eduresourceza.com

Downloaded from eduresourceza.com

SUBJECT	GEOGRAPHY PAST QUESTION PAPERS AND EXAMINATION GUIDELINE PAPER 2
GRADE	12
YEAR	2018-2022 .
COMBINED BY	BAG OF HOPE ACADEMY
CONTACT	079 897 5624/ 081 882 2512/ 076 953 1123

Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624
Downloaded from eduresourceza.com

basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

GEOGRAPHY

EXAMINATION GUIDELINES

GRADE 12

2021

These guidelines consist of 22 pages.

Copyright reserved
Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624

Downloaded from eduresourceza.com

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

eduresourceza.com

Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624

Downloaded from eduresourceza.com

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*

Copyright reserved
Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624

Downloaded from eduresourceza.com

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.

eduresourceza.com

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

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

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

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

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

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

eduresourceza.com

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

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)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

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

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

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

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

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

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

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

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

- 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.

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

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

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

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

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

- 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

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

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

eduresourceza.com

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

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.

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

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.

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

- **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.

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

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

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

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

Copyright reserved
Downloaded from eduresourceza.com

organized by_Abutimalesela 0798975624
Downloaded from eduresourceza.com

basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

GEOGRAPHY P2

NOVEMBER 2022

MARKS: 150

TIME: 3 hours

This question paper consists of 19 pages.

Copyright reserved
Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

INSTRUCTIONS AND INFORMATION

1. This question paper consists of TWO sections.

   SECTION A
   QUESTION 1: RURAL AND URBAN SETTLEMENTS (60)
   QUESTION 2: ECONOMIC GEOGRAPHY OF SOUTH AFRICA (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 2931CA VERULAM and a 1 : 10 000 orthophoto map 2931 CA 11 VERULAM 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.

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

SECTION A: RURAL AND URBAN SETTLEMENTS AND THE ECONOMIC GEOGRAPHY OF SOUTH AFRICA

QUESTION 1: RURAL AND URBAN SETTLEMENTS

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 Rural settlements are associated with … activities.

A primary
B secondary
C tertiary
D quaternary

1.1.2 A dispersed settlement pattern develops when there is …

A one dominant water source.
B an abundance of water.
C a narrow river valley.
D communal ownership of land.

1.1.3 An advantage of a rural nucleated settlement:

A Sharing of farm equipment
B Large, commercial plots of land
C Making independent decisions
D Making large profits

1.1.4 A … is the location of a settlement in relation to the surrounding area.

A gap
B site
C bridging point
D situation

1.1.5 A dry-point settlement is located … water because water is …

A far from; scarce.
B far from; a threat.
C near; a threat.
D near; scarce.

Downloaded from eduresourceza.com

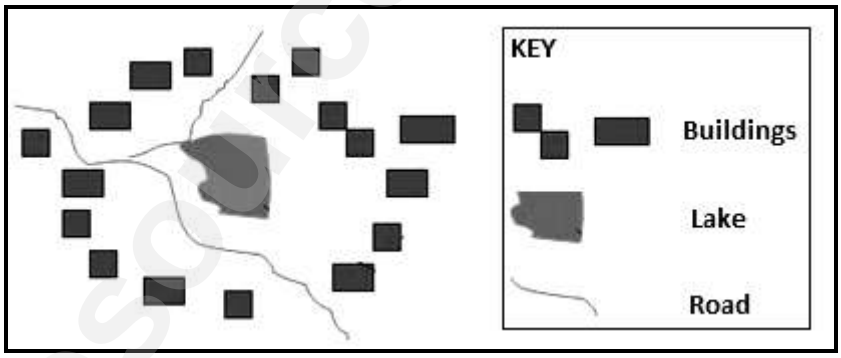
Downloaded from eduresourceza.com

1.1.6 The sketch below refers to a … shaped settlement.

[Adapted from https://www.google.com/search?q=types+of+settlements]

A round
B semi-circular
C crossroad
D linear

1.1.7 The circular shape of the settlement below is influenced by the …



[Adapted from https://www.google.com/search?q=types+of+settlements]

A lake.
B coastline.
C terrain.
D roads.

1.1.8 The following physical factors determine the site of a settlement:

(i) Accessibility to transport
(ii) Distance to market
(iii) Relief
(iv) Fertile soil

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

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

1.2 Choose the word/term from COLUMN B that matches 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 **Y**.

COLUMN A		COLUMN B	
1.2.1	Process whereby an increasing percentage of the country's population is concentrated in urban areas	**Y** **Z**	urbanisation level of urbanisation
1.2.2	Increase in the number of people living in urban areas	**Y** **Z**	rate of urbanisation urban growth
1.2.3	Process whereby people move from urban areas into surrounding rural areas	**Y** **Z**	centralisation counter-urbanisation
1.2.4	Increase in the actual physical size of an urban area	**Y** **Z**	urban expansion urban hierarchy
1.2.5	Unplanned spread of urban areas	**Y** **Z**	urban sprawl urban decay
1.2.6	Decreasing number of people living in rural areas	**Y** **Z**	rural-urban migration rural depopulation
1.2.7	Arrangement of settlements in an area from the smallest to the largest	**Y** **Z**	hierarchy metropolis

(7 x 1) (7)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

1.3 Refer to the sources below on land reform in South Africa.

A FRESH APPROACH TO LAND REFORM

South Africa currently faces a problem as the process of land reform has advanced too slowly and much of the land that has been transferred has become economically inactive.

Conflicting (different) views cause South Africans to have questions about land reform. What is the future of land reform in South Africa? Can the process be accelerated? Will it produce equal outcomes? Whose interests will be served?

At a South African agricultural congress, a panel discussion on the future of land reform agreed that, when it comes to successful land reform, intense negotiations and compromises are necessary. This is in keeping with the three pillars of land reform, namely redistribution, tenure and restitution. Land restitution provides a challenge as funding needs to be allocated to compensate dispossessed communities for land previously lost. Well-managed land reform can create assets for the poor, stabilise relationships and promote development. On the other hand, if it is poorly managed, it destroys assets, causes poverty to communities and weakens the economy.

[Adapted from http://www.landreformfutures.org/]

Poorly managed	Well managed

[Adapted from http://www.landreformfutures.org/]

1.3.1 What is *land reform*? (1 x 2) (2)

1.3.2 According to the extract, what is the benefit of well-managed land reform? (1 x 1) (1)

1.3.3 (a) Why is land restitution considered a challenge? (1 x 2) (2)

(b) How does **B** illustrate the successful process of land restitution? (1 x 2) (2)

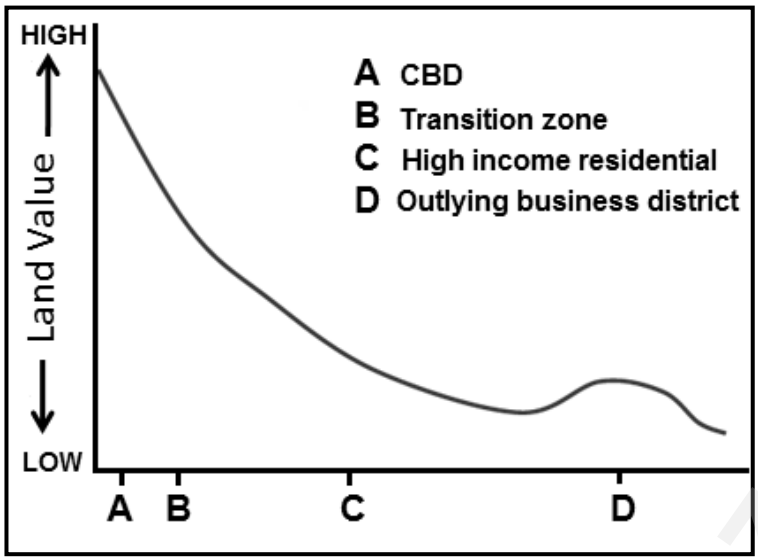
1.3.4 Which factors have caused the 'process of land reform' to advance too slowly? (2 x 2) (4)

1.3.5 Explain the social benefits of well-managed land reform for people living in rural areas. (2 x 2) (4)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

1.4 Refer to the infographic below on the central business district (CBD) of Johannesburg as a land-use zone.



The CBD of Johannesburg has experienced a decline in economic investment over the past 20 years. This has been due to problems such as crime, inefficient public transport, decay, decreased accessibility, etc. These factors force businesses to relocate to outlying business districts, giving rise to commercial decentralisation. In spite of this, the land values remain high in the CBD. The transition zone is generally dilapidated, but maintains high land values.

[Adapted from businesstech.co.za]

[Adapted from *The Journal of the Helen Suzman Foundation,* Issue 69, June 2013]

1.4.1 State TWO characteristics of the Johannesburg CBD that is evident in the photograph. (2 x 1) (2)

1.4.2 Which land-use zone has the highest land value, as indicated on the graph? (1 x 1) (1)

1.4.3 How does the land value (answer to QUESTION 1.4.2) influence the building density of the CBD? (1 x 2) (2)

1.4.4 Why is the transition zone generally dilapidated despite high land values? (2 x 2) (4)

1.4.5 Why is the outlying business district (OBD) attractive for the relocation of businesses? (3 x 2) (6)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

1.5 Refer to the extract below on informal settlements.

FLOODS CAUSE DESTRUCTION TO INFORMAL SETTLEMENTS IN ETHEKWINI MUNICIPALITY

18 April 2022 –12:45

The recent flooding in Ethekwini and surrounding areas has claimed hundreds of lives. Families were displaced from informal settlements, worsening the housing problem many already face.

Rapid urbanisation and government failure to deliver sufficient formal housing are among the driving forces behind the increased number of informal settlements. The unavailability of suitable land for housing is due to limited progress made with regard to land policies. This, in turn, is slowing down the ability of local governments to provide sufficient housing in areas that are not prone to disasters like flooding.

The result is that a quarter of South Africa's urban population is living in informal settlements built wherever people find open spaces that are prone to disasters. They lack basic amenities and infrastructure, such as proper roads and storm-water drainage systems. Many informal settlements are situated near water sources and low-lying areas which increases the flood risk.

[Adapted from ewn.co.za]

1.5.1 What is an *informal settlement*? (1 x 2) (2)

1.5.2 Quote a reason from the extract for the increase in the number of informal settlements in Ethekwini. (1 x 1) (1)

1.5.3 Why are informal settlements in Ethekwini at risk of flooding? (1 x 2) (2)

1.5.4 How would the lack of proper roads negatively impact on emergency services to reach informal settlements in times of disasters, like floods? (1 x 2) (2)

1.5.5 In a paragraph of approximately EIGHT lines, suggest measures to prevent flood-related disasters in informal settlements in the Ethekwini Municipality. (4 x 2) (8)

[60]

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

QUESTION 2: ECONOMIC GEOGRAPHY OF SOUTH AFRICA

2.1 Refer to the table below based on economic activities. 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.

	2020	2021
GROSS DOMESTIC PRODUCT	**R301,92 billion**	**R351,43 billion**
	RANDS IN MILLIONS	
Utilities	100 789	104 317
Transport	342 443	335 001
Services	1 052 692	10 607 113
Public administration	368 503	369 805
Mining	213 459	220 293
Manufacturing	520 626	506 343
Construction	108 604	111 021
Agriculture	127 960	114 030

[Adapted from https://www.statssa.gov.za/?p=15273]

2.1.1 The … of a country refers to the total value of goods and services produced by the permanent inhabitants of the country.

A gross national product
B gross domestic product
C balance of trade
D trade agreement

2.1.2 South Africa's gross domestic product (GDP) enables one to compare …

A employment rates.
B economies of other countries.
C standards of living.
D imports and exports.

2.1.3 The primary economic activity that contributed the most to the GDP in 2020 and 2021:

A Utilities
B Agriculture
C Services
D Mining

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

2.1.4 The tertiary economic activity that contributes the most to South Africa's GDP:

A Services
B Utilities
C Public administration
D Transport

2.1.5 Construction is an example of a … economic activity.

A primary
B secondary
C tertiary
D quaternary

2.1.6 The economic activity that showed a decrease from 2020 to 2021:

A Utilities
B Services
C Construction
D Agriculture

2.1.7 The economic activity that contributed the most to the secondary sector in 2021:

A Construction
B Services
C Manufacturing
D Utilities

2.1.8 TWO statements below are TRUE with respect to the sector contributions made to South Africa's GDP:

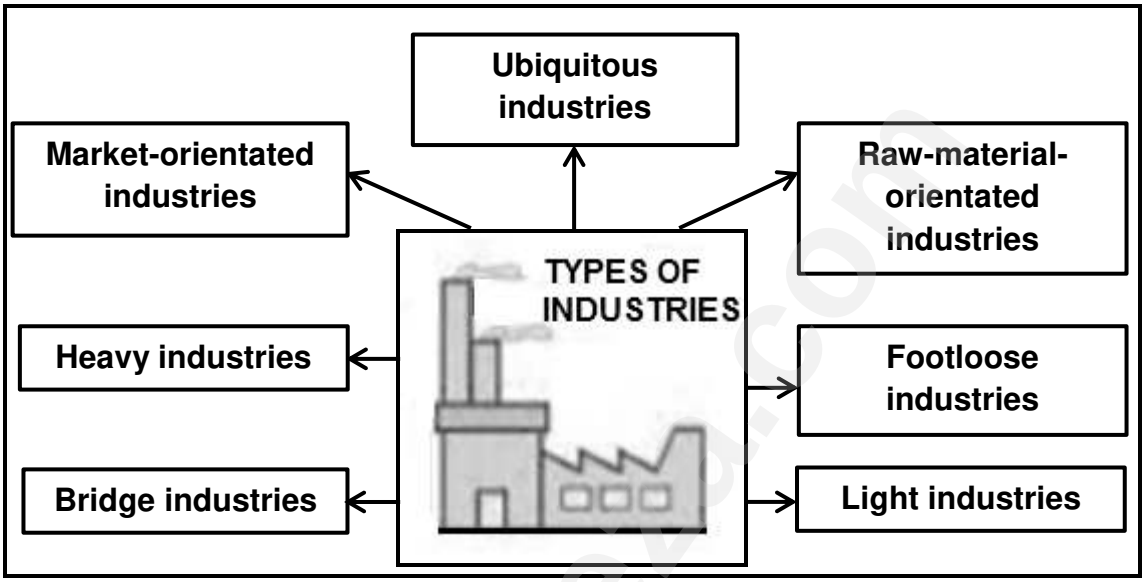
(i) Primary sector contributes the least.
(ii) Secondary sector contributes the least.
(iii) Quaternary sector contributes the most.
(iv) Tertiary sector contributes the most.

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

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

2.2 Match each type of industry in the diagram below with the descriptions that follow. Write only the type of industry next to the question numbers (2.2.1 to 2.2.7) in the ANSWER BOOK, e.g. 2.2.8 Factory.



[Source: Examiner's own sketch]

2.2.1 Located close to customers

2.2.2 The availability of different modes of transport is important

2.2.3 Need large amounts of flat land on the outskirts of built-up areas

2.2.4 Location is not determined by any specific factors

2.2.5 Located in built-up areas as there is little air and noise pollution

2.2.6 Location is determined by bulky unprocessed materials

2.2.7 Telkom is an example of this type of industry (7 x 1) (7)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

2.3 Refer to the extract below on food security.

FOOD SECURITY IN SOUTH AFRICA 2020–2021

According to a report released by Statistics South Africa, *Measuring Food Security in South Africa: Applying the Food Insecurity Experience Scale*, almost 23,6 per cent of South Africans were affected by moderate to severe food insecurity in 2021.

Statistics South Africa (Stats SA) has been working on improving its measurement of food security and recently introduced the Food Insecurity Experience Scale. Since food insecurity is a global phenomenon, it is important to measure it using tools that guarantee comparability across countries.

Health pandemics, such as Covid-19, has denied many South Africans their right to adequate food as indicated in the South African Constitution. This has undermined the efforts that have been made to meet the National Development Plan's goal of 'Zero Hunger' by 2030.

[Adapted from https://www.statssa.gov.za/?p=15273]

2.3.1 Define the concept *food security.* (1 x 2) (2)

2.3.2 What percentage of South Africans experienced food insecurity in 2021? (1 x 1) (1)

2.3.3 What is the importance of the Food Insecurity Experience Scale according to the extract? (1 x 2) (2)

2.3.4 Suggest how health pandemics, such as Covid-19, lead to food insecurity in South Africa. (1 x 2) (2)

2.3.5 In a paragraph of approximately EIGHT lines, explain how the South African government can assist farmers in achieving 'Zero Hunger' by 2030. (4 x 2) (8)

Downloaded from eduresourceza.com

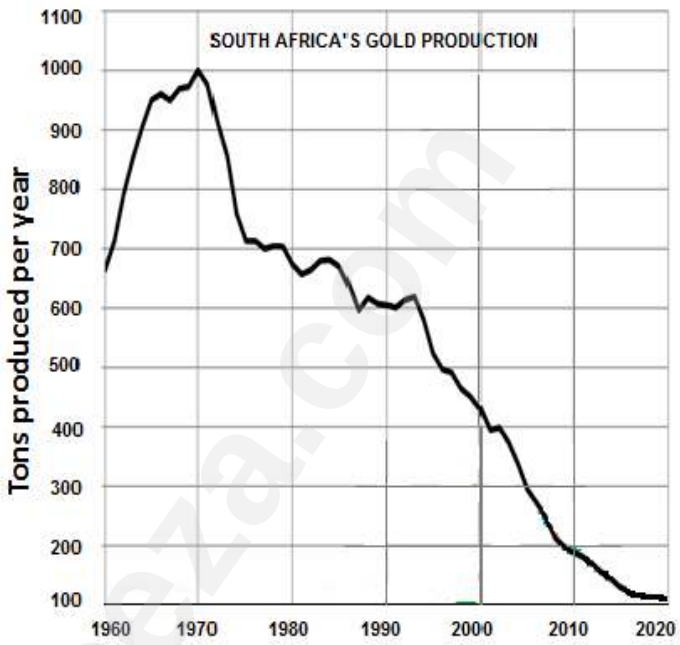
Downloaded from eduresourceza.com

2.4 Refer to the infographic below based on gold production in South Africa between 1970 and 2020.

South Africa was the world's largest producer of gold, as only 50 years ago, South Africa produced more than 1 000 tons of gold per year. Production peaked in 1970, but has since then been falling steadily and sharply. Labour issues, such as strike actions, have also contributed to reduced gold production.

The nearly 80% fall in South African gold production has led to it being overtaken by China, Australia and the United States of America recently.

