2)
Zero rate on VAT for all suppliers procured in South Africa (2)
Zone specific local incentive packages (2)
Discounted utility services e.g. electricity (2)
Relocation rebates (2)
Provincial subsidised training of workforce (2)
Housing for employees (2)
Transport rebates (2)
[ANY TWO] (2 x 2) (4)

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3.6.5 Higher revenue for exported manufactured products (2)
Sell larger volumes in the international market, therefore more profit (2)
Multiplier Effect – will lead to new industrial development, thus promotes the growth of the industrial sector (2)
Higher profits due to a more favourable foreign exchange rates (2)
Exportation will bring more foreign currency into the country (2)
Greater contribution to the GDP (2)
More job creation improves local trading markets (2)
Higher income per capita for ELIDZ improves the provincial fiscal treasury (2)
Standard of living in the Eastern Cape improves because more people are gainfully employed in skilled, semi-skilled and unskilled activities (2)
Improved infrastructure and transport networks benefits trade (2)
[ANY TWO] (2 x 2) (4)

[75]

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QUESTION 4

4.1 4.1.1 A/gridiron (1)

4.1.2 B/radial concentric/cobweb (1)

4.1.3 A/gridiron (1)

4.1.4 B/radial concentric/cobweb (1)

4.1.5 C/irregular (1)

4.1.6 A/gridiron (1)

4.1.7 C/irregular (1) (7 x 1) (7)

4.2 4.2.1 Gauteng (1)

4.2.2 West Wits Operations (1)

4.2.3 Anglo Gold Ashanti (1)

4.2.4 China (1)

4.2.5 7th (1)

4.2.6 140 + 90 = 230mt (1)

4.2.7 2014 (1)

4.2.8 Decreasing (1) (8 x 1) (8)

4.3 4.3.1 Taxis/Minibus taxis (1) (1 x 1) (1)

4.3.2 High cost for poor service delivery/no value for money (1)
Higher costs when other transport not available (1)
No operational licences issued/unregulated (1)
During strikes commuters cannot get to work/loss of salary/productivity (1)
Reckless driving puts strain on Road Accident Fund (1)
Do not pay taxes (1)
[ANY ONE] (1 x 1) (1)

4.3.3 Taxi associations were closed down (by the Minister of Transport) (1)
(1 x 1) (1)

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4.3.4 People can't afford to own their own private vehicles/Too poor to afford own transport (2)
Taxis are cheaper than some other public transport systems (2)
People live far from their place of work and taxis are quicker (2)
Accessibility and convenience of taxis from home to place of work (2)
Other public transport systems are unreliable (2)
Taxis are more flexible in their routes and stops (2)
Historical reliance on taxis (2)
Increase in toll roads (2)
Increase in petrol prices (2)
[ANY TWO] (2 x 2) (4)

4.3.5 They are going to lose money as a result of less commuters (2)
Competition is not good for the taxi business (2)
They will reduce their daily share of business/afraid of losing the market (2)
Taxi drivers can lose their jobs (2)
[ANY TWO] (2 x 2) (4)

4.3.6 Regulate the taxi industry/taxi ranks through legislation (2)
Regulate the private service providers like Uber and Taxify (2)
Bring together the various transport providers, to foster healthy competition, and to work together in peace and harmony (2)
More vigilance from government in policing/monitoring taxi associations (2)
The Minister of Transport/Police can close specific problematic routes (2)
Possible allocation of different routes to associations (2)
Effective prosecution of those who incite violence within the taxi industry (2)
Educating operators (imbizos) on responsibilities (2)
More monitoring by traffic officers (2)
Issue more operational licences where there is a demand (2)
Shut down taxi routes for a period of time during the day (2)
Implementing card systems to regulate operational routes within the taxi industry (2)
[ANY TWO] (2 x 2) (4)

4.4 4.4.1 Wheelbarrows/donkey carts/on their heads/buckets/drums/bottles/ (1)
[ANY ONE] (1 x 1) (1)

4.4.2 Transportation of water is easier/more accessible (2)
It saves time to fetch the water (2)
More water can be collected therefore fewer trips (2)
Enclosed container therefore less water losses (2)
Enclosed container therefore fresher water (2)
[ANY ONE] (1 x 2) (2)

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4.4.3 Increase agricultural production/assists subsistence farmers (2)
Sustainable farming (2)
Higher profits (2)
Spent less time on collecting water, therefore more time for schooling (2)
Increased employment/generates income (2)
Reduces burden of time and volume required to improving the standard of living and economic viability (2)
Development of home industries (2)
[ANY ONE] (1 x 2) (2)

4.4.4 Apartheid legacy of access to water in rural areas (2)
Lack of funding for improved infrastructure (2)
Not economically viable in sparsely populated areas (2)
Lack of planning and development in rural areas (2)
Population increase faster than infrastructure development (2)
Poor maintenance of existing infrastructure network (2)
Mismanagement of funds (corruption) by the government (2)
Boreholes not accessible/privately owned (2)
Theft of water infrastructure (2)
Not enough qualified people to maintain water infrastructure (2)
Focus placed on urban areas and industrial development (2)
Diversion of water resources (2)
Poor/cheap quality materials used to maintain water infrastructure (2)
[ANY ONE] (1 x 2) (2)