[Adapted from https://www.google.com/search?q=gold+mining+statistics+South+Africa]



COMPARISON OF GOLD PRODUCTION PER TONS PRODUCED

	1970	1990	2020
South Africa	1 000	600	101
China	10	100	380
Russia	0	150	300
Australia	40	230	330
United States of America	50	300	190

[Adapted from https://www.researchgate.net/figure/Top-Five-Gold-Producing-Countries]

2.4.1 According to the graph, state the trend in South Africa's gold production from 1970 to 2020. (1 x 1) (1)

2.4.2 How many tons of gold did South Africa produce in 2020, according to the table? (1 x 1) (1)

2.4.3 According to the table, which country was the leading gold producer in 2020? (1 x 1) (1)

2.4.4 State TWO physical factors that favoured South Africa as the leading producer of gold in 1970. (2 x 2) (4)

2.4.5 Suggest TWO factors that resulted in a reduction of gold production from 1990 to 2020. (2 x 2) (4)

2.4.6 Explain how a reduction in South Africa's gold production will impact negatively on its economic growth. (2 x 2) (4)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

2.5 Refer to the infographic below on the Dube TradePort Industrial Development Zone (IDZ).

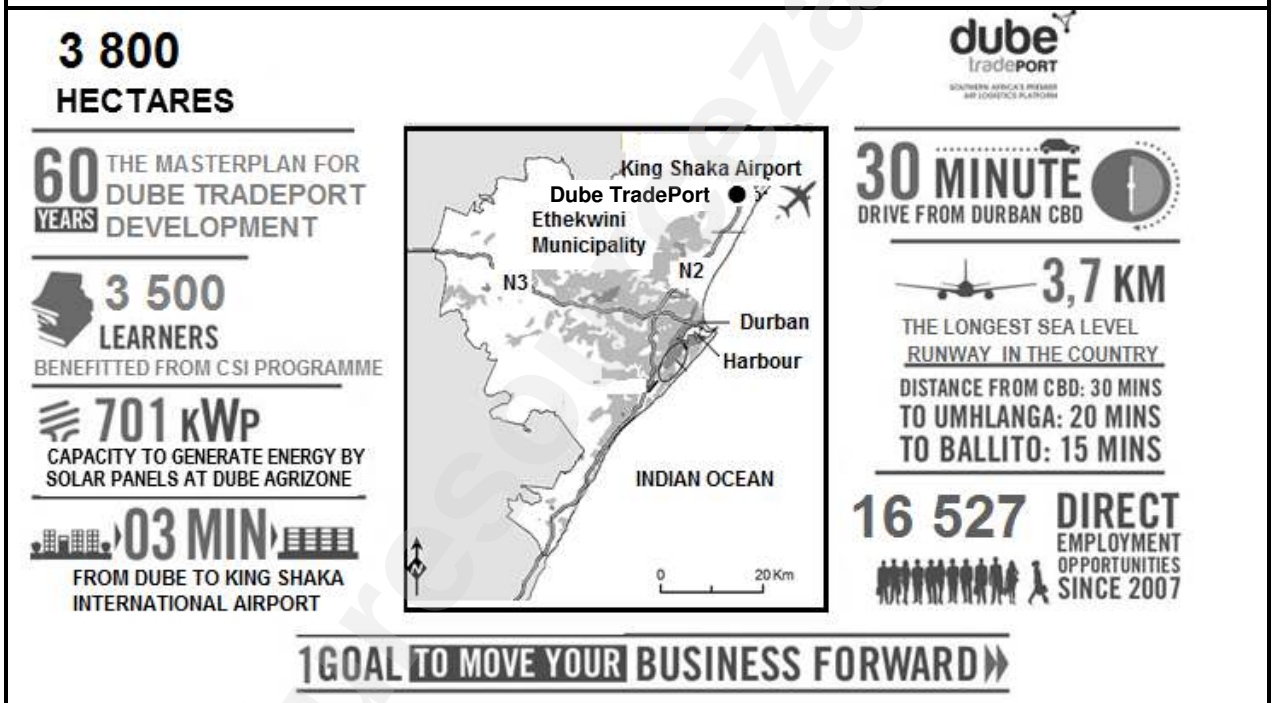
FACT FILE: DUBE TRADEPORT

- Largest greenfield airport development in Africa and the only one in South Africa covering more than 3 800 hectares (38 km²).
- Located 30 km north of Durban.
- 45 km away from the busiest cargo port in Africa, which is the Durban Harbour.
- Comprises five business zones: Dube TradeZone, Dube Cargo Terminal, Dube AgriZone, Dube City, Dube iConnect.

NOTE: A greenfield development takes place on a vacant site that has not been developed previously.

[Adapted from invest@dubetradeport.co.za]

ADVERTISEMENT TO ATTRACT INVESTMENT AND INDUSTRIES TO THE DUBE TRADEPORT INDUSTRIAL DEVELOPMENT ZONE



[Adapted from DubeTradePort.slideshare.net]

2.5.1 What is an *industrial development zone*? (1 x 2) (2)

2.5.2 What transport infrastructure makes the Dube TradePort IDZ unique compared to other IDZs in South Africa, according to the fact file? (1 x 1) (1)

2.5.3 State TWO factors on the map that resulted in greater accessibility to the Dube TradePort IDZ. (2 x 1) (2)

2.5.4 Describe TWO advantages regarding infrastructure that the Dube TradePort IDZ could offer to attract industries. (2 x 2) (4)

2.5.5 Explain how the Dube TradePort IDZ would upskill (improve) labour in the province. (3 x 2) (6)

[60]

TOTAL SECTION A: 120

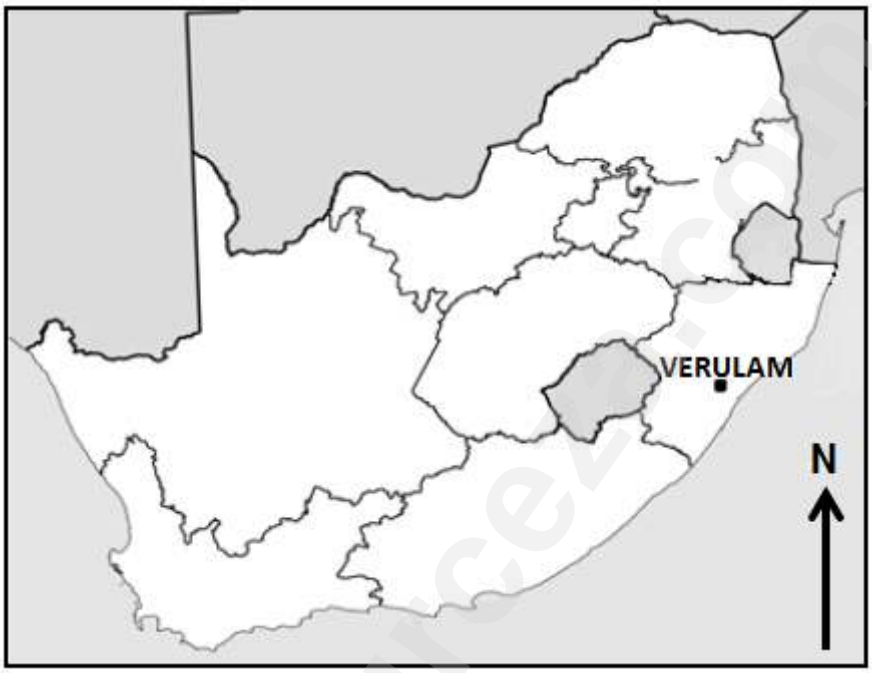
Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

SECTION B

QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES

GENERAL INFORMATION ON VERULAM



Coordinates: 29°35'S; 31°0'E

The town of Verulam is 170 years old and located to the north of Durban. It has a population of over 60 000 people. Verulam consists of densely populated residential and industrial areas like Canelands. On the outskirts are large farming areas where the main crop grown is sugar cane. There has been slow but steady progress in modernising the town by providing improved infrastructure to the rural areas.

The Hazelmere Dam, just a few kilometres north of Verulam, is the main source of water for the area and is used for a variety of activities, such as watersports and fishing. One of the main rivers that flows through Verulam is the Mdloti River in which the Hazelmere Dam has been built. An interesting fact is that Verulam is the only town in the world where the main street (Wick Street) ends in a river.

[Adapted from https://www.google.com/search?q=map+of+verulam]

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

ENGLISH	AFRIKAANS
International airport	Internasionale lughawe
River	Rivier
Bridge	Brug
Furrow	Voor

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

3.1 **MAP SKILLS AND CALCULATIONS**

Refer to the topographic map and the orthophoto map.

3.1.1 The contour interval of the orthophoto map is (5 m/20 m). (1 x 1) (1)

3.1.2 Which vertical exaggeration would give the most detailed indication of the landforms on a cross-section?

A 2 times
B 5 times
C 10 times
D 20 times (1 x 1) (1)

3.1.3 Complete the grid reference/coordinates of spot height **114** in block **C3** on the topographic map. Write down only the information that is not included in the question.

(a) __º 37' 42"S

(b) 31º __' __"E (3 x 1) (3)

Refer to the topographic map.

3.1.4 Calculate the average gradient between **F** and **G**.

Use the following information:

Vertical interval (VI): 119 m – 80 m = 39 m

Formula: **Average gradient =** $\frac{\textbf{Vertical interval (VI)}}{\textbf{Horizontal equivalent (HI)}}$ (4 x 1) (4)

3.1.5 Determine if the gradient between (**F** to **G**) is steeper or gentler than (**H** to **I**). (1 x 1) (1)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

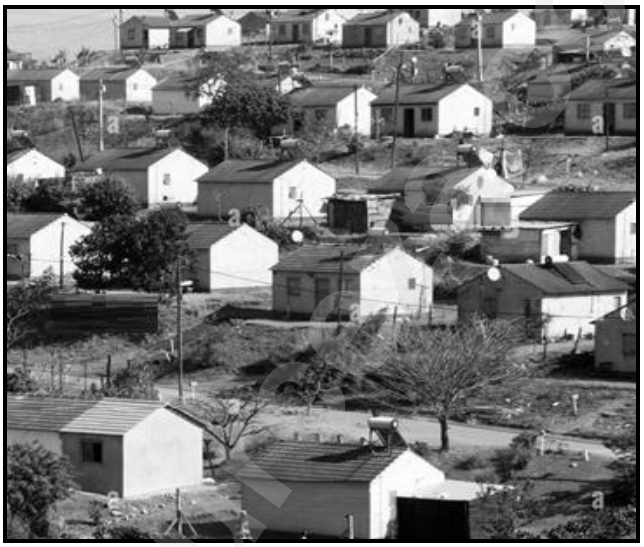
3.2 **MAP INTERPRETATION**

Refer to **J** in block **D4** on the topographic map.

3.2.1 Is the settlement pattern at **J** *dispersed* or *nucleated*? (1 x 1) (1)

3.2.2 State ONE site factor that favoured farming in this area. (1 x 1) (1)

Refer to residential area **K** in block **E3** on the topographic map and the photograph of the same area below.



[Source: https://www.google.com/search?q=residential=areas=in=verulam]

3.2.3 Area **K** is a (high/low)-income residential area. (1 x 1) (1)

3.2.4 Give evidence from the topographic map and/or photograph to support your answer to QUESTION 3.2.3. (1 x 2) (2)

3.2.5 How does the spacing of the contour lines indicate that residential area **K** is built on steep/hilly land? (1 x 1) (1)

3.2.6 How did the steep/hilly land influence the type of street pattern in this area on the topographic map? (1 x 2) (2)

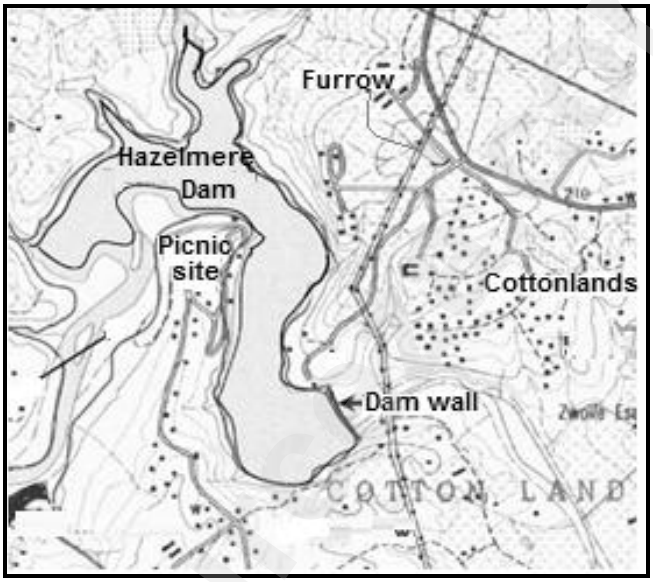
Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

Refer to the orthophoto map.

3.2.7 Refer to Canelands **(6)** in block **A5** on the orthophoto map and state ONE situation factor that influenced the location of this industrial area. (1 x 1) (1)

Refer to the Hazelmere Dam in block **A1** and an enlarged extract of the topographic map below.



3.2.8 Name ONE tertiary activity that is associated with the Hazelmere Dam. (1 x 1) (1)

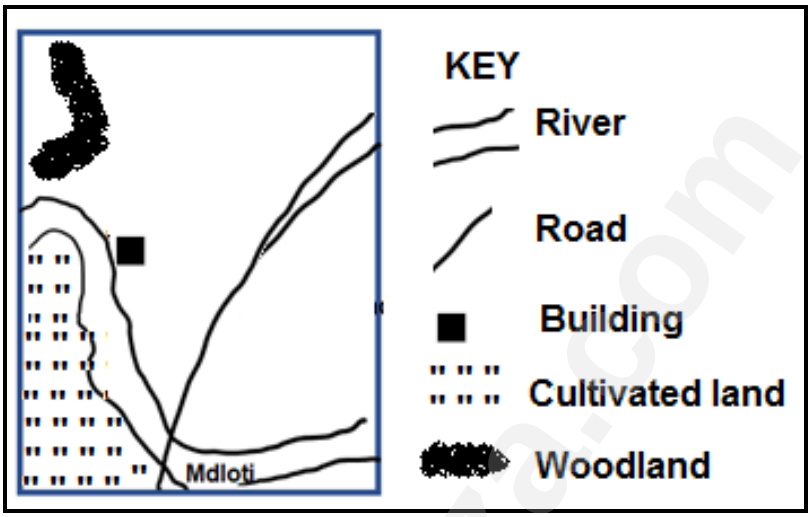
3.2.9 How does this tertiary activity (answer to QUESTION 3.2.8) contribute to the economy of Verulam? (1 x 2) (2)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

3.3 **GEOGRAPHICAL INFORMATION SYSTEMS (GIS)**

Refer to the block below representing block **D5** on the topographic map.



[Source: Examiner's own sketch]

3.3.1 Identify the following:

(a) Human-made polygon (area) feature

(b) Natural line feature (2 x 1) (2)

3.3.2 The TWO features (answer to QUESTION 3.3.1) represent (vector/raster) data. (1 x 1) (1)

Refer to blocks **A3** and **A4** on the orthophoto map.

3.3.3 Buffering is the demarcation of an area around a feature/location.

(a) What evidence indicates that buffering is taking place along the Mdloti River? (1 x 1) (1)

(b) Explain why it was necessary to buffer the Mdloti River. (1 x 2) (2)

Refer to blocks **B4** and **B5** on the topographic map.

3.3.4 A data layer is a layer of information based on a specific theme.

(a) Identify the infrastructure data layer that creates international links for the Dube TradePort IDZ. (1 x 1) (1)

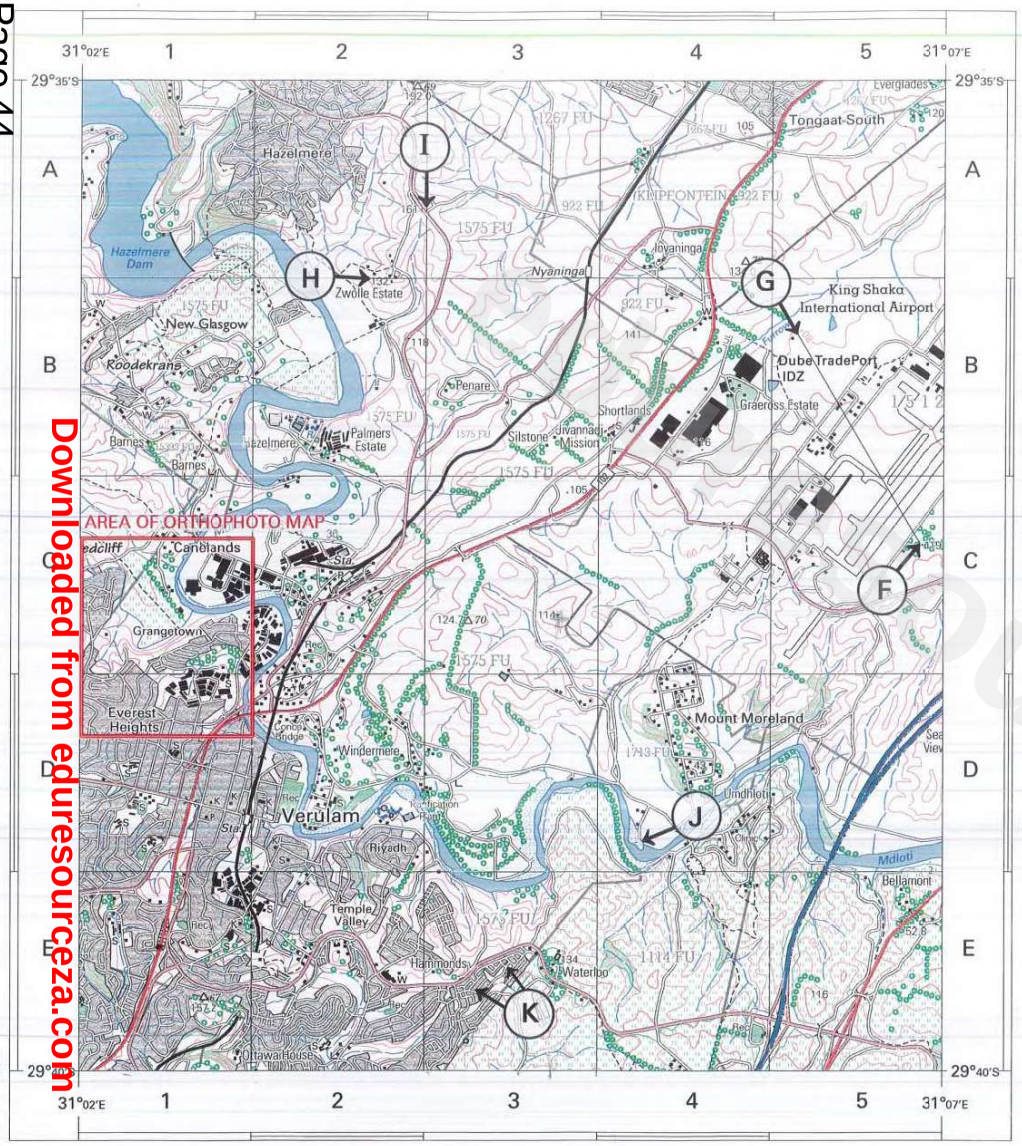
(b) How did the topography data layer assist in determining the ideal location of the Dube TradePort IDZ? (1 x 1) (1)

TOTAL SECTION B: 30
GRAND TOTAL: 150

Copyright reserved
Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624

EXTRACT FROM 2931CA VERULAM 1:50 000



Downloaded from eduresourceza.com

Gemiddelde magnetiese deklinasie 25°04' Wes van Ware Noord (Mei 2016).
Gemiddelde jaarlikse verandering 9' Weswaarts (Mei 2016 - April 2017).

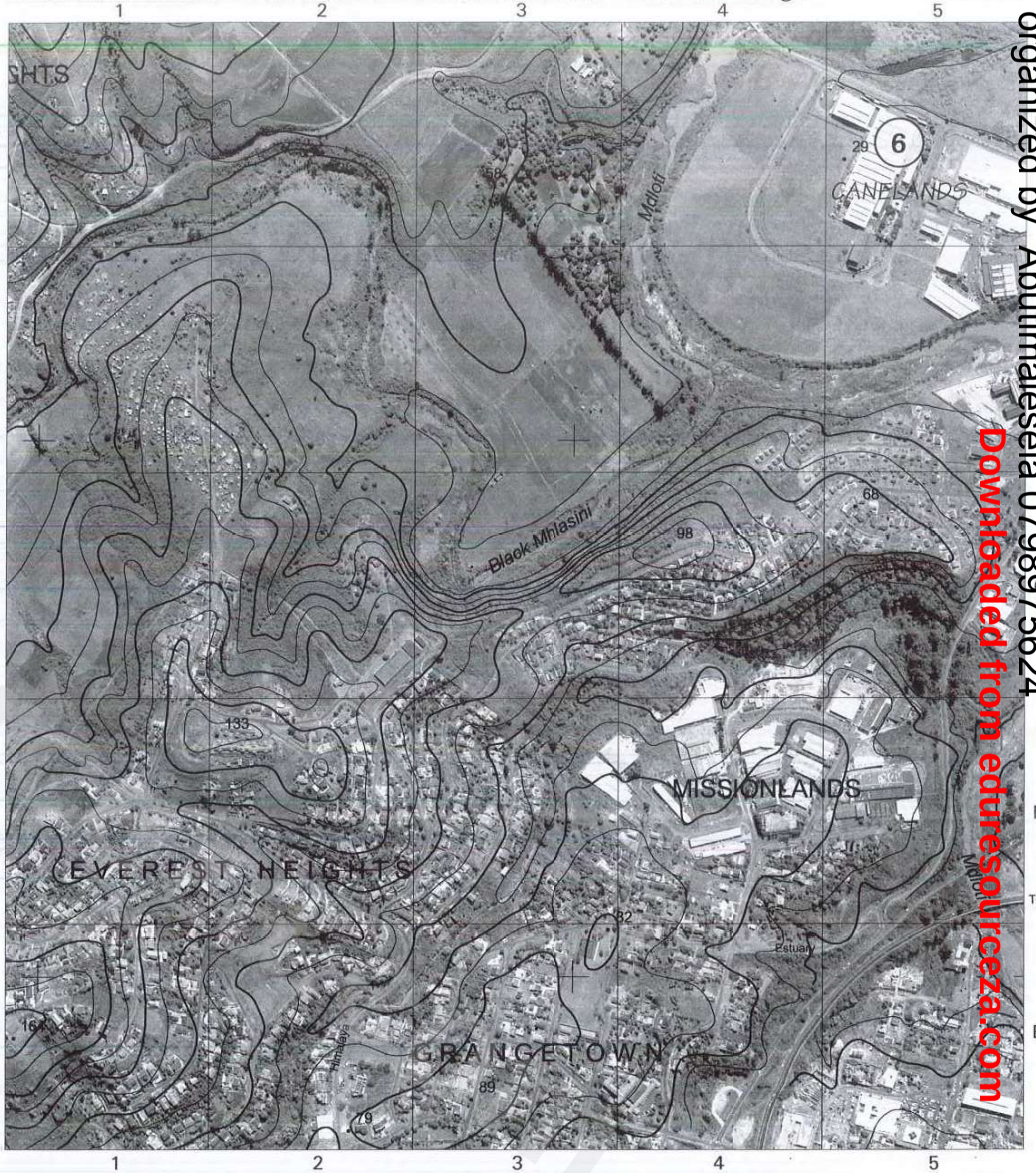
Mean magnetic declination 25°04' West of True North (May 2016).
Mean annual change 9' Westwards (May 2016 - April 2017).

CONTOUR INTERVAL 20 METRES / KONTOERTUSSENRUIMTE 20 METER

REFERENCE

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

EXTRACT FROM 2931 CA 11 VERULAM ortho - rectified image 1:10 000



Downloaded from eduresourceza.com

CONTOUR INTERVAL 5 METRES - KONTOERTUSSENRUIMTE 5 METER

VERKLARING

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

organized by_Abutimalesela 0798975624
Downloaded from eduresourceza.com

basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

GEOGRAPHY P2

NOVEMBER 2022

MARKING GUIDELINES

MARKS: 150

These marking guidelines consist of 9 pages.

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

SECTION A

QUESTION 1: RURAL AND URBAN SETTLEMENTS

1.1	1.1.1	A (1)		
	1.1.2	B (1)		
	1.1.3	A (1)		
	1.1.4	D (1)		
	1.1.5	B (1)		
	1.1.6	C (1)		
	1.1.7	A (1)		
	1.1.8	D (1)	(8 x 1)	(8)
1.2	1.2.1	Y (1)		
	1.2.2	Z (1)		
	1.2.3	Z (1)		
	1.2.4	Y (1)		
	1.2.5	Y (1)		
	1.2.6	Z (1)		
	1.2.7	Y (1)	(7 x 1)	(7)
1.3.	1.3.1	Policy to bring about equitable distribution and access to land (2) **[CONCEPT]**	(1 x 2)	(2)
	1.3.2	Create assets for the poor (1) Stabilise relationships (1) Promote development (1) **[ANY ONE]**	(1 x 1)	(1)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

1.3.3 (a) Budgets/funding needs to be accessed (2)
Legal arrangements need to be concluded (2)
[ANY ONE] (1 x 2) (2)
(b) Shaking of hands (2)
There is no fighting (2)
Peaceful environment (2)
[ANY ONE] (1 x 2) (2)

1.3.4 Lack of knowledge regarding the land reform process (2)
Poverty/Lack of income to attend meetings (2)
Lack of appropriate documentation (2)
Willing seller/buyer clause (2)
Legal processes are costly (2)
Constrained budgets of government (2)
Government unable to provide loans (2)
Government unable to provide equipment (2)
Training of farmers is costly (2)
[ANY TWO] (2 x 2) (4)

1.3.5 The change to commercial farming would create more employment opportunities (2)
Increase in food production would alleviate poverty (2)
Employment would decrease poverty (2)
There would be more reconciliation among rural communities that would bring about stability (2)
Improved services would contribute to a better quality of life (2)
Family units would not be broken due to a decrease in rural-urban migration (2)
[ANY TWO] (2 x 2) (4)

1.4 1.4.1 Tall buildings (1)
High density of buildings (1)
[ANY ONE] (2 x 1) (2)

1.4.2 CBD (1) (1 x 1) (1)

1.4.3 Increases (2) (1 x 2) (2)

1.4.4 It is the future expansion of the CBD (invasion and succession) (2)
Homeowners can still get high prices for dilapidated buildings (2)
Landlords in the transition zone are hesitant to renovate (2)
[ANY TWO] (2 x 2) (4)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

1.4.5 Greater accessibility (2)
They are located in high population density areas (markets) (2)
Along main roads with a constant flow of traffic (2)
Lower land values (2)
Lower rental costs (2)
Modern/new buildings (2)
More parking space (2)
Less pollution (2)
Less crime (2)
[ANY THREE] (3 x 2) (6)

1.5 1.5.1 A settlement that has limited planning and infrastructure (2)
No formal ownership of the land (2)
Land that is occupied illegally (2)
An informal structure with different building materials (2)
[ANY ONE] (1 x 2) (2)

1.5.2 "Rapid urbanisation" (1)
"government failure to deliver adequate housing"(1)
[ANY ONE] (1 x 1) (1)

1.5.3 Locate near water sources e.g. rivers (2)
In low lying areas (2)
Lack basic amenities and infrastructure (2)
Poor drainage/storm water systems (2)
[ANY ONE] (1 x 2) (2)

1.5.4 Poor accessibility to informal settlements (2)
Takes longer to reach the informal settlement in times of emergency (2)
[ANY ONE] (1 x 2) (2)

1.5.5 Informal settlements should be relocated to higher lying areas (2)
Adequate services should be provided to informal settlements (2)
An efficient drainage system should be installed (2)
Provide stronger building material (2)
Provide low cost housing (2)
Provide better infrastructure (2)
Access to better emergency services (2)
[ANY FOUR] (4 x 2) (8)
[60]

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

QUESTION 2: ECONOMIC GEOGRAPHY OF SOUTH AFRICA

2.1	2.1.1	B (1)		
	2.1.2	B (1)		
	2.1.3	D (1)		
	2.1.4	A (1)		
	2.1.5	B (1)		
	2.1.6	D (1)		
	2.1.7	C (1)		
	2.1.8	B (1)	(8 x 1)	(8)
2.2	2.2.1	Market orientated industries (1)		
	2.2.2	Bridge industries (1)		
	2.2.3	Heavy industries (1)		
	2.2.4	Footloose industries (1)		
	2.2.5	Light industries (1)		
	2.2.6	Raw-material orientated industries (1)		
	2.2.7	Ubiquitous industries (1)	(7 x 1)	(7)
2.3.	2.3.1	When nutritious food is accessible to the people of a country **[CONCEPT]**	(1 x 2)	(2)
	2.3.2	23,6% (1)	(1 x 1)	(1)
	2.3.3	To make a comparison of food security across countries	(1 x 2)	(2)
	2.3.4	People were unable to work reducing food production/industry (2) Due to unemployment people could not purchase food (2) Borders closed and countries could not import food (2) **[ANY ONE]**	(1 x 2)	(2)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

	2.3.5	Incentives can increase productivity on farms (2) Technical support for small scale farmers will increase production (2) Providing modernised farming equipment will increase production (2) Encourage (incentives) subsistence farmers (fragmented land) to embrace commercial farming (2) Incentives for co-operative farming will increase the variety and quantity of products (2) Research into a variety of farming practices will optimize production (2) Land reform programmes should be prioritized to give more people access to farming land (2) Subsidising farmers with the procurement of genetically modified(GM) crops will guarantee production of crops (2) Programmes to upskill farmers will improve efficiency and protect the land (2) Access to pesticides and insecticides improve and ensure the quality of crops (2) **[ANY FOUR]**	(4 x 2)	(8)
2.4	2.4.1	Decreased (1)	(1 x 1)	(1)
	2.4.2	101 (1)	(1 x 1)	(1)
	2.4.3	China (1)	(1 x 1)	(1)
	2.4.4	Witwatersrand has the largest gold reef deposit (2) Gold deposits are closer to the surface (2) Lower geothermal gradient (2) Gold reserves are of a high quality (2) **[ANY TWO]**	(2 x 2)	(4)
	2.4.5	Strike action (2) Labour disputes (2) Decreased foreign investment in the mines (2) Certain mines have had to close down permanently (2) High numbers of unskilled miners (2) Threat of nationalisation (2) Power outages (load shedding) (2) **[ANY TWO]**	(2 x 2)	(4)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

2.4.6 An increase in unemployment will reduce buying power (2)
Reduced market and business profits will decrease (2)
Less taxes paid to government will reduce budgets for the development of infrastructure (2)
Decrease in the multiplier effect in the country resulting in all sectors of the economy being affected (2)
Decrease in foreign income due to less gold exports causes economic recession (2)
Some mines would be forced to close decreasing the GDP of the country (2)
[ANY TWO] (2 x 2) (4)

2.5 2.5.1 Focussed industrial development area that creates jobs and promotes exports, close to major transport routes with international links (2)
[CONCEPT] (1 x 2) (2)

2.5.2 It is the largest Greenfield airport development (1) (1 x 1) (1)

2.5.3 Harbour (1)
N2 (1)
King Shaka (International Airport) (1)
[ANY TWO] (2 x 1) (2)

2.5.4 Access to improved telecommunication services (2)
Available infrastructure (2)
Airport provides industries with access to local and international markets (2)
Access to power supply (2)
Dams ensure an abundance of water (2)
[ANY TWO] (2 x 2) (4)

2.5.5 A variety of industries would expose labourers to a variety of skills (2)
Technical specialists from other countries would transfer skills to the local labour force (2)
Local labour would acquire Fourth industrial revolution skills which would keep them abreast of the latest technological development (2)
The success of the Dube TradePort IDZ would ensure a more permanent/stable labour force (2)
[ANY THREE] (3 x 2) (6)
[60]

TOTAL SECTION A: 120

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

SECTION B

QUESTION 3

3.1 **MAP SKILLS AND CALCULATIONS**

3.1.1 5m (1) (1 x 1) (1)

3.1.2 D (1) (1 x 1) (1)

3.1.3 (a) 29 (1)°
(b) 04 (1)' 47 (45" – 49") (1) (3 x 1) (3)

3.1.4 Formula: Gradient = $\frac{\text{Vertical Interval (VI)}}{\text{Horizontal Equivalent (HE)}}$

HE = 4,5(1) cm x 500 m = 2250 (1) m
(range: 4,4-4,6 cm x 500 = 2200- 2300)

$= \frac{39}{2250}$ (1) (for correct substitution)

= 1 : 57,69 (1) (range: 1:56,41 – 1: 58,97) (4 x 1) (4)

3.1.5 more gentle (1) (1 x 1) (1)

3.2 **MAP INTERPRETATION**

3.2.1 Dispersed (1) (1 x 1) (1)

3.2.2 Flat land (1)
Next to the river (1)
Fertile soil (1)
[ANY ONE] (1 x 1) (1)

3.2.3 Low (income) (1) (1 x 1) (1)

3.2.4 Small plots/houses (2)
Low cost housing/RDP housing project (2)
Houses of similar design (2)
High density (2)
Evidence of backyard shacks (2)
[ANY ONE] (1 x 2) (2)

3.2.5 Contour lines are close together (1) (1 x 1) (1)

3.2.6 It resulted in an irregular street pattern (2) (1 x 2) (2)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

3.2.7 Access to roads (1)
Available labour (1)
Easy access to markets(1)
Close proximity to airport (1)
[ANY ONE] (1 x 1) (1)

3.2.8 Provision of water (1)
Tourism/recreational activities (1)
[ANY ONE] (1 x 1) (1)

3.2.9 **Provision of water**
Water will promote industrial development (2)
Water will encourage agriculture (2)

Tourism/Recreation
Recreational activities will attract locals and tourists (2)
Multiplier effect (2)
[ANY ONE- MUST LINK TO ANSWER IN QUESTION 3.2.8] (1 x 2) (2)

3.3 GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

3.3.1 (a) Cultivated land (1)

(b) River (1) (2 x 1) (2)

3.3.2 Vector (1) (1 x 1) (1)

3.3.3 (a) Trees on the banks of the river (1)
Vacant land between the river and the industries/cultivated land (1)
[ANY ONE] (1 x 1) (1)

(b) Prevents the river from being polluted from the industries (2)
To limit pollutants (accept examples) from the cultivated lands entering the river (2)
[ANY ONE] (1 x 2) (2)

3.3.4 (a) Kind Shaka International Airport (1) (1 x 1) (1)

(b) The gradient/land is gentle. (1) (1 x 1) (1)

TOTAL SECTION B: 30
GRAND TOTAL: 150

Copyright reserved Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624
Downloaded from eduresourceza.com

basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS/ NATIONAL SENIOR CERTIFICATE EXAMINATIONS

GEOGRAPHY P2

2022

MARKS: 150

TIME: 3 hours

This question paper consists of 17 pages.

Copyright reserved
Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624

Downloaded from eduresourceza.com

INSTRUCTIONS AND INFORMATION

1. This question paper consists of TWO SECTIONS:

   SECTION A
   QUESTION 1: RURAL AND URBAN SETTLEMENTS (60 MARKS)
   QUESTION 2: ECONOMIC GEOGRAPHY OF SOUTH AFRICA (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 2628AC of ALBERTON and a 1 : 10 000 orthophoto map 2628AC 3 of ALBERTON 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 where applicable. 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.

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

SECTION A: RURAL AND URBAN SETTLEMENTS AND THE ECONOMIC GEOGRAPHY OF SOUTH AFRICA

QUESTION 1: RURAL AND URBAN SETTLEMENTS

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 The actual ground that is occupied by a farm is known as the …

A situation.
B location.
C site.
D space.

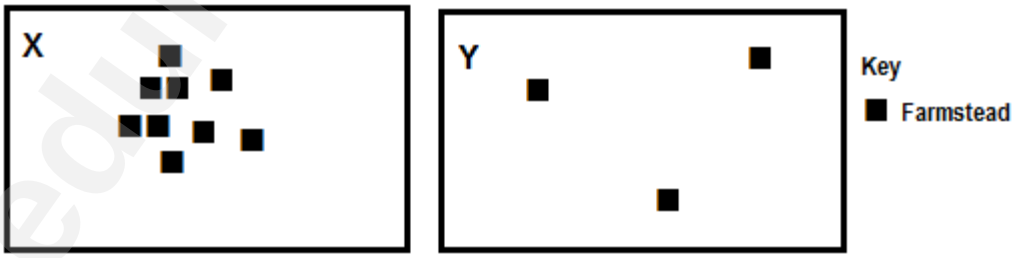
1.1.2 The choice of site for the location of a farm is influenced by …

A population size.
B topography.
C finance.
D markets.

1.1.3 The situation of a farm is influenced by …

A soil fertility.
B water sources.
C distance to markets.
D steepness of land.

Refer to the patterns of rural settlements (**X** and **Y**) to answer QUESTIONS 1.1.4 to 1.1.6.



[Source: Examiner's own sketch]

1.1.4 The social advantage of settlement **X** is …

A safety and security.
B using technology.
C that a local market is available.
D making more profit.

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

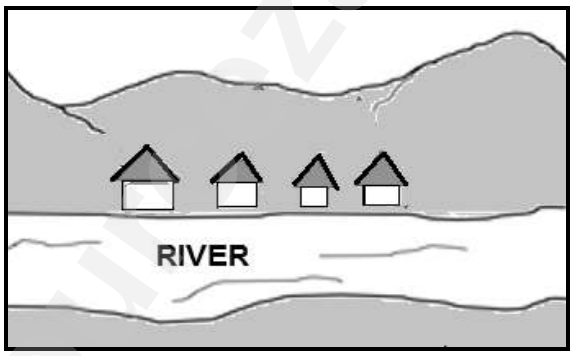
1.1.5 Settlement pattern **Y** is classified as a dispersed settlement due to the …

A farm plots being far apart.
B distance away from the market.
C farmsteads being far apart.
D availability of flat land.

1.1.6 An economic advantage of settlement **Y** is …

A greater privacy.
B the potential for large profits.
C the high cost of buying equipment.
D independence.

Refer to the sketch of the settlement to answer QUESTIONS 1.1.7 and 1.1.8.



[Source: Examiner's own sketch]

1.1.7 The shape of the settlement is …

A linear.
B dispersed.
C crossroads.
D round.

1.1.8 The main reason for the development of the settlement is ...

A access to a road.
B a gap in the mountain.
C access to water.
D defence from enemies. (8 x 1) (8)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

1.2 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**.

COLUMN A		COLUMN B	
1.2.1	The process where people move from urban areas to rural areas is known as …	**Y** **Z**	urbanisation counter-urbanisation
1.2.2	The pace (speed) at which urbanisation occurs is known as …	**Y** **Z**	rate of urbanisation level of urbanisation
1.2.3	The formless expansion of urban areas is referred to as …	**Y** **Z**	urban sprawl natural growth
1.2.4	The process where the percentage of the population living in the urban areas increases is known as …	**Y** **Z**	rural-urban migration urbanisation
1.2.5	The increase in the number of people in urban areas is known as …	**Y** **Z**	urban expansion urban growth
1.2.6	An urban settlement with one dominant function is called a … town.	**Y** **Z**	specialised junction
1.2.7	A town that provides goods to the surrounding rural population is known as a … town.	**Y** **Z**	central place gateway

(7 x 1) (7)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

1.3 Refer to the infographic based on rural depopulation.

POPULATION IN RURAL AREAS FROM 2017 TO 2020

Rural depopulation is mainly caused by the migration of people from rural areas to urban areas. These people search for employment and a better quality of life. The movement of people to urban areas creates various economic and social challenges for the rural area, e.g. reducing the standard of living. Strategies need to be put in place to limit the number of people leaving the rural areas and also encouraging people to return.

Year	Population (in thousands)
2017	19 479
2018	18 465
2019	17 439
2020	16 408

[Adapted from http://www.ejolt.org]

1.3.1 Define the concept *rural depopulation*. (1 x 2) (2)

1.3.2 Give evidence from the sketch that rural depopulation has occurred. (1 x 1) (1)

1.3.3 Refer to the table and give evidence that indicates that rural depopulation took place between 2017 and 2020. (1 x 2) (2)

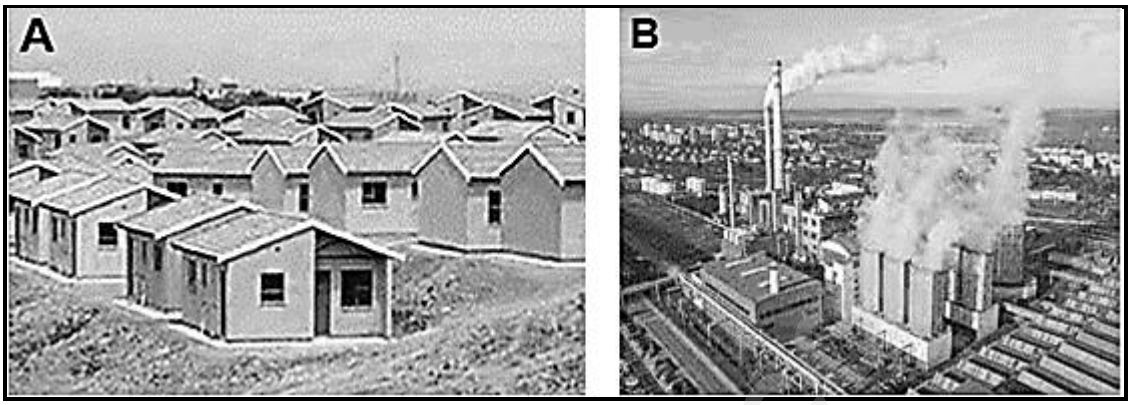
1.3.4 What is the social importance of discouraging (limiting) rural depopulation? (1 x 2) (2)

1.3.5 In a paragraph of approximately EIGHT lines, suggest FOUR sustainable strategies that could create more employment opportunities in rural areas. (4 x 2) (8)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

1.4 Refer to the photographs showing buildings in two land-use zones.



[Source: https://www.dreamstime.com/illustration/factory-sketch.html
https://www.google.com/imgres?imgurl=https%3A%2F%2Fimage.shutterstock.com%]

Refer to photograph **A**.