4.4.5 The infrastructure needs to be developed for piped water to homes (2)
Build/upgrade more dams to store water (2)
Install more Jo-Jo tanks to harvest and store water (2)
Digging of more boreholes to tap into groundwater sources (2)
Encouraging the recycling of grey water prevents wastage (2)
Filtration of polluted water (2)
Reversed osmosis to produce clean water (2)
Government allocating more funds to secure clean water (2)
Utilise inter-basin water transfer schemes where there is a lack of water (2)
Upgrading and maintenance of existing water network systems (2)
Education in the wise usage of water (2)
Improved farming practices to promote infiltration (2)
Use organic fertilisers to prevent pollution of water (2)
Improve catchment management systems (2)
Recharge aquifers to maintain groundwater volumes (2)
Remove alien/exotic vegetation to reduce the usage of water (2)
Improved irrigation techniques to save water (2)
Subsidising of the Wello water wheel (2)
[ANY FOUR] (4 x 2) (8)

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4.5 4.5.1 '… contributing nearly 35% to the national gross domestic product, until at least 2017' (1)
' … produced more than 50% of South Africa's manufactured exports' (1)
[ANY ONE] (1 x 1) (1)

4.5.2 Good energy security secures uninterrupted energy supply (2)
Many skilled/unskilled labourers ensure a high level of productivity (2)
Capital and technology to maintain high levels of production (2)
Wide variety of raw materials to support industrial development (2)
Well-developed transport system to transport raw materials/goods (2)
OR Tambo provides access to international investors (2)
A well-developed infrastructure providing essential services (2)
Wide variety of established secondary and tertiary industries (2)
Johannesburg Security Exchange (JSE) is located in the PWV/Gauteng (2)
Commercial and economic hub of South Africa (2)
Dense/large population creates readily available market/higher purchasing power (2)
Flat land facilitates the development of new industries (2)
Access to water resources is more favourable (2)
[ANY ONE] (1 x 2) (2)

4.5.3 (a) Abundance of copper mined there (2)
Close proximity to PWV/Gauteng Industrial Region (2)
Accessibility via roads/railways (2)
Saving on transport costs (2)
[ANY ONE] (1 x 2) (2)

(b) Attracts more investors to the region (2)
Creates more employment opportunities (2)
Entrepreneurial skills are improved (2)
Skills transfer from Gauteng (2)
Creates a stable labour force (2)
Strengthens buying power (2)
Ready market for the copper industries (2)
Linked industries will be improved/developed (2)
Multiplier effect leads to the expansion of other industries (2)
Improved transport links could assist Phalaborwa to export through Gauteng (2)
Infrastructural improvement and development to ensure rail/road transport of copper (2)
Social responsibility programs of copper mines will uplift local communities (2)
Supports a higher standard of living for local communities (2)
Funds generated will stimulate further development (2)
[ANY ONE] (1 x 2) (2)

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4.5.4 **Energy provision**
Over reliance on coal as a source of energy (2)
Coal is a non-renewable resource (2)
Coal is an unsustainable resource (2)
Negative environmental impact of coal (2)
Rising costs of energy (2)
Overload on ESKOM grid that cannot cope with demand (2)
Power cuts/load shedding affect productivity (2)
Unreliable power network (2)
Theft of power cables disrupt power provision (2)
Corruption in the coal mining sector hampers productivity (2)

Labour
Importing skills will be expensive and increase the costs of production (2)
Expensive to train labourers (2)
Disputes and industrial action/strikes will reduce productivity (2)
Brain drain, where valuable skilled people leaving South Africa (2)
Impact of illnesses/diseases lower productivity (2)
Challenges associated with the provision of minimum wages (2)
Mechanisation could lead to unemployment in the future (2)
[ANY FOUR] (4 x 2) (8)

4.6 4.6.1 The trade between various countries/The exchange of capital, goods and services between countries (1)
[CONCEPT] (1 x 1) (1)

4.6.2 Poultry/chicken/chicken products (1) (1 x 1) (1)

4.6.3 DTI (Department of Trade and Industry) (1 x 1) (1)

4.6.4 The chicken representing cheap imports is larger (and stronger) than the chicken representing the local producers which is smaller (weaker) (2)
Cheaper imports will outweigh the local producers (2)
Local producers will be forced to shut down (2)
Job losses and retrenchments may occur (2)
Profits decline for local producers (2)
Money flows out of the country (2)
DTI biased toward cheap imports (2)
Imports are subsidised therefore cheaper (2)
[ANY ONE] (1 x 2) (2)

4.6.5 Negative balance of trade (2)
Cheaper imports means less profit for local producers (2)
Less products produced in South Africa (2)
Less profits generated in South Africa (2)
Local companies close down (2)
Higher unemployment (2)
Local producers cannot compete with imports (2)
Smaller markets for local producers (2)
[ANY ONE] (1 x 2) (2)

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4.6.6 South Africa belongs to trading blocs/agreements/free trade zones (e.g. BRICS, SADC, AGOA) (2)
Access to a larger international market creates more competition for local markets and pricing (2)
Fosters better international relations between countries (2)
Access to a larger variety of goods (2)
More competitive prices for goods purchased (2)
Access to cheaper goods means more spending power for the poor to buy other goods (2)
Access to cheaper food contributes to food security (2)
Political corruption and manipulation (2)
[ANY TWO] (2 x 2) (4)

4.6.7 Advertising campaigns/trade fairs such as promote 'local is lekker', 'made in South Africa' (2)
Incentives for local industrialists (2)
Provide funding to get subsidies to business (2)
Provide funding to get grants to farmers (2)
Provide funding to get rebates to farmers (2)
Provide training programs to up skill locals (2)
Use modern technology in farming to increase outputs (2)
Encourage import substitution (2)
Produce high quality products locally (2)
Protectionism/increase import tariffs/decrease quotas(2)
Attract foreign investments for local production (2)
[ANY TWO] (2 x 2) (4)
[75]

GRAND TOTAL: 225

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