1.4.1 Classify the residential area shown in the photograph as either high income or low income. (1 x 1) (1)

1.4.2 Give evidence from the photograph to support your answer to QUESTION 1.4.1. (1 x 2) (2)

Refer to photographs **A** and **B**.

1.4.3 Why is the type of residential area (answer to QUESTION 1.4.1) often located close to an industrial area? (2 x 2) (4)

1.4.4 Give TWO social injustices that are experienced by people in this residential area due to the industrial activity at **B**. (2 x 2) (4)

1.4.5 Explain TWO measures that can be implemented by the industries at **B** to reduce the impact of the social injustices. (2 x 2) (4)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

1.5 Refer to the photographs showing an urban settlement issue.

COMPARISON OF THE NUMBER OF VEHICLES IN 1960 AND IN 2021

[Adapted from https://www.google.com/traffic-index-global-traffic-congestion]

1.5.1 What is the trend shown in the photographs concerning the number of vehicles between 1960 and 2021? (1 x 1) (1)

1.5.2 Give TWO possible reasons for this trend (answer to QUESTION 1.5.1). (2 x 2) (4)

1.5.3 How does traffic congestion impact the daily traveller? (2 x 2) (4)

1.5.4 Suggest THREE strategies that could be implemented to reduce traffic congestion in urban areas. (3 x 2) (6)

[60]

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

QUESTION 2: ECONOMIC GEOGRAPHY OF SOUTH AFRICA

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 … are examples of activities in the primary sector.

A Policing, teaching and brick-laying
B Retail stores, banking and education
C Trade, transport and ship building
D Fishing, forestry and mining

2.1.2 Construction is an example of the … economic sector.

A primary
B secondary
C tertiary
D quaternary

2.1.3 The tertiary sector refers to …

A the extraction of raw materials from the natural environment.
B the processing of raw materials into finished products.
C the exchange of goods and services between countries.
D research and information technology.

2.1.4 An example of a tertiary activity is …

A farming.
B manufacturing.
C tourism.
D research.

2.1.5 This economic sector is linked to the processing of information:

A Primary
B Secondary
C Tertiary
D Quaternary

2.1.6 Gross national product (GNP) is the …

A value of goods and services produced by permanent and non-permanent citizens in a country in one year.
B value of goods and services produced by the permanent inhabitants of a country in one year.
C contribution of individual provinces to the GDP in one year.
D financial statement showing the value of a country's transactions compared to the rest of the world.

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

2.1.7 Examples of value-added products are:

(i) Maize
(ii) Wine
(iii) Fruit
(iv) Sugar

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

2.1.8 The TWO sectors that are the greatest contributors to the GDP of South Africa:

(i) Primary
(ii) Secondary
(iii) Tertiary
(iv) Quaternary

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

2.2 Choose a term from COLUMN B that matches the statement 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	Buying and selling of goods and services	A	trade agreement
2.2.2	The difference in value between a country's imports and exports	B	trade
2.2.3	Commodities or goods brought into a country from another country	C	exports
2.2.4	An arrangement between countries with respect to trade	D	imports
2.2.5	Goods traded within a country	E	balance of trade
2.2.6	Goods manufactured and traded between countries	F	local trade
2.2.7	Goods or services sold to another country	G	foreign exchange
		H	international trade

(7 x 1) (7)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

2.3 Refer to the case study on beef production in South Africa.

BEEF PRODUCTION IN SOUTH AFRICA

South Africa produces 85% of its meat requirements. There is a great demand for beef locally. The local demand for beef generally outstrips production, even though there are untapped reserves in the communal farming areas.

In South Africa, beef production is characterised by its dual nature of small-scale and large-scale farming. Since cattle serves as an indicator of wealth in some communities, communal farming does not contribute to South Africa's meat requirements.

Characteristically, beef production is a long-term undertaking and profits are rarely made in the short term. The climatic conditions in some parts of South Africa also are not suitable for beef production.

[Adapted from https://www.idc.co.za/wp-content/uploads/2018/11/Beef-Study-Final]

2.3.1 What is the percentage shortfall in South Africa regarding its meat requirements? (1 x 1) (1)

2.3.2 Why is beef production important for South Africa? (1 x 2) (2)

2.3.3 Suggest TWO physical factors that have a negative impact on beef production in South Africa. (2 x 2) (4)

2.3.4 In a paragraph of approximately EIGHT lines, suggest how small-scale beef farmers can be assisted to increase production. (4 x 2) (8)

Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624

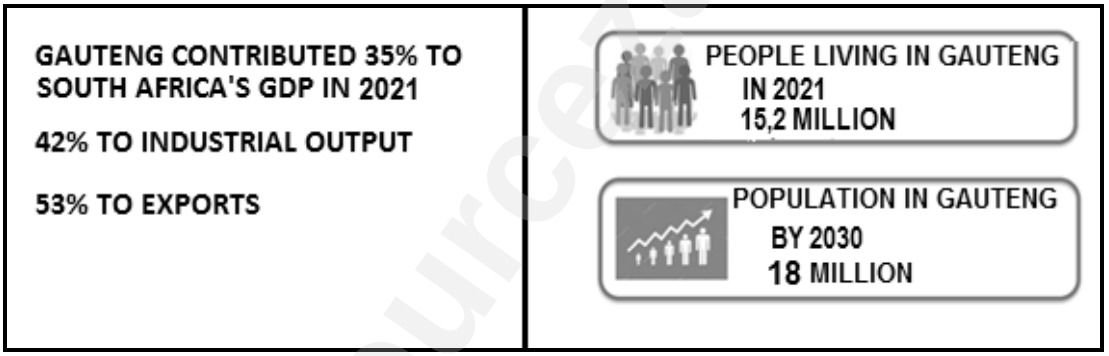
Downloaded from eduresourceza.com

2.4 Refer to the infographic on the Gauteng (PWV) core industrial region.

GAUTENG (PWV) INCREASED CONTRIBUTION TO GROSS DOMESTIC PRODUCT

The Gauteng (PWV) core industrial region generated 35%, or an estimated R675 billion, of the gross domestic product in 2021, consolidating its position as the single largest contributor to the economy of the country. Even though Gauteng (PWV) has the smallest land area of 1,4% in the country, its economy is more than twice that of the South-western Cape.

After the tertiary sector, the secondary sector is the second largest contributor, generating 24,3% of the provincial economy. The manufacturing subsector dominated contributions within the secondary sector. The Gauteng (PWV) core industrial region accounts for the largest share of the country's manufacturing sector with almost half of all factories housed in the province.



[Source: file://Growing%20Gauteng (PWV) core industrial region%20Together%202030]

2.4.1 What percentage did the Gauteng (PWV) core industrial region contribute to South Africa's GDP in 2021? (1 x 1) (1)

2.4.2 Give TWO main industries found in the Gauteng (PWV) core industrial region. (2 x 1) (2)

2.4.3 Give a reason from the infographic for the manufacturing subsector dominating the secondary sector in the Gauteng (PWV) core industrial region. (1 x 2) (2)

2.4.4 What is the advantage of Gauteng's high population concentration for the Gauteng (PWV) core industrial region? (2 x 2) (4)

2.4.5 Explain THREE factors that have favoured the location of industries in the Gauteng (PWV) core industrial region. (3 x 2) (6)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

2.5 Refer to the infographic on the informal sector.

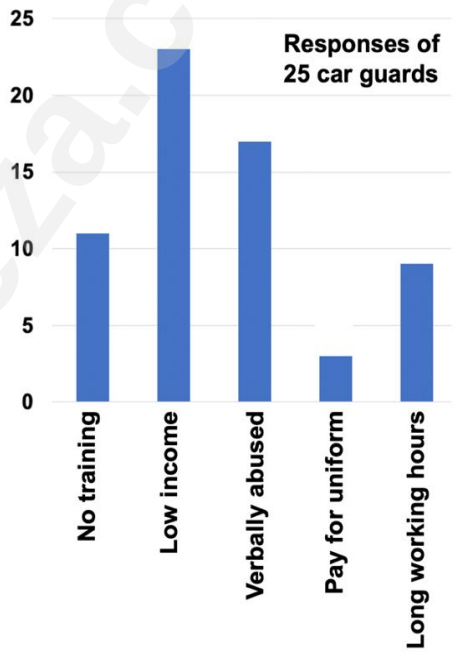
CAR GUARDING AS A LIVELIHOOD IN THE INFORMAL SECTOR

Car guarding is a distinctly South African informal sector employment activity. A car guard is someone who, in exchange for a donation, offers to guard vehicles in a public or private parking area. The amount of the donation is at the discretion of the motorist.

Many South Africans are unemployed. Foreigners come to South Africa seeking a better life, but they struggle to find employment. Car guarding, therefore, is an opportunity through which many people may be able to earn at least some income.

Profile of a car guard

- Average age: 38
- Average number of years working as car guard: 6
- Average working days per week: 5,4
- Average working hours per day: 8,5
- Average income per day: R98,33



Risks and challenges

[Source: 'Examining car guarding as a livelihood in the informal sector', article in Local Economy, September 2017]

2.5.1 Why do car guards fall within the informal sector? (1 x 2) (2)

2.5.2 According to the graph, what is the greatest risk and challenge for car guards? (1 x 1) (1)

2.5.3 Why is the income of a car guard dependent on the number of hours worked? (1 x 2) (2)

2.5.4 Give reasons why the number of car guards increased in urban areas over the last few years. (2 x 2) (4)

2.5.5 What can be done by the local government to improve the working conditions of South Africans and foreigners in the informal sector? (3 x 2) (6)

[60]

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

SECTION B

QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES

GENERAL INFORMATION ON ALBERTON

N

Coordinates: 26º15'S; 28°06'E

Alberton is a city situated in the southern part of the East Rand of Gauteng in South Africa. Alberton is primarily residential in character, with most of its workers commuting to work in nearby suburbs or cities on a daily basis.

Due to its central location, Alberton has become one of the leading industrial areas – with short travelling times to large centres like Pretoria and Johannesburg. Access to major arterial routes allow for quick transportation of both raw materials and finished products to their destinations.

[Source: https://www.3cubeproperty.co.za/area-profiles/alberton]

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

ENGLISH	AFRIKAANS
Golf Course	Gholfbaan
Race Course	Resiesbaan
River	Rivier
Sewage Disposal Works	Rioolsuiweringswerke

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

3.1 **MAP SKILLS AND CALCULATIONS**

3.1.1 The map index for Alberton is 2628AC. **28** represents …

A 28° south of the equator.
B 28' south of the equator.
C 28' west of Greenwich meridian.
D 28° east of Greenwich meridian. (1 x 1) (1)

3.1.2 The coordinates of trigonometrical station 602, **F** in block **C3** on the topographic map, are …

A 26°18'45"S; 28°07'55"E.
B 26°17'49"S; 28°08'55"E.
C 26°17'15"S; 28°08'55"E.
D 28°07'52"S; 26°17'55"E. (1 x 1) (1)

3.1.3 Calculate the straight-line distance, in kilometres, between point **6** in block **A4** and point **7** in block **B4** on the orthophoto map.

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

3.1.4 Determine the true bearing of trigonometrical station 602, **F** in block **C3**, from Kathlehong railway station, **G** in block **D4** on the topographic map. (1 x 1) (1)

Refer to the topographic map to answer the questions on magnetic declination for 2022.

3.1.5 The difference in years is …

A 7.
B 8.
C 9.
D 10. (1 x 1) (1)

3.1.6 The mean annual change is … west of true north.

A 3'
B 8'
C 9'
D 10' (1 x 1) (1)

3.1.7 Use the answers to QUESTIONS 3.1.5 and 3.1.6 to calculate the current magnetic declination. (3 x 1) (3)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

3.2 **MAP INTERPRETATION**

3.2.1 Feature **8** in block **C5** on the orthophoto map represents a ...

A main road.
B perennial river.
C secondary road.
D race course. (1 x 1) (1)

3.2.2 Street pattern (plan) **9** in block **A2** on the orthophoto map is …

A irregular (planned).
B gridiron.
C radial.
D irregular (unplanned). (1 x 1) (1)

3.2.3 Give evidence from block **A2** to support your answer to QUESTION 3.2.2. (1 x 2) (2)

3.2.4 A school is located at **10** in block **B3** on the orthophoto map. How does the street pattern (plan) identified in QUESTION 3.2.2 create a problem for the parents that transport their children to school? (1 x 2) (2)

Refer to the topographic map.

3.2.5 The industries located in blocks **A5** and **B5** can be classified as heavy industries.

Give TWO pieces of evidence found in blocks **A5** and **B5** to support the above statement. (2 x 2) (4)

3.2.6 Explain the importance of the N3 (national freeway) in blocks **A3** and **A4** in creating accessibility to the industrial area at **H** for large local markets. (1 x 2) (2)

Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624

Downloaded from eduresourceza.com

3.3 **GEOGRAPHICAL INFORMATION SYSTEMS (GIS)**

Refer to the image of Ring Road West located in block **A3** on the orthophoto map.

[Source: https://www.google.com/maps/@-26.2700631,28.1204164,145m/data=!3m1!1e3]

3.3.1 Is the image of Ring Road West classified as vector or raster data? (1 x 1) (1)

3.3.2 Give a reason to support your answer to QUESTION 3.3.1. (1 x 1) (1)

3.3.3 Why is the number of lanes on Ring Road West referred to as attribute data? (1 x 2) (2)

Refer to blocks **A5** and **B5** on the topographic map.

3.3.4 Define the term *buffering.* (1 x 2) (2)

3.3.5 Why is buffering northwest of Union, in block **C5**, necessary? (1 x 2) (2)

[30]

TOTAL: 150

Copyright reserved Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624
Downloaded from eduresourceza.com

basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS/ NATIONAL SENIOR CERTIFICATE EXAMINATIONS

GEOGRAPHY P2

2022

MARKING GUIDELINES

MARKS: 150

These marking guidelines consist of 12 pages.

Copyright reserved
Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

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

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

30

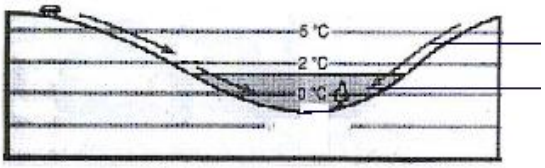
QUESTION 1

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**

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

SECTION A: RURAL AND URBAN SETTLEMENTS AND THE ECONOMIC GEOGRAPHY OF SOUTH AFRICA

QUESTION 1: RURAL AND URBAN SETTLEMENTS

1.1	1.1.1	C (1)	
	1.1.2	B (1)	
	1.1.3	C (1)	
	1.1.4	A (1)	
	1.1.5	C (1)	
	1.1.6	B (1)	
	1.1.7	A (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	Z (1)	
	1.2.5	Z (1)	
	1.2.6	Y (1)	
	1.2.7	Y (1)	(7 x 1) (7)
1.3	1.3.1	Decrease in the population living in rural areas (2) **[CONCEPT]**	(1 x 2) (2)
	1.3.2 GIVE EVIDENCE FROM THE SKETCH FOR RURAL DEPOP	(Village shop) closing down sale (1) KR Car Sales for sale (1) (Work shop) services cancelled (1) No people evident (1) **[ANY ONE]**	(1 x 1) (1)
	1.3.3 EVIDENCE FROM TABLE **2017-2020**	Population is decreasing (2) Accept answer given in figures from the table (2) **[ANY ONE]**	(1 x 2) (2)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

1.3.4 WHAT IS THE **SOCIAL IMPORTANCE** OF DISCOURAGING RURAL DEPOP?

Maintaining a cohesive rural community (2)
Preserve family ties or units (2)
Maintaining safety and security (2)
Balance of rural population age/sex structure (2)
Improved well-being of people (accept examples) (2)
Facilities will be developed/ not close down (accept examples) (2)
Services will be developed/ not close down (accept examples) (2)
There will be development/maintenance of infrastructure (accept examples) (2)
More employment opportunities (2)
Better salaries resulting in a better standard of living (2)
[ANY ONE] (1 x 2) (2)

1.3.5 **PARAGRAPH** **SUGGEST** FOUR **SUSTAINABLE** STRATEGIES TO CREATE MORE **EMPLOYMENT**

Decentralise industries to rural areas (2)
Development of Infrastructure (2)
Increase subsidies for services (2)
More tax relief for potential investors (2)
Increase incentives to start-ups that generate employment opportunities (2)
Provision of basic services (accept examples) (2)
Increase employment of local people in rural projects (2)
Access to loans for farmers (2)
Encourage small-scale commercial farming (2)
Increased use of drought resistant crops to be able to have production (2)
More facilities for agriculture extensions and research (2)
Increase agricultural planning (2)
Implement land reform programmes (2)
Provide training to improve skills (2)
Provide necessary tools and technology (2)
Promote (eco-)tourism (2)
Encourage local crafts/cultural activities (accept examples) (2)
Provide special incentives for non-farming activities (2)
Encourage local markets (accept examples) (2)
Boosting exports can create jobs (2)
Encourage women empowerment in job creation (2)
Coordination of wastepreneurs (waste recyclers) (2)
Encourage development of new industries (2)
Lobby against the building of bypasses (2)
[ANY FOUR] (4 x 2) (8)

1.4 1.4.1 Low income (1) (1 x 1) (1)

1.4.2 GIVE **EVIDENCE** FROM THE PHOTO TO SUPPORT ANSWER

Space between houses is limited/high density (2)
Small plots (stands) (2)
Size of the houses are small/ Low cost housing (accept examples) (2)
Similar style/design of houses (2)
Limited infrastructure (accept examples) (2)
Houses appear in rows (2)
Lack of vegetation (accept examples) (2)
Little or no recreational facilities (2)
[ANY ONE] (1 x 2) (2)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

1.4.3 WHY IS THIS TYPE OF RES AREA LOCATED CLOSE TO INDUSTRIAL AREA?

Employment opportunities (2)
Saves travel time (2)
Easy access to the place of employment (2)
Lower traveling costs (2)
Land is affordable/cheaper (2)
Unskilled/semi-skilled labour (2)
[ANY TWO] (2 x 2) (4)

1.4.4 GIVE TWO SOCIAL INJUSTICES

Air pollution (accept examples) (2)
Noise pollution (accept examples) (2)
Water pollution (accept examples) (2)
Health related problems (accept examples) (2)
[ANY TWO) (2 x 2) (4)

1.4.5 **EXPLAIN** TWO MEASURES IMPLEMENTED **BY INDUSTRIES AT B** TO REDUCE IMPACT OF SOCIAL INJUSTICES

Install filters on chimneys to reduce air pollution (2)
Increase the height of chimneys to disperse air pollution (2)
Implement legislation to control the amount of pollution associated with the industries (accept examples) (2)
Conduct research to determine the effect of their activities on the people or the environment (2)
Regular maintenance of infrastructure related to the industries (2)
Employ environmental officers to monitor pollution levels (2)
Introduce noise reduction methods to limit noise pollution (2)
Develop greenbelts / buffer zones around industries (accept examples) to control air pollution (2)
Encourage the use of green energy to reduce pollution levels (2)
Compensate the community for health care as a result of air pollution (2)
[ANY TWO] (2 x 2) (4)

1.5 1.5.1 Increase (1) (1 x 1) (1)

1.5.2 GIVE TWO REASONS FOR THE TREND

More people can afford/use vehicles (accept examples) (2)
More forms of public transport evident (accept examples) (2)
Distance between place of work and residence (2)
Increase in the number of people (2)
[ANY TWO] (2 x 2) (4)

1.5.3 HOW DOES TRAFFIC CONGESTION IMPACT THE **DAILY TRAVELLER**

Takes longer to reach destination (2)
Higher occurrence of road rage/stress/anxiety (2)
Increased fuel costs (2)
Increased health issues (accept examples) (2)
Late for meetings/work (2)
At risk of losing employment (2)
Possibility of accidents (2)
Smash and grab/ car hijackings (2)
[ANY TWO] (2 x 2) (4)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

1.5.4 SUGGEST **THREE STRATEGIES** TO REDUCE TRAFFIC CONGESTION

Encourage use of public transport (2)
Improved/safer public transport systems (2)
Efficient/reliable public transport systems (2)
More efficient rail services (2)
Increase the number of lanes (2)
Specialised lanes (accept examples) (2)
Encourage the use of scooters/bicycles (2)
Motorised barriers (to increase number of lanes) (2)
Lift clubs/car-pooling (2)
Increase parking tariffs in the CBD (2)
Park and ride facilities (2)
Use of tollgates (2)
Synchronised traffic lights (2)
Decentralise commercial functions (2)
Staggered starting times (2)
Ring roads and by-passes (2)
By-laws to reduce number of private vehicles on the road (2)
One way streets (2)
Proper road maintenance (2)
Encourage people to work from home (2)
Broadcast traffic accidents and congested routes (2)
Enforce existing road traffic laws (2)
CCTV to monitor road conditions (2)
Introduction of drones for delivery services (2)
[ANY THREE] (3 x 2) (6)

[60]

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

QUESTION 2: ECONOMIC GEOGRAPHY OF SOUTH AFRICA

2.1	2.1.1	D (1)	
	2.1.2	B (1)	
	2.1.3	C (1)	
	2.1.4	C (1)	
	2.1.5	D (1)	
	2.1.6	B (1)	
	2.1.7	C (1)	
	2.1.8	B (1)	(8 x 1) (8)
2.2	2.2.1	B (1)	
	2.2.2	E (1)	
	2.2.3	D (1)	
	2.2.4	A (1)	
	2.2.5	F (1)	
	2.2.6	H (1)	
	2.2.7	C (1)	(7 x 1) (7)
2.3	2.3.1	15% (1)	(1 x 1) (1)
	2.3.2 WHY IS BEEF PROD IMPORTANT TO SA?	Important source of food (protein) (2) Food security for the country (2) Great demand for beef (2) Stimulates the growth of the rural economy (2) Creates employment opportunities (accept examples) (2) Provides raw materials for the secondary sector (accept examples) (2) Promotes economic growth in other sectors (accept examples) (2) Export of beef brings in foreign exchange (2) Contributes to the GDP (2) Develops infrastructure (2) Cattle are kept as a measure of wealth (2) **[ANY ONE]**	(1 x 2) (2)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

	2.3.3 SUGGEST **TWO PHYSICAL FACTORS** THAT HAVE A NEGATIVE IMPACT ON BEEF PROD	Infertile soil/desertification (2) Soil erosion (2) Limited grazing land (2) Unreliable/low rainfall/droughts (2) Floods (2) Temperature extremes (2) Pests and diseases (accept examples) (2) **[ANY TWO]**	(2 x 2) (4)
	2.3.4 **PARAGRAPH** SUGGEST HOW **SMALL-SCALE BEEF FARMERS** CAN BE ASSISTED TO INCREASE PRODUCTION	Government can provide subsidies and grants (2) Access funding from banks (2) Educate and up-skilling farmers (2) Agricultural officers to assist and advise new- and small-scale farmers (2) Making more land available so that farmers can expand their farms (2) Assist cattle farmers in times of drought with feed and water for the animals so that production of beef is not affected (2) Provide farmers with better breeds for improved meat quality (2) Vaccination program for cattle (2) More research to improve production (accept examples) (2) **[ANY FOUR]**	(4 x 2) (8)
2.4	2.4.1	35 % (1)	(1 x 1) (1)
	2.4.2 GIVE TWO **MAIN INDUSTRIES** IN REGION	Iron and steel (1) Chemical (1) Motor car assembly (1) Construction (1) Machinery (1) Explosive industry (1) **[ANY TWO]**	(2 x 1) (2)
	2.4.3	Almost half of all the country's factories are found in Gauteng (2)	(1 x 2) (2)
	2.4.4 ADVANTAGE OF HIGH POP CON	Abundance of labour (2) Large local market (2)	(2 x 2) (4)
	2.4.5 EXPLAIN **THREE FACTORS** THAT FAVOURED THE LOCATION OF INDUSTRIES	Well-developed network of roads and railways to transport goods-(2) Efficient transport network that links it to the harbours (2) Abundant raw materials in close proximity to industries (2) Relatively cheap electricity as power is transmitted over short distances (2) Land is generally cheaper which is required for large industries (2) Land is generally flat making it easier for construction (2) Closest core industrial region to the rest of Africa (2) The local market increases the demand for manufactured goods (2) Abundance of (skilled, semi-skilled and unskilled) labour (2) Access to a reliable water supply for manufacturing (accept examples) (2) Many tertiary institutions for upskilling of workforce (2) Presence of link industries will assist with production (2) **[ANY THREE]**	(3 x 2) (6)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

2.5	2.5.1 WHY DO CAR GUARDS FALL WITHIN THE INFORMAL SECTOR?	Do not pay (income) tax (2) They are not registered (2) Poverty/high unemployment rate (2) **[ANY ONE]**	(1 x 2) (2)
	2.5.2	Low income (1)	(1 x 1) (1)
	2.5.3 INCOME VS HOURS WORKED	The more hours they work the more money they can potentially earn (2)	(1 x 2) (2)
	2.5.4 GIVE REASONS WHY THE NUMBER OF CAR GUARDS INCREASED OVER LAST FEW YEARS	More people are retrenched because of the declining economy (2) More people became unemployed (2) Covid-19 resulted in many businesses closing down (2) Foreigners come to SA to seek a better life but struggle to find employment (2) Increased car theft results in a high demand for car guards (2) **[ANY TWO]**	(2 x 2) (4)
	2.5.5 WHAT CAN BE DONE BY THE LOCAL GOV TO IMPROVE WORKING CONDITIONS FOR SA AND FOREIGNERS IN THE **INFORMAL SECTOR?**	Arrange skills training (2) Provide ablution facilities (2) Policing of area (2) Facilitate partnerships with private sector (2) Financial support (2) Improve relationships between locals and foreigners (2) Provide them with infrastructure/facilities/support services (2) Make it a law to regulate the informal sector (accept examples) (2) **[ANY THREE]**	(3 x 2) (6)
			[60]

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

SECTION B

QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES

3.1 MAP SKILLS AND CALCULATIONS

3.1.1 D (1) (1 x 1) (1)

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

3.1.3 **Actual Distance = Map distance x Map scale**
Actual Distance = 4,0 (1) cm x 0,1 km (Range 3,9 cm–4,1 cm)
= 0,4 km (1) (Range 0,39 km–0,41km) (1 x 2) (2)

3.1.4 310º (1) (Range 309º–311º) (1 x 1) (1)

3.1.5 C (1) (1 x 1) (1)

3.1.6 A (1) (1 x 1) (1)

3.1.7 Total change: 9 years x 3' = 27' (1) W
Magnetic declination for 2022: 18º29' +(1) 27' = 18º56' west of true north (1)
(3 x 1) (3)

3.2 MAP INTERPRETATION

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

3.2.2 B (1) (1 x 1) (1)

3.2.3 Roads intersect at right angles (2) (1 x 2) (2)

3.2.4 HOW DOES THE STREET PATTERN CREATE A PROBLEM FOR PARENTS'
There are many stops/ intersections that hinder the flow of traffic (2)
Parents can arrive late for work (2)
Increased money spent on fuel (2)
Increase in stress/road rage (2)
Can result in accidents (2)
Smash and grab (2)
[ANY ONE] (1 x 2) (2)

3.2.5 GIVE TWO PIECES OF EVIDENCE IN **A5** AND **B5** TO SUPPORT ABOVE STATEMENT
Occupy a large space (2)
Buildings are large (size) (2)
Located near the railway line (2)
Located near the national freeway/arterial road/roads (2)
Buildings are elongated and single storied (2)
Land is generally flat (2)
Availability of water (river) (2)
[ANY TWO] (2 x 2) (4)

3.2.6 N3 CREATING **ACCESSIBILITY** AT H
The N3 provides a quick/shorter transportation route for both raw materials and finished products (2) (1 x 2) (2)

Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624

Downloaded from eduresourceza.com

3.3 GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

3.3.1	Raster data (1)	(1 x 1) (1)
3.3.2 GIVE A REASON FOR YOUR ANSWER	It has pixels (grid cells) (1) It is an image/photograph (1) **[ANY ONE]**	(1 x 1) (1)
3.3.3	Describes the road (2)	(1 x 2) (2)
3.3.4	The demarcation of an area around a feature (2) **[CONCEPT]**	(1 x 2) (2)
3.3.5 WHY IS BUFFERING NW OF UNION IN **C5** NECESSARY?	To avoid flooding by the marsh and vlei (2) The soil could become saturated and could be hazardous to build in this area) To protect the destruction/pollution of the natural habitat (2) **[ANY ONE]**	(1 x 2) (2) **[30]**

TOTAL: 150

Copyright reserved Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624
Downloaded from eduresourceza.com

basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE/ NATIONAL SENIOR CERTIFICATE

GRADE 12

GEOGRAPHY P2

NOVEMBER 2020

MARKS: 75

TIME: 1½ hours

EXAMINATION NUMBER:													
CENTRE NUMBER:													

	M	In	SM	In	DM	In	CM	In	IM	In	MC	EA	EX	RM	In
Q1															
Q2															
Q3															
Q4															
TOT															

This question paper consists of 15 pages and 1 page for rough work and calculations.

Copyright reserved
Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624

Downloaded from eduresourceza.com

RESOURCE MATERIAL

1. An extract from the topographic map 2527CA RUSTENBURG (WEST)

2. Orthophoto map 2527 CA 15 TLHABANE

3. **NOTE:** The resource material must be collected by schools for their own use.

INSTRUCTIONS AND INFORMATION

1. Write your EXAMINATION NUMBER and CENTRE NUMBER in the spaces on the cover page.

2. Answer ALL the questions in the spaces provided in this question paper.

3. You are provided with a 1 **:** 50 000 topographic map 2527CA RUSTENBURG (WEST) and an orthophoto map 2527 CA 15 TLHABANE of a part of the mapped area.

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

5. You may use the blank page at the end of this question paper for all rough work and calculations. Do NOT detach this page from the question paper.

6. Show ALL calculations and formulae, where applicable. Marks will be allocated for these.

7. Indicate the unit of measurement or compass direction in the final answer of calculations, e.g. 10 km; 2,1 cm; west of true north.

8. You may use a non-programmable calculator.

9. You may make use of a magnifying glass.

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

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

ENGLISH	**AFRIKAANS**
Diggings	Uitgrawings
River	Rivier
Cemetery	Begraafplaas
Protected Natural Environment	Beskermde Natuurlike Omgewing
Technical College	Tegniese Kollege

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

GENERAL INFORMATION ON RUSTENBURG

Rustenburg was established in 1851 as a central place town to support a fertile farming area producing citrus fruit, tobacco, peanuts, sunflower seeds, maize, wheat and cattle. The area became a primary agricultural region with vast citrus estates due to the favourable climate.

Rustenburg is home to the two largest platinum mines in the world and the world's largest platinum refinery, which processes around 70% of the world's platinum.

Lately, the vast citrus estates in the region have been in constant decline due to pollution from increased smelting and beneficiating processes by the mines. (Beneficiation is when value is added to the raw materials.)

Rustenburg has a temperate climate. It has very warm summers and mild winters. Due to the altitude, summers are not quite as hot as one might expect. Precipitation occurs mainly in summer.

[Source: http://en.wikipedia.org/wiki/rustenburg]

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

QUESTION 1: MULTIPLE-CHOICE QUESTIONS

The questions below are based on the 1 : 50 000 topographic map 2527CA RUSTENBURG (WEST) as well as the orthophoto map 2527 CA 15 TLHABANE. Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A–D) in the block next to each question.

1.1 Rustenburg is situated in …

A Gauteng.
B Limpopo.
C the North West.
D the Free State.

1.2 The contour interval on the orthophoto map is … metres.

A 5
B 10
C 20
D 25

1.3 The map index of the topographic map, south-west of 2527CA RUSTENBURG, is …

A 2527CC.
B 2526DD.
C 2527AC.
D 2526BD.

1.4 The grid reference/coordinates of trigonometrical station 256 in block **C1** on the topographic map is …

A 25°34'35"S 27°05'19"E.
B 27°05'35"S 25°34'19"E.
C 27°05'34"S 25°35'19"E.
D 25°34'23"S 27°05'33"E.

1.5 The approximate distance from **K** in block **H10** on the topographic map along the railway to Rustenburg in a south-easterly direction is … km.

A 1
B 1,5
C 2
D 2,5

1.6 Stream **L** in block **B2** on the topographic map flows in a … direction.

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

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

1.7 The climate of Rustenburg is mainly influenced by …

A altitude.
B fronts.
C the ocean.
D aspect.

1.8 At night the … wind influences the temperatures of Geelhoutpark (**H8**) on the topographic map.

A anabatic
B katabatic
C onshore
D offshore

1.9 The N4 passes through a … in the Magaliesberg mountain range.

A ridge
B valley
C gorge
D gap

1.10 Land-use zone **1** on the orthophoto map is the … zone.

A transition
B commercial
C residential
D industrial

1.11 The physical expansion of Rustenburg in a westerly direction is mostly limited by the ...

A cultivated lands.
B national road.
C mountain range.
D water features.

1.12 Rustenburg was originally classified as a … town.

A central place
B specialised
C break-of-bulk
D trade and transport

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

1.13 The main activity within the Magaliesberg Protected Natural Environment on the topographic map is part of the … sector.

A primary
B secondary
C tertiary
D quaternary

1.14 The feature at **2** on the orthophoto map is a/an …

A industry.
B mall.
C school.
D station.

1.15 The vertical aerial photograph from which the orthophoto map was produced was taken between …

A 06:00 and 07:00.
B 10:00 and 11:00.
C 14:00 and 15:00.
D 18:00 and 19:00.

(15 x 1) **[15]**

eduresourceza.com

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

QUESTION 2: MAP CALCULATIONS AND TECHNIQUES

2.1 Refer to the hiking trail in blocks **A5** and **B5** on the topographic map.

2.1.1 Determine the 2020 magnetic bearing (MB) of the hiking trail from **M** to **N** in blocks **A5** and **B5** if the updated mean magnetic declination (MD) is 17°40' west of true north. Show ALL calculations. Marks will be awarded for calculations.

Formula:
Magnetic bearing = true bearing + magnetic declination

_____

_____

_____

(2 x 1) (2)

2.1.2 Explain why it is important to use the magnetic bearing instead of the true bearing to determine direction on topographic maps.

_____

_____

(1 x 1) (1)

2.2 Refer to the orthophoto map and answer the questions on gradient.

2.2.1 Determine the average gradient of the slope for a truck that will transport its cargo (goods) from the industries at **3** (1 160 m above sea level) to the railway station at **4** (1 148 m above sea level) on the orthophoto map. Show ALL calculations. Marks will be awarded for calculations.

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

_____

_____

_____

_____

_____

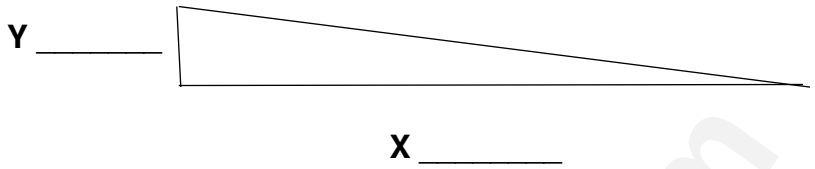
_____

(5 x 1) (5)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

2.2.2 Fill in the correct values for **X** and **Y** in the space on the diagram below with regard to the answer to QUESTION 2.2.1.



(2 x 1) (2)

2.2.3 Why will it be easy for the truck to transport its cargo over the calculated gradient?

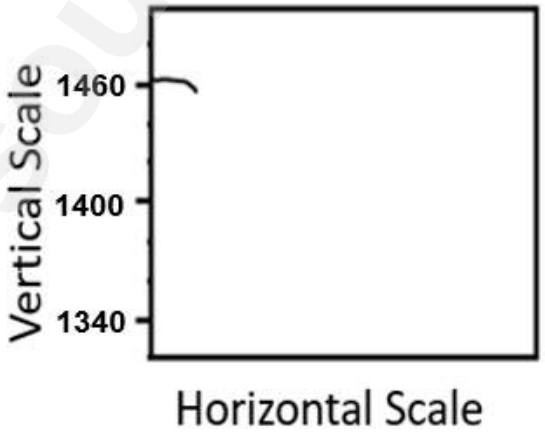
_____

_____

(1 x 1) (1)

2.3 Refer to the line drawn from spot height 1461 in block **C1** to the ruin at **O** in block **C2** on the topographic map.

2.3.1 Complete the rough cross-section below from spot height 1461 in block **C1** to the ruin at **O** in block **C2**.



(3 x 1) (3)

2.3.2 Is the ruin at **O** in block **C2** intervisible from spot height 1461 in block **C1**? Answer YES or NO. Give a reason for your answer.

Yes OR No: _____

Reason: _____

_____

(1 + 1) (2)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

2.3.3 Calculate the vertical exaggeration (VE) of the cross-section between spot height 1461 in block **C1** and the ruin at **O** in block **C2** if the vertical scale is 1 cm represents 20 m.

Show ALL calculations. Marks will be awarded for calculations.

Formula: **Vertical exaggeration** $= \dfrac{\textbf{vertical scale (VS)}}{\textbf{horizontal scale (HS)}}$

_____

_____

_____

_____

_____

(4 x 1) (4)
[20]

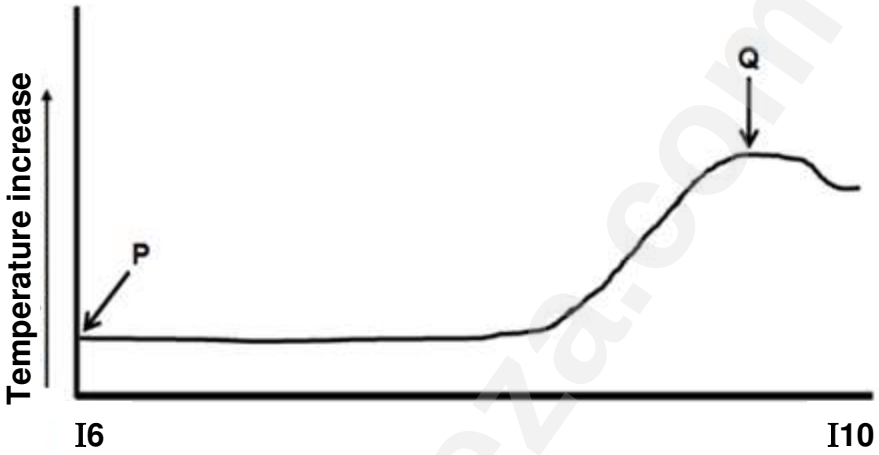
eduresourceza.com

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

QUESTION 3: APPLICATION AND INTERPRETATION

3.1 The temperature graph below illustrates the general temperature change during the day from spot height 1614 (**P**) in block **I6** to the technical college (**Q**) in block **I10** on the topographic map.



3.1.1 The general trend of the change in temperature from **P** to **Q** is (increasing/decreasing)

_____

(1 x 1) (1)

3.1.2 Give a reason from the topographic map to explain the difference in temperature at **P** and **Q**.

_____

_____

_____

_____

(1 x 2) (2)

3.1.3 Identify and explain ONE strategy that could be implemented by the local municipality in block **I10**.

Identification: _____

Explanation: _____

_____

(1 + 2) (3)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

3.2 Refer to the river system in block **C7**.

3.2.1 Identify the drainage pattern of the river system in block **C7**.

_____
(1 x 1) (1)

3.2.2 State the underlying rock structure associated with the drainage pattern identified in QUESTION 3.2.1.

_____
(1 x 1) (1)

3.2.3 Determine the stream order of the river system at point **R**.

_____

_____
(1 x 2) (2)

3.3 Refer to the stream flowing southwards in block **G4**.

3.3.1 In which stage of the fluvial cycle is the stream in block **G4**?

_____
(1 x 1) (1)

3.3.2 Give ONE piece of evidence from block **G4** to support your answer to QUESTION 3.3.1.

_____

_____
(1 x 1) (1)

3.4 Refer to blocks **C10** and **G7** on the topographic map.

3.4.1 Identify the street plans (patterns) at **S** in block **C10** and at **T** in block **G7**.

Street plan S: _____

Street plan T: _____
(2 x 1) (2)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

3.4.2 State TWO advantages of street plan (pattern) **T** in block **G7**.

Street plan T: _____

_____

_____

_____

(2 x 1) (2)

3.4.3 Give evidence from the topographic map for the development of the street plan (pattern) at **T**.

_____

_____

_____

(1 x 2) (2)

3.5 Refer to the mining activities of Townlands Platinum Mines on the orthophoto map and topographic map.

3.5.1 Give ONE reason evident on the topographic map that indicates that mining at Townlands Platinum Mines is practised on a large scale.

_____

(1 x 1) (1)

3.5.2 Explain how mining activities at Townlands Platinum Mines caused an environmental injustice in the area.

_____

_____

(1 x 2) (2)

3.5.3 Discuss the positive impact that Townlands Platinum Mines has on the economic development of Rustenburg.

_____

_____

_____

_____

_____

(2 x 2) (4)

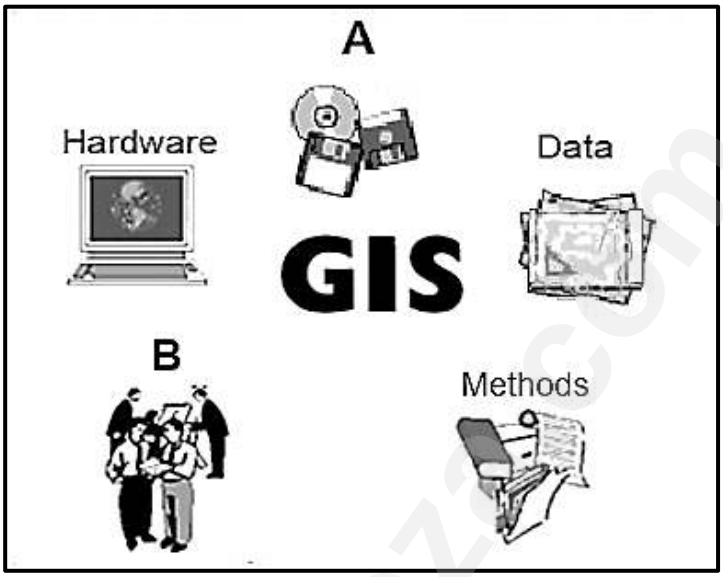
[25]

Copyright reserved
Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

QUESTION 4: GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

4.1 **COMPONENTS OF GIS**



4.1.1 Identify the components **A** and **B**.

A: _____

B: _____

(2 x 1) (2)

4.1.2 Why is component **B** important in GIS processes?

_____

_____

(1 x 2) (2)

4.2 Two locations (blocks **F10** and **H7** on the topographic map) have been identified for the development of a new cemetery. A GIS specialist has been appointed by the local municipality to recommend the best site for this development.

4.2.1 Which of the TWO locations (block **F10** or block **H7**) will be most suitable for the development of the new cemetery?

_____

(1 x 1) (1)

4.2.2 Identify TWO data layers that can be used in deciding on the new location for the cemetery.

_____

_____

(2 x 1) (2)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

4.2.3 Give a reason for your choice of ONE of the data layers identified in QUESTION 4.2.2.

_____

_____

(1 x 2) (2)

4.3 Refer to block **J1** on the topographic map.

4.3.1 What is v*ector data?*

_____

_____

(1 x 1) (1)

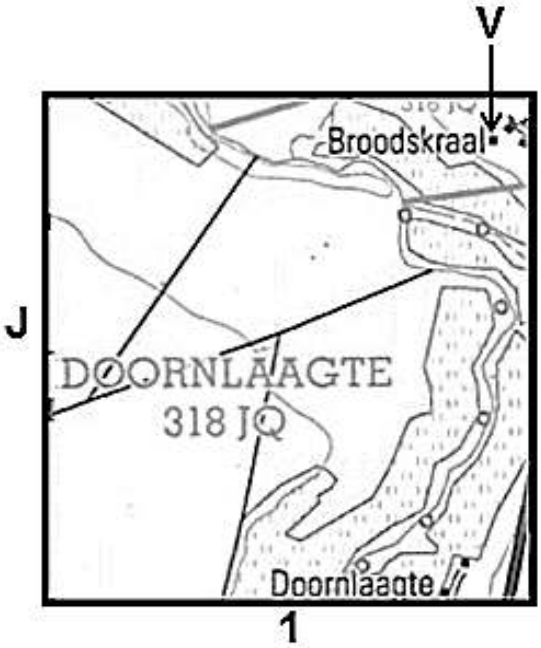
4.3.2 Give ONE natural line feature that the farmer used to determine the site of the cultivated land in block **J1**.

_____

(1 x 1) (1)

4.3.3 Agricultural activity in block **J1** on the topographic map is confined along the river.

(a) Draw the symbol of the point feature that is used to extract ground water to increase water supply for agriculture, on the enlarged illustration of block **J1** below. This feature must be 40 mm southwest of the Broodskraal settlement (**V**).



(2 x 1) (2)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

(b) Explain the advantage of this specific location of the point feature drawn in QUESTION 4.3.3(a) for farming in the area.

_____

_____

_____

(1 x 2) (2)
[15]

TOTAL: 75

eduresourceza.com

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

ROUGH WORK AND CALCULATIONS

(NOTE: Do NOT detach this page from the question paper.)

eduresourceza.com

Copyright reserved
Downloaded from eduresourceza.com

organized by_Abutimalesela 0798975624
Downloaded from eduresourceza.com

basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE/
NATIONAL SENIOR CERTIFICATE

GRADE 12

GEOGRAPHY P2

NOVEMBER 2020

MARKING GUIDELINE

MARKS: 75

These marking guidelines consist of 16 pages.

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

RESOURCE MATERIAL

1. An extract from the topographic map 2527CA RUSTENBURG (WEST)

2. Orthophoto map 2527 CA 15 TLHABANE

3. **NOTE:** The resource material must be collected by schools for their own use.

INSTRUCTIONS AND INFORMATION

1. Write your EXAMINATION NUMBER and CENTRE NUMBER in the spaces on the cover page.

2. Answer ALL the questions in the spaces provided in this question paper.

3. You are provided with a 1 **:** 50 000 topographic map 2527CA RUSTENBURG (WEST) and an orthophoto map 2527 CA 15 TLHABANE of a part of the mapped area.

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

5. You may use the blank page at the end of this question paper for all rough work and calculations. Do NOT detach this page from the question paper.

6. Show ALL calculations and formulae, where applicable. Marks will be allocated for these.

7. Indicate the unit of measurement or compass direction in the final answer of calculations, e.g. 10 km; 2,1 cm; west of true north.

8. You may use a non-programmable calculator.

9. You may make use of a magnifying glass.

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

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

ENGLISH	**AFRIKAANS**
Diggings	Uitgrawings
River	Rivier
Cemetery	Begraafplaas
Protected Natural Environment	Beskermde Natuurlike Omgewing
Technical College	Tegniese Kollege

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

GENERAL INFORMATION ON RUSTENBURG

Rustenburg was established in 1851 as a central place town to support a fertile farming area producing citrus fruit, tobacco, peanuts, sunflower seeds, maize, wheat and cattle. The area became a primary agricultural region with vast citrus estates due to the favourable climate.

Rustenburg is home to the two largest platinum mines in the world and the world's largest platinum refinery, which processes around 70% of the world's platinum.

Lately, the vast citrus estates in the region have been in constant decline due to pollution from increased smelting and beneficiating processes by the mines. (Beneficiation is when value is added to the raw materials.)

Rustenburg has a temperate climate. It has very warm summers and mild winters. Due to the altitude, summers are not quite as hot as one might expect. Precipitation occurs mainly in summer.

[Source: http://en.wikipedia.org/wiki/rustenburg]

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

QUESTION 1: MULTIPLE-CHOICE QUESTIONS

The questions below are based on the 1 : 50 000 topographic map 2527CA RUSTENBURG (WEST) as well as the orthophoto map 2527 CA 15 TLHABANE. Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A–D) in the block next to each question.

1.1 Rustenburg is situated in …

A Gauteng.
B Limpopo.
C the North West.
D the Free State.

✓ **C**

1.2 The contour interval on the orthophoto map is … metres.

A 5
B 10
C 20
D 25

✓ **A**

1.3 The map index of the topographic map, south-west of 2527CA RUSTENBURG, is …

A 2527CC.
B 2526DD.
C 2527AC.
D 2526BD.

✓ **B**

1.4 The grid reference/coordinates of trigonometrical station 256 in block **C1** on the topographic map is …

A 25°34'35"S 27°05'19"E.
B 27°05'35"S 25°34'19"E.
C 27°05'34"S 25°35'19"E.
D 25°34'23"S 27°05'33"E.

✓ **D**

1.5 The approximate distance from **K** in block **H10** on the topographic map along the railway to Rustenburg in a south-easterly direction is … km.

A 1
B 1,5
C 2
D 2,5

✓ **B**

1.6 Stream **L** in block **B2** on the topographic map flows in a … direction.

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

✓ **C**

1.7 The climate of Rustenburg is mainly influenced by …

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

A altitude.
B fronts.
C the ocean.
D aspect.

✓ **A**

1.8 At night the … wind influences the temperatures of Geelhoutpark (**H8**) on the topographic map.

A anabatic
B katabatic
C onshore
D offshore

✓ **B**

1.9 The N4 passes through a … in the Magaliesberg mountain range.

A ridge
B valley
C gorge
D gap

✓ **D**

1.10 Land-use zone **1** on the orthophoto map is the … zone.

A transition
B commercial
C residential
D industrial

✓ **D**

1.11 The physical expansion of Rustenburg in a westerly direction is mostly limited by the ...

A cultivated lands.
B national road.
C mountain range.
D water features.

✓ **C**

1.12 Rustenburg was originally classified as a … town.

A central place
B specialised
C break-of-bulk
D trade and transport

✓ **A**

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

1.13 The main activity within the Magaliesberg Protected Natural Environment on the topographic map is part of the … sector.

A primary
B secondary
C tertiary
D quaternary

✓ **C**

1.14 The feature at **2** on the orthophoto map is a/an …

A industry.
B mall.
C school.
D station.

✓ **C**

1.15 The vertical aerial photograph from which the orthophoto map was produced was taken between …

A 06:00 and 07:00.
B 10:00 and 11:00.
C 14:00 and 15:00.
D 18:00 and 19:00.

✓ **C**

(15 x 1) **[15]**

eduresourceza.com

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

QUESTION 2: MAP CALCULATIONS AND TECHNIQUES

2.1 Refer to the hiking trail in blocks **A5** and **B5** on the topographic map.

2.1.1 Determine the 2020 magnetic bearing (MB) of the hiking trail from **M** to **N** in blocks **A5** and **B5**, if the updated mean magnetic declination (MD) is 17°40' west of true north. Show ALL calculations. Marks will be awarded for calculations.

Formula:
Magnetic bearing = true bearing + magnetic declination

Magnetic Bearing: *333º✓ (332° – 334°) + 17º40' = 350º40'✓*
(range *349º40'* to *351º40')* (2 x 1) (2)

2.1.2 Explain why it is important to use the magnetic bearing instead of the true bearing to determine direction on topographic maps.

Desired destination will not be reached if the true bearing is used/To reach desired destination ✓
The magnetic north changes annually ✓
Magnetic bearing gives you correct/ accurate direction ✓
(ANY ONE) (1 x 1) (1)

2.2 Refer to the orthophoto map and answer the questions on gradient.

2.2.1 Determine the average gradient of the slope for a truck that will transport its cargo (goods) from the industries at **3** (1 160 m above sea level) to the railway station at **4** (1 148 m above sea level) on the orthophoto map. Show ALL calculations. Marks will be awarded for calculations.

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

Vertical interval: 1 160 – 1 148 = 12✓m

Horizontal equivalent: 16,4✓cm x 100 (range: 16,3 to 16,9)

1 640 ✓ m (range: 1 630 to 1 690)

$\frac{12}{1640}$ *✓ (correct substitution)*

$\frac{1}{136.7}$

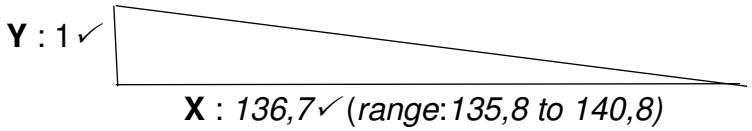
OR

1 : 136,7✓ (range: 1 : 135,8 to 140,8) (5 x 1) (5)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

2.2.2 Fill in the correct values for **X** and **Y** in the space on the diagram below with regard to the answer to QUESTION 2.2.1.



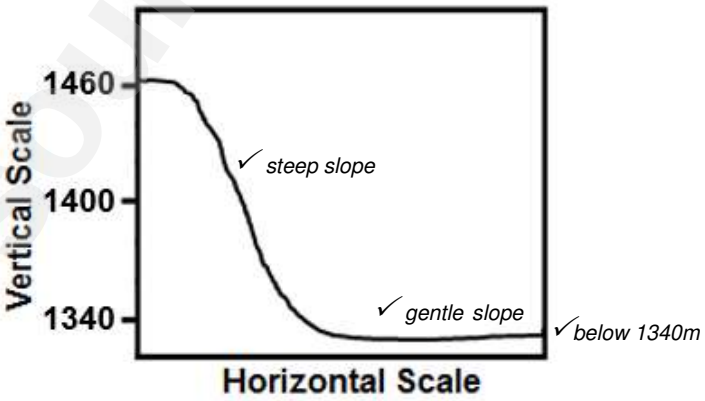
*(If candidate has a different answer at **X** in Q 2.2.1 but used that answer and correctly substituted it into **X**, marks should be allocated for the conceptual understanding)* (2 x 1) (2)

2.2.3 Why will it be easy for the truck to transport its cargo over the calculated gradient?

The slope / gradient is gentle ✓ (1 x 1) (1)

2.3 Refer to the line drawn from spot height 1461 in block **C1** to the ruin at **O** in block **C2** on the topographic map.

2.3.1 Complete the rough cross-section below from spot height 1461 in block **C1** to the ruin at **O** in block **C2**.



(3 x 1) (3)

2.3.2 Is the ruin at **O** in block **C2** intervisible from spot height 1461 in block **C1**? Answer YES or NO. Give a reason for your answer.

Yes OR No: *No* ✓

Reason: *The convex slope* ✓
*There is an obstruction between **O** and spot height 1461* ✓
(ANY ONE) (1 + 1) (2)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

2.3.3 Calculate the vertical exaggeration (VE) of the cross-section between spot height 1461 in block **C1** and the ruin at **O** in block **C2** if the vertical scale is 1 cm represents 20 m.

Show ALL calculations. Marks will be awarded for calculations.

Formula: **Vertical exaggeration** $= \dfrac{\textbf{vertical scale (VS)}}{\textbf{horizontal scale (HS)}}$

VS = 1:2000 ✓

HS = 1:50 000 ✓

VE= $\dfrac{1:2\,000}{1:50\,000}$ ✓ *OR* $\dfrac{\frac{1}{2\,000}}{\frac{1}{50\,000}}$ ✓

$\dfrac{1}{2000} \times \dfrac{50\,000}{1}$

25 times ✓ (4 x 1) (4)

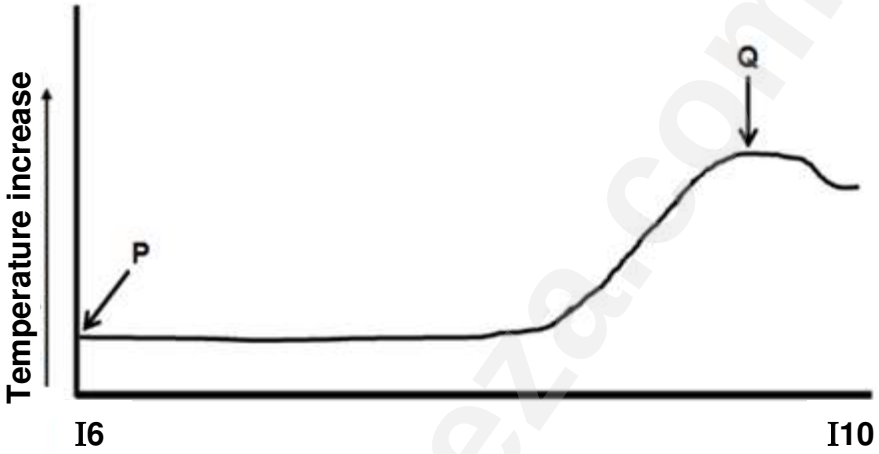
[20]

Copyright reserved Downloaded from eduresourceza.com Please turn over

Downloaded from eduresourceza.com

QUESTION 3: APPLICATION AND INTERPRETATION

3.1 The temperature graph below illustrates the general temperature change during the day from spot height 1614 (**P**) in block **I6** to the technical college (**Q**) in block **I10** on the topographic map.



3.1.1 The general trend of the change in temperature from **P** to **Q** is (increasing/decreasing)

Increasing ✓ (1 x 1) (1)

3.1.2 Give a reason from the topographic map to explain the difference in temperature at **P** and **Q**.

*The built-up area at **Q** absorbs more heat than the natural area at **P**✓✓*
*The natural area at **P** absorbs less heat than the built-up area at **Q**✓✓*
*The area at **P** is at a higher altitude therefore lower temperatures are experienced ✓✓* (2)
(ANY ONE) (1 x 2)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

3.1.3 Identify and explain ONE strategy that could be implemented by the local municipality in block **I10**.

Identification	Explanation
Green belt/Recreational area/sports field✓ (roof top gardens)	*Plants/vegetation absorb a lot of heat for photosynthesis ✓✓ Vegetation absorb a lot of greenhouse gases/carbon dioxide✓✓*
Reflective paint colours✓	*Surface with high albedo reflects more heat so they stay cool. ✓✓*
Public transportation ✓	*Reduce the number of vehicles ✓✓*
Water sources ✓	*Water reduces temperature ✓✓*
Green energy ✓	*Energy saving strategies e.g. solar energy, bio mass energy ✓✓*
Legislation ✓	*Give laws and fines for excessive release of pollution ✓✓*
[ANY ONE] (1 x 1) (1)	*[ANY ONE] (1 x 2) (2)*

3.2 Refer to the river system in block **C7**.

3.2.1 Identify the drainage pattern of the river system in block **C7**.

Dendritic pattern✓ (1 x 1) (1)

3.2.2 State the underlying rock structure associated with the drainage pattern identified in QUESTION 3.2.1.

Uniform /homogeneous/ similar resistant rock structure ✓
[Not examples] (1 x 1) (1)

3.2.3 Determine the stream order of the river system at point **R**.

3rd ✓✓ (order) (1 x 2) (2)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

3.3 Refer to the stream flowing southwards in block **G4**.

3.3.1 In which stage of the fluvial cycle is the stream in block **G4**?

Upper course✓
(Young/Youthful/Torrent stage) (1 x 1) (1)

3.3.2 Give ONE piece of evidence from block **G4** to support your answer to QUESTION 3.3.1.

Contour lines point to the highest value indicating a steep sloped valley✓
Magaliesberg/ contour lines close together/ steep slopes/ mountainous area✓
Short non-perennial stream/1st order stream✓
Straight stream✓
Close to source✓
(ANY ONE) (1 x 1) (1)

3.4 Refer to blocks **C10** and **G7** on the topographic map.

3.4.1 Identify the street plans (patterns) at **S** in block **C10** and at **T** in block **G7**.

Street plan S: *Radial* ✓

Street plan T: *Irregular* ✓ (2 x 1) (2)

3.4.2 State TWO advantages of street plan (pattern) **T** in block **G7**.

Street plan T:
Smooth flow of traffic/ fewer intersections ✓
Not monotonous/not boring/ interesting suburb layout✓
It accommodates steep slopes✓
Saves time ✓
Saves fuel ✓
Not easy to hijack ✓
Fewer accidents ✓
Less road rage ✓
Less noise/air pollution ✓
Aesthetic appeal ✓
(ANY TWO) (2)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

3.4.3 Give evidence from the topographic map for the development of the street plan (pattern) at **T**.

Accommodates the steep gradient/slope✓✓ (1 x 2) (2)

3.5 Refer to the mining activities of Townlands Platinum Mines on the orthophoto map and topographic map.

3.5.1 Give ONE reason evident on the topographic map that indicates that mining at Townlands Platinum Mines is practised on a large scale.

Occupies a large area✓
Service lines ✓
Mine dumps ✓
Slimes dams ✓
Power lines ✓
Conveyor belt ✓
Shafts ✓
Roads/ railway line✓
Excavations ✓
Canals/ pipelines/ reservoirs ✓
Diggings ✓
(ANY ONE) (1 x 1) (1)

3.5.2 Explain how mining activities at Townlands Platinum Mines caused an environmental injustice in the area.

Biodiversity is disturbed✓✓
Decrease/removal of natural vegetation✓✓
Increases soil erosion✓✓
The occurrence of slimes dams✓✓
Ecosystems are disturbed✓✓
Aesthetic disturbance (no aesthetic beauty) ✓✓
Air/ water/ land pollution/ acid rain increases ✓✓
Noise pollution increases ✓✓
Acid mine drainage increases✓✓
Increases land despoliation/ scarring/ land degradation/sinkholes ✓✓
(ANY ONE-MUST BE A QUALIFIED INJUSTICE) (1 x 2) (2)

3.5.3 Discuss the positive impact that Townlands Platinum Mines has on the economic development of Rustenburg.

It provides job opportunities to the surrounding community✓✓
It provides/develops/improves the infrastructure✓✓ (accept example of different types of infrastructure, e.g. road, power supply, railway, etc. ✓✓)
It brings business and investment opportunities to Rustenburg town✓✓
Multiplier effect on all sectors (accept qualified examples) ✓✓
Increased earnings stimulate trade in local market and increases buying power✓✓

(4)

Downloaded from eduresourceza.com

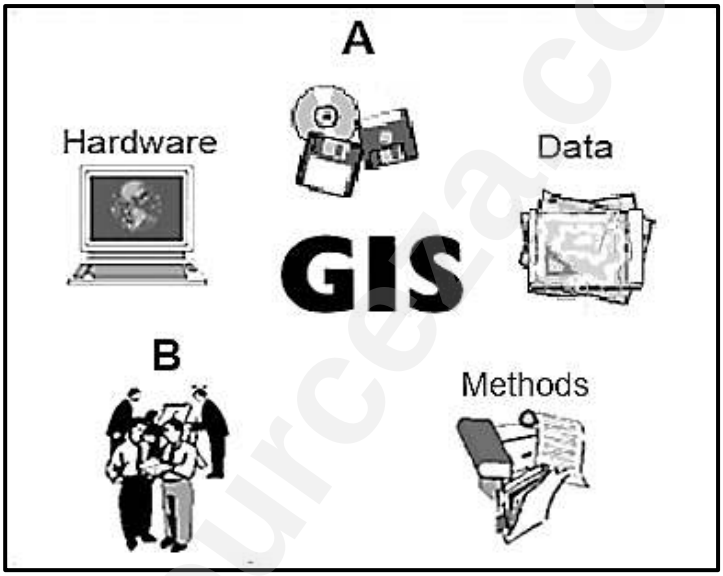
Downloaded from eduresourceza.com

Local authorities improve service delivery ✓✓
Sector education training authorities (SETA) enable skills development to local population for employment in mines✓✓
Increases foreign exchange may be linked to the point on investments ✓✓
(ANY TWO) (2 x 2)

[25]

QUESTION 4: GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

4.1 COMPONENTS OF GIS



4.1.1 Identify the components **A** and **B**.

A: *Software✓*

B: *People/ Personnel ✓* (2 x 1) (2)

4.1.2 Why is component **B** important in GIS processes?

People collect/ capture/ store/ manipulate/ retrieve/ analyse/ make decisions of geographic data✓✓
[Accept examples]
(ANY ONE) (1 x 2) (2)

4.2 Two locations (blocks **F10** and **H7** on the topographic map) have been identified for the development of a new cemetery. A GIS specialist has been appointed by the local municipality to recommend the best site for this development.

4.2.1 Which of the TWO locations (block **F10** or block **H7**) will be most suitable for the development of the new cemetery?

F 10✓ (1 x 1) (1)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

4.2.2 Identify TWO data layers that can be used in deciding on the new location for the cemetery.

Infrastructure✓
Relief/topography✓
Drainage ✓
Land use✓
Geology ✓
Soil ✓
Vegetation✓
(ANY TWO- NO EXAMPLES ACCEPTED) (2 x 1) (2)

4.2.3 Give a reason for your choice of ONE of the data layers identified in QUESTION 4.2.2.

LINK

Infrastructure: *Easy access to the cemetery✓✓*
Relief: *Flat land makes it cheaper and easier to dig graves✓✓*
Drainage: *Access to water supply /Level of water table✓✓*
Land use*: Away from areas that could create noise/to determine compatibility with the surroundings ✓✓*
Geology*: Stability of area✓✓*
Soil*: Soft deep soil makes it easy to dig graves. ✓✓*
Vegetation*: Lack of natural vegetation ✓✓*
(ANY ONE) (1 x 2) (2)

4.3 Refer to block **J1** on the topographic map.

4.3.1 What is v*ector data?*

Vector data is when spatial objects are represented by points, lines and polygons (areas) ✓
(CONCEPT) (1 x 1) (1)

4.3.2 Give ONE natural line feature that the farmer used to determine the site of the cultivated land in block **J1**.

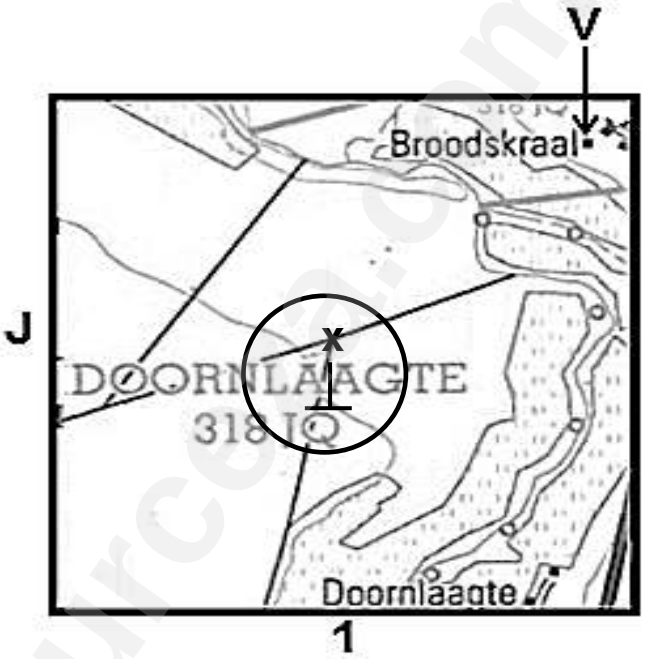
River/non-perennial river/perennial river/stream✓ (1 x 1) (1)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

4.3.3 Agricultural activity in block **J1** on the topographic map is confined along the river.

(a) Draw the symbol of the point feature that is used to extract ground water to increase water supply for agriculture, on the enlarged illustration of block **J1** below. This feature must be 40 mm southwest of the Broodskraal settlement (**V**).



Accept 1 mark for the symbol
Accept 1 mark for the location (circle indicates the accepted range) (2 x 1) (2)

(b) Explain the advantage of this specific location of the point feature drawn in QUESTION 4.3.3(a) for farming in the area.

Cultivation can take place away from the river ✓✓
It is centrally located for accessibility to water supply✓✓
Water table is close to surface therefore constant water supply✓✓
Cultivated land can be extended✓✓

(ANY ONE) (1 x 2) (2)
[15]

TOTAL: 75

Copyright reserved
Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624
Downloaded from eduresourceza.com

basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

GEOGRAPHY P2

NOVEMBER 2019

MARKS: 75

TIME: 1½ hours

EXAMINATION NUMBER:													
CENTRE NUMBER:													

	M	In	SM	In	DM	In	CM	In	IM	In	MC	EA	EX	RM	In
Q1															
Q2															
Q3															
Q4															
TOT															

This question paper consists of 14 pages and 1 page for rough work and calculations.

Copyright reserved
Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624

Downloaded from eduresourceza.com

RESOURCE MATERIAL

1. An extract from topographic map 2731BC PONGOLA.

2. Orthophoto map 2731 BC 13 PONGOLA.

3. **NOTE:** The resource material must be collected by schools for their own use.

INSTRUCTIONS AND INFORMATION

1. Write your EXAMINATION NUMBER and CENTRE NUMBER in the spaces on the cover page.

2. Answer ALL the questions in the spaces provided in this question paper.

3. You are provided with a 1 **:** 50 000 topographic map (2731BC PONGOLA) and an orthophoto map (2731 BC 13 PONGOLA) of a part of the mapped area.

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

5. You may use the blank page at the end of this question paper for all rough work and calculations. Do NOT detach this page from the question paper.

6. Show ALL calculations and formulae, where applicable. Marks will be allocated for these.

7. Indicate the unit of measurement in the final answer of calculations, e.g. 10 km, 2,1 cm.

8. You may use a non-programmable calculator.

9. You may use a magnifying glass.

10. The area demarcated in BLACK AND RED on the topographic map represents the area covered by the orthophoto map.

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

ENGLISH	**AFRIKAANS**
Aerodrome	Vliegveld
Diggings	Uitgrawings
Canal	Kanaal
Golf Course	Gholfbaan
Hospital	Hospitaal
River	Rivier
Sewerage Works	Rioolwerke
Sugar Mill	Suikermeule
Waterfall	Waterval

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

GENERAL INFORMATION ON PONGOLA

Pongola (also known in isiZulu as uPhongolo) is a small town located in northern KwaZulu-Natal, only 10 km from the Swaziland border. Pongola is surrounded by 50 km² of sugar cane and subtropical fruit plantations. The town thrived as a result of the irrigation (canal) system and a sugar mill. Pongola is situated in a tranquil subtropical environment and normally receives about 519 mm of rain per year, with most rainfall in summer.

[Source: http://en.wikipedia.org/wiki/pongola]

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

QUESTION 1: MULTIPLE-CHOICE QUESTIONS

The questions below are based on the 1 : 50 000 topographic map (2731BC PONGOLA), as well as the orthophoto map of a part of the mapped area. Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A–D) in the block next to each question.

1.1 Pongola is situated in …

A the Eastern Cape.
B the Western Cape.
C Gauteng.
D KwaZulu-Natal.

1.2 The international boundary north on the topographic map separates South Africa (Pongola) from …

A Lesotho.
B Swaziland.
C Zimbabwe.
D Namibia.

1.3 The contour interval of the orthophoto map is … metres.

A 2
B 5
C 10
D 20

1.4 The index sheet south-east on the orthophoto map 2731 BC 13 Pongola is …

A 2731 BC 17.
B 2731 CB 17.
C 2731 DB 16.
D 2731 BC 19.

1.5 The feature at 27°23'21"S 31°35'55"E on the topographic map is a/an …

A farmstead.
B excavation.
C reservoir.
D dam.

1.6 The Mzinyane River at **K** flowing in blocks **F3** and **F4** on the topographic map flows in a … direction.

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

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

1.7 The difference in height between trigonometrical station 89 in block **C7** and trigonometrical station 83 in block **B9** on the topographic map is … metres.

A 6
B 24,4
C 24,5
D 4

1.8 The land-use at **1** on the orthophoto map is ...

A industries.
B cultivation.
C recreation.
D forestry.

1.9 The fluvial landform at **L** in block **B4** on the topographic map is a … base level of erosion.

A temporary
B permanent
C ultimate
D lowest

1.10 The human-made feature that has influenced the shape of the settlement from **M** in block **E3** to **N** in block **D1** on the topographic map is a …

A route.
B mountain.
C railway.
D river.

1.11 Pongola can be classified as a … settlement according to its dominant urban function.

A gap
B specialised
C central place
D gateway

1.12 The dominant street plan (pattern) of the Ncotshane residential area at **O** on the topographic map is …

A irregular.
B radial.
C linear.
D grid.

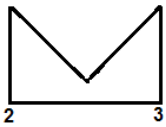
Copyright reserved
Downloaded from eduresourceza.com

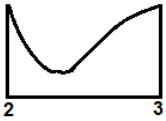
Downloaded from eduresourceza.com

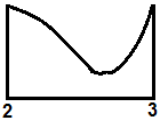
1.13 The underlying rock structure of the drainage pattern encircled by **P** on the topographic map is/are …

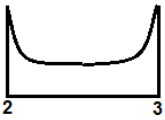
A alternate layers of hard rock and soft rock.
B uniform in resistance to erosion.
C igneous rocks with joints.
D folded mountains.

1.14 Which diagram below would represent the shape of the rough cross-profile of the meander from **2** to **3** on the orthophoto map?

A


B


C


D


1.15 The landform at **4** on the orthophoto map is a …

A butte.
B conical hill.
C mesa.
D plateau.

(15 x 1) **[15]**

eduresourceza.com

Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624

Downloaded from eduresourceza.com

QUESTION 2: MAP CALCULATIONS AND TECHNIQUES

2.1 Refer to the orthophoto map.

2.1.1 Calculate, in m², the average area of the Pongola aerodrome demarcated by **9** on the orthophoto map. Show ALL calculations. Marks will be awarded for calculations. Clearly indicate the unit of measurement in your final answer.

Formula: **Area = length (L) × breadth (B)**

_____

_____

_____

_____

_____

(5 x 1) (5)

2.1.2 Why does the size of the Pongola aerodrome appear different on the topographic map in comparison to the orthophoto map?

_____

_____

(1 x 1) (1)

2.2 Refer to the information on the topographic map.

2.2.1 Calculate the magnetic declination for 2019 using the information on the topographic map. Show ALL calculations. Marks will be awarded for calculations. Clearly indicate the direction in relation to true north in your final answer.

Difference in years: _____

Mean annual change: _____

Total change: _____

_____

Magnetic declination for 2019: _____

_____

(5 x 1) (5)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

2.2.2 Determine the magnetic bearing for 2019 from trigonometrical station 89 in block **C7** to trigonometrical station 83 in block **B9**.

Formula: **Magnetic bearing = True bearing + Magnetic declination**

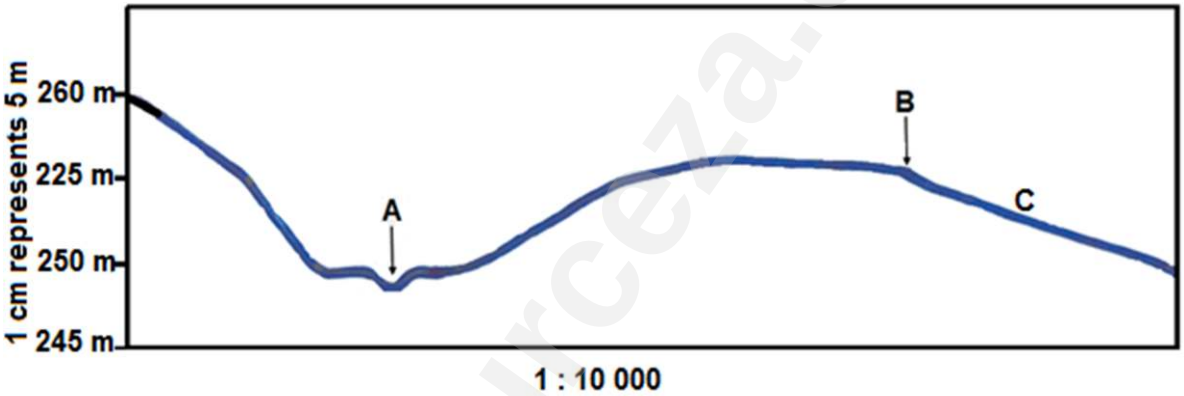
_____

_____

_____

(2 x 1) (2)

2.3 Below is a cross-section drawn from **7** to **8** on the orthophoto map.



2.3.1 Use the orthophoto map to identify feature **A** and feature **B** on the cross-section.

A: _____

B: _____

(2 x 1) (2)

2.3.2 Refer to intervisibility.

(a) Is there intervisibility between **A** and **B**?

_____

(1 x 1) (1)

(b) Give TWO reasons for your answer.

_____

_____

(2 x 1) (2)

Copyright reserved Downloaded from eduresourceza.com Please turn over

Downloaded from eduresourceza.com

2.3.3 The horizontal scale of the cross-section is 1 **:** 10 000.

(a) Convert the vertical scale of the cross-section to a ratio scale.

_____

_____

(1 x 1) (1)

(b) Which gradient, 1 **:** 23 or 1 **:** 66, is likely to match slope **C**?

_____

(1 x 1) (1)

[20]

eduresourceza.com

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

QUESTION 3: APPLICATION AND INTERPRETATION

3.1 Refer to the Phongola River on the topographic map.

3.1.1 What type of river is the Phongola River?

_____

(1 x 1) (1)

3.1.2 Will an oxbow lake be more likely to form first at meander loop **R** or meander loop **S**? Give a reason for your answer.

R or S: _____

Reason: _____

_____

_____

(1 + 2) (3)

3.2 Refer to the settlement at **10** on the orthophoto map.

3.2.1 Name the settlement pattern at **10**.

_____

(1 x 1) (1)

3.2.2 State ONE physical (natural) factor that would have determined the type of settlement pattern identified in QUESTION 3.2.1.

_____

(1 x 1) (1)

3.2.3 State TWO economic advantages of the type of settlement pattern identified in QUESTION 3.2.1.

_____

_____

_____

(2 x 1) (2)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

3.3 Refer to the aerodrome in block **D7** on the topographic map and **9** on the orthophoto map.

3.3.1 In which land-use zone is the aerodrome situated?

_____

(1 x 1) (1)

3.3.2 Why is this land-use zone a suitable location for the aerodrome?

_____

_____

_____

_____

(2 x 2) (4)

3.4 Refer to the agricultural activities in the mapped area.

3.4.1 Is sugar cane farming, as shown on the map, an example of large- or small-scale farming?

_____

(1 x 1) (1)

3.4.2 Discuss how the irrigation network in the eastern part of the mapped area supports the growing of sugar cane.

_____

_____

_____

_____

(2 x 2) (4)

3.4.3 Refer to the Pongola sugar mill in block **F10** on the topographical map.

(a) Is the sugar mill a raw material or market-orientated industry?

_____

(1 x 1) (1)

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

_____

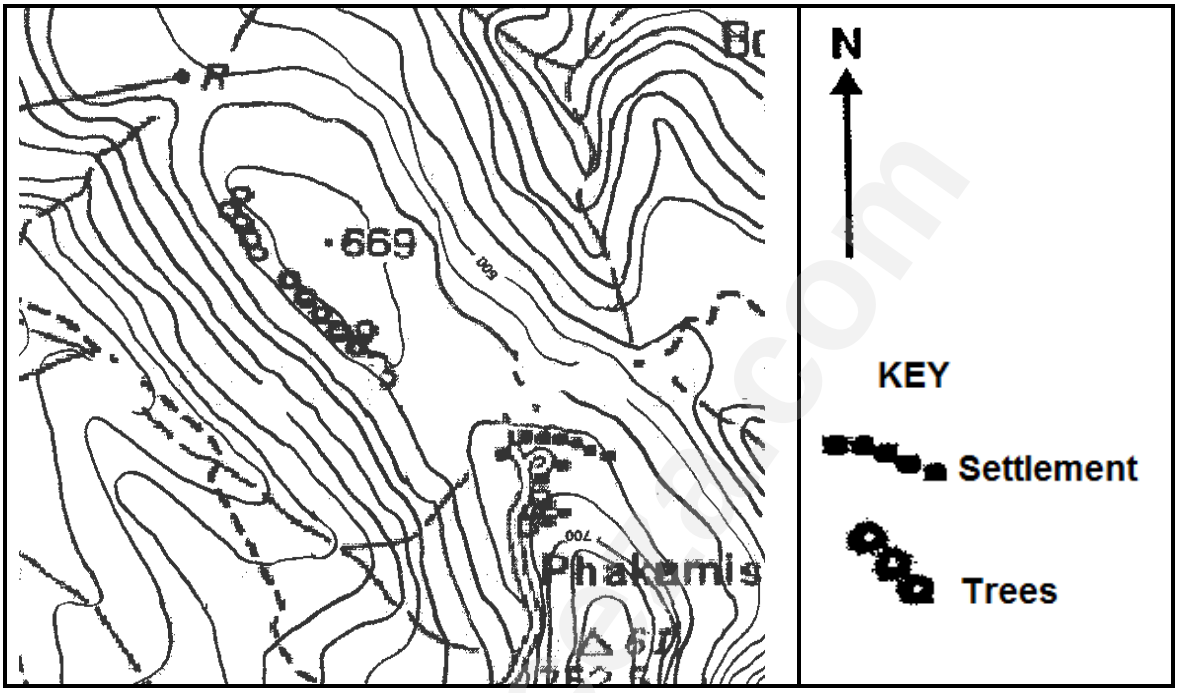
_____

(1 x 2) (2)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

3.5 Refer to the settlement, Phakamisa (enlarged below), situated in the valley in block **J4** on the topographical map.



3.5.1 In which direction does the settlement of Phakamisa face?

_____

(1 x 1) (1)

3.5.2 Explain the climatological advantage of the location of the settlement of Phakamisa.

_____

_____

(1 x 2) (2)

3.5.3 Explain why the impact of katabatic winds will be minimal (low) on the settlement of Phakamisa.

_____

_____

_____

_____

(1 x 2) (2)

[25]

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

QUESTION 4: GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

4.1 Refer to the topographic map.

4.1.1 Is the topographic map an example of raster or vector data?

_____

(1 x 1) (1)

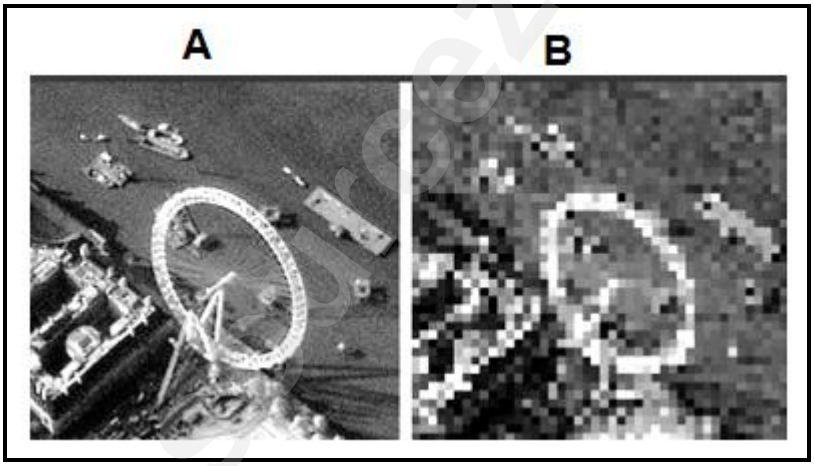
4.1.2 What is the difference between *raster data* and *vector data*?

_____

_____

(1 x 2) (2)

4.2 Image **A** and image **B** were captured by a remote sensing device.



4.2.1 What is *remote sensing*?

_____

(1 x 1) (1)

4.2.2 Name ONE factor in the remote sensing process that will affect the resolution of an image.

_____

_____

_____

(1 x 1) (1)

4.2.3 Why does image **A** have a higher resolution than image **B**?

_____

_____

(1 x 2) (2)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

4.3 Refer to buffering in block **H8** on the topographic map.

4.3.1 What is *buffering*?

_____

(1 x 1) (1)

4.3.2 Why would the lack of buffering be considered poor river management in block **H8**?

_____

_____

_____

_____

(1 x 2) (2)

4.4 Refer to data integration in block **H10** on the topographic map.

4.4.1 What is *data integration*?

_____

_____

(1 x 1) (1)

4.4.2 A farmer in block **H10** wants to extend the size of his farm to block **I10**. Discuss TWO physical (natural) layers that the farmer would have to integrate in order to make a decision.

_____

_____

_____

_____

(2 x 2) (4)
[15]

TOTAL: 75

eduresourceza.com

Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624

Downloaded from eduresourceza.com

ROUGH WORK AND CALCULATIONS
(NOTE: Do NOT detach this page from the question paper.)

eduresourceza.com

Copyright reserved
Downloaded from eduresourceza.com

organized by_Abutimalesela 0798975624
Downloaded from eduresourceza.com

basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

GEOGRAPHY P2

NOVEMBER 2019

MARKING GUIDELINE

MARKS: 75

This marking guideline consists of 15 pages

Copyright reserved
Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

RESOURCE MATERIAL

1. An extract from topographic map 2731BC PONGOLA.

2. Orthophoto map 2731 BC 13 PONGOLA.

3. **NOTE:** The resource material must be collected by schools for their own use.

INSTRUCTIONS AND INFORMATION

1. Write your EXAMINATION NUMBER and CENTRE NUMBER in the spaces on the cover page.

2. Answer ALL the questions in the spaces provided in this question paper.

3. You are provided with a 1 **:** 50 000 topographic map (2731BC PONGOLA) and an orthophoto map (2731 BC 13 PONGOLA) of a part of the mapped area.

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

5. You may use the blank page at the end of this question paper for all rough work and calculations. Do NOT detach this page from the question paper.

6. Show ALL calculations and formulae, where applicable. Marks will be allocated for these.

7. Indicate the unit of measurement in the final answer of calculations, e.g. 10 km, 2,1 cm.

8. You may use a non-programmable calculator.

9. You may use a magnifying glass.

10. The area demarcated in BLACK AND RED on the topographic map represents the area covered by the orthophoto map.

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

ENGLISH	**AFRIKAANS**
Aerodrome	Vliegveld
Diggings	Uitgrawings
Canal	Kanaal
Golf Course	Gholfbaan
Hospital	Hospitaal
River	Rivier
Sewerage Works	Rioolwerke
Sugar Mill	Suikermeule
Waterfall	Waterval

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

GENERAL INFORMATION ON PONGOLA

Pongola (also known in isiZulu as uPhongolo) is a small town located in northern KwaZulu-Natal, only 10 km from the Swaziland border. Pongola is surrounded by 50 km² of sugar cane and subtropical fruit plantations. The town thrived as a result of the irrigation (canal) system and a sugar mill. Pongola is situated in a tranquil subtropical environment and normally receives about 519 mm of rain per year, with most rainfall in summer.

[Source: http://en.wikipedia.org/wiki/pongola]

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

QUESTION 1: MULTIPLE-CHOICE QUESTIONS

The questions below are based on the 1 : 50 000 topographic map (2731BC PONGOLA) as well as the orthophoto map of a part of the mapped area. Various options are provided as possible answers to the following questions. Choose the correct answer and write only the letter (A–D) in the block next to each question.

1.1 Pongola is situated in …

A the Eastern Cape.
B the Western Cape.
C Gauteng.
D KwaZulu-Natal.

✓ **D**

1.2 The international boundary north on the topographic map separates South Africa (Pongola) from …

A Lesotho.
B Swaziland.
C Zimbabwe.
D Namibia.

✓ **B**

1.3 The contour interval of the orthophoto map is … metres.

A 2
B 5
C 10
D 20

✓ **B**

1.4 The index sheet south-east on the orthophoto map 2731 BC 13 Pongola is …

A 2731 BC 17.
B 2731 CB 17.
C 2731 DB 16.
D 2731 BC 19.

✓ **D**

1.5 The feature at 27°23'21"S 31°35'55"E on the topographic map is a/an …

A farmstead.
B excavation.
C reservoir.
D dam.

✓ **B**

1.6 The Mzinyane river at **K** flowing in blocks **F3** and **F4** on the topographic map flows in a … direction.

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

✓ **A**

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

1.7 The difference in height between trigonometrical station 89 in block **C7** and trigonometrical station 83 in block **B9** on the topographic map is … metres.

A 6
B 24,4
C 24,5
D 4

✓ **C**

1.8 The land-use at **1** on the orthophoto map is ...

A industries.
B cultivation.
C recreation.
D forestry.

✓ **B**

1.9 The fluvial landform at **L** in block **B4** on the topographic map is a … base level of erosion.

A temporary
B permanent
C ultimate
D lowest

✓ **A**

1.10 The human-made feature that has influenced the shape of the settlement from **M** in block **E3** to **N** in block **D1** on the topographic map is a …

A route.
B mountain.
C railway.
D river.

✓ **A**

1.11 Pongola can be classified as a … settlement according to its dominant urban function.

A gap
B specialized
C central place
D gateway

✓ **C**

1.12 The dominant street plan (pattern) of the Ncotshane residential area at **O** on the topographic map is …

A irregular.
B radial.
C linear.
D grid.

✓ **D**

Downloaded from eduresourceza.com

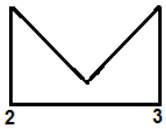
Downloaded from eduresourceza.com

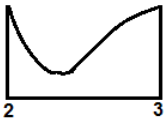
1.13 The underlying rock structure of the drainage pattern encircled by **P** on the topographic map is/are …

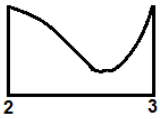
A alternate layers of hard rock and soft rock.
B uniform in resistance to erosion.
C igneous rocks with joints.
D folded mountains.

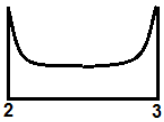
✓ ***B***

1.14 Which diagram below would represent the shape of the rough cross-profile of the meander from **2** to **3** on the orthophoto map?

A


B


C


D


✓ ***C***

1.15 The landform at **4** on the orthophoto map is a …

A butte.
B conical hill.
C mesa.
D plateau.

✓ ***B***

(15 x 1) **[15]**

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

QUESTION 2: MAP CALCULATIONS AND TECHNIQUES

2.1 Refer to the orthophoto map.

2.1.1 Calculate, in m², the average area of the Pongola aerodrome demarcated by **9** on the orthophoto map. Show ALL calculations. Marks will be awarded for calculations. Clearly indicate the unit of measurement in your final answer.

Formula: **Area = length (L) × breadth (B)**

(10,8✓cm x 100) x (0,7✓cm x 100)	*Range [(10,6 – 10,9) x (0,5 – 0,8)]*
1080✓m x 70✓ m	*Range = [Length= (1060 m – 1090m) x Breadth= (50 m – 80 m)]*
75 600 m² ✓	*Range [53 000 – 87 200] m²*

(5 x 1) (5)

2.1.2 Why does the size of the Pongola aerodrome appear different on the topographic map in comparison to the orthophoto map?

The scale (1 : 50 000) on the topographic map is smaller than the scale (1 : 10 000) on the orthophoto map✓
The scale (1 : 10 000) on the orthophoto map is larger than the scale (1 : 50 000) on the topographic map✓
Orthophoto map scale is 5 times larger than the topographic map ✓
The aerodrome is 5 times larger on the orthophoto map✓
The topographic map scale is 5 times smaller than the scale of the orthophoto map ✓
The orthophoto map and the topographic map have different scales ✓
The aerodrome is 5 times smaller on the topographic map✓
[ANY ONE] (1 x 1) (1)

2.2 Refer to the information on the topographic map.

2.2.1 Calculate the magnetic declination for 2019 using the information on the topographic map. Show ALL calculations. Marks will be awarded for calculations. Clearly indicate the direction in relation to true north in your final answer.

Difference in years:17✓

Mean Annual change: 12'✓W

Total change: 17 x 12'
= 204' (3°24')✓

Magnetic declination for 2019: 20°06' + ✓3°24' (204')
= 23°30'W✓ of true north (5 x 1) (5)

Downloaded from eduresourceza.com

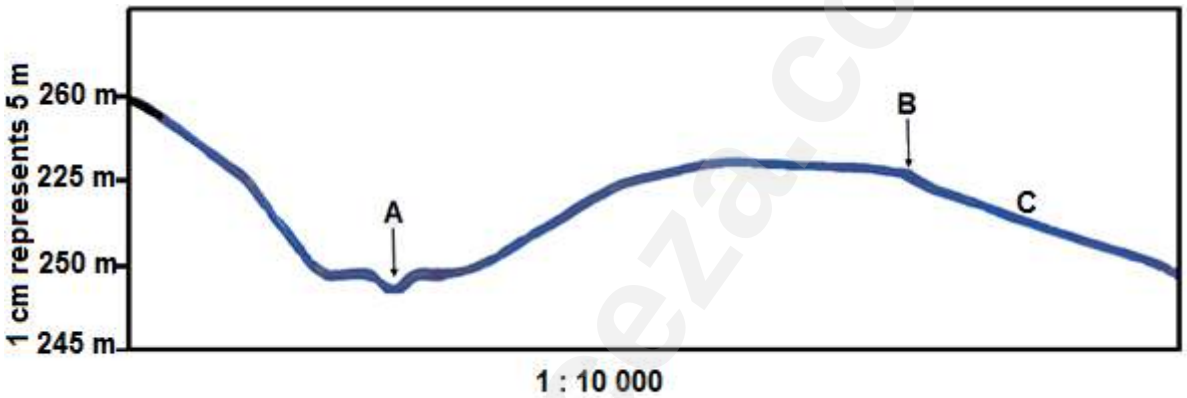
Downloaded from eduresourceza.com

2.2.2 Determine the magnetic bearing for 2019 from trigonometrical station 89 in block **C7** to trigonometrical station 83 in block **B9**.

Formula: **Magnetic bearing = True bearing + Magnetic declination**

MB = 56° ✓ + 23°30' W (range: 55° to 57°)
= 79°30' ✓ (78°30' to 80°30') (2 x 1) (2)

2.3 Below is a cross-section drawn from **7** to **8** on the orthophoto map.



2.3.1 Use the orthophoto map to identify feature **A** and feature **B** on the cross-section.

A: river/*perennial river/river valley/river bank/(braided) stream* ✓

B: *reservoir(wall)/perennial water (accept dam)/road* ✓ (2 x 1) (2)

2.3.2 Refer to intervisibility.

(a) Is there intervisibility between **A** and **B**?

No ✓ (1 x 1) (1)

(b) Give TWO reasons for your answer.

The convex slope will prevent intervisibility ✓
There is an obstruction /higher lying area between A and B ✓
A is at the bottom of the valley and B is on a slope facing away from A (to the E/NE) ✓
(ANY TWO) (2 x 1) (2)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

2.3.3 The horizontal scale of the cross-section is 1 **:** 10 000.

(a) Convert the vertical scale of the cross-section into a ratio scale.

1 : 500 ✓ (1 x 1) (1)

(b) Which gradient 1:23 or 1:66 is likely to match slope **C**?

1:66✓
(Accept 1:23) (1 x 1) (1)
[20]

eduresourceza.com

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

QUESTION 3: APPLICATION AND INTERPRETATION

3.1 Refer to the Phongola river on the topographic map.

3.1.1 What type of river is the Phongola river?

Perennial✓ (Accept Permanent) (1 x 1) (1)

3.1.2 Will an oxbow lake be more likely to form first at meander loop **R** or meander loop **S**? Give a reason for your answer.

Link ***R or S***: *S✓* (1 x 1) (1)

Reason: *S has a softer/less resistant rock than R✓✓*
*Neck at **S** more easily eroded than at **R** ✓✓*
*There is more resistant rock at meander loop **R** which will take longer to erode✓✓*
*Neck of meander loop at **R** is wider than meander loop **S**✓✓*
*Land at meander loop **R** is more elevated (hilly), while the land at meander loop **S** is more gentle✓✓*
[ANY ONE] (1 x 2) (2)

3.2 Refer to the settlement at **10** on the orthophoto map.

3.2.1 Name the settlement pattern at **10**.

Dispersed/Isolated ✓ (1 x 1) (1)

3.2.2 State ONE physical (natural) factor that would have determined the type of settlement pattern identified in QUESTION 3.2.1.

Flat land/gentle slope✓
Fertile soil/arable land✓
Rainfall✓
Access to water supply (river)✓
(***ANY ONE***) (1 x 1) (1)

3.2.3 State TWO economic advantages of the type of settlement pattern identified in QUESTION 3.2.1.

Farmer can show initiative/ new farming technology/innovative ✓
Farmer owns the land ✓
Land is not fragmented✓
Farmer is able to mechanise extensively ✓
Farmer does not have to share his profits✓
High productivity/ yield✓
Less maintenance costs✓
Less labour costs ✓
Farmer determines own selling price✓
Farmers makes own decisions✓
(ANY TWO) (2 x 1) (2)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

3.3 Refer to the aerodrome in block **D7** on the topographic map and **9** on the orthophoto map.

3.3.1 In which land-use zone is the aerodrome situated?

Rural-urban fringe✓ (1 x 1) (1)

3.3.2 Why is this land-use zone a suitable location for the aerodrome?

Flat land✓✓
Cheaper land✓✓
Availability of (large) piece of land/open space✓✓
Accessibility (by road from the town)✓✓
Avoid accidents/safety reasons ✓✓
Due to air and noise pollution✓✓
Away from built-up area ✓✓
Light aircrafts could be used to spray insecticides and pesticides over the nearby cultivated lands✓✓
Complies with legislation-✓✓
(ANY TWO) (2 x 2) (4)

3.4 Refer to the agricultural activities in the mapped area.

3.4.1 Is sugar cane farming, as shown on the map, an example of large- or small-scale farming?

Large scale farming✓ (1 x 1) (1)

3.4.2 Discuss how the irrigation network in the eastern part of the mapped area supports the growing of sugar cane.

The irrigation network will increase sugar cane production and therefore increases profits✓✓
The irrigation network is an easy/cheaper way to transport water over considerable distances✓✓
The area only receives 519mm rainfall, therefore, irrigation network is essential to ensure all year productivity✓✓
The irrigation network allows many farmers to access water so that the crops could be grown away from the river✓✓
The irrigation network can control water flow and reduce flooding where sugar cane is grown✓✓
Sugar cane as a crop requires an abundant supply of water which the irrigation network (rivers/dams/reservoirs/furrows/siphon and canals) provide✓✓
The presence of an irrigation network attracts investors to expand the sugar cane farming industry✓✓
(ANY TWO) (2 x 2) (4)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

3.4.3 Refer to the Pongola sugar mill in block **F10** on the topographic map.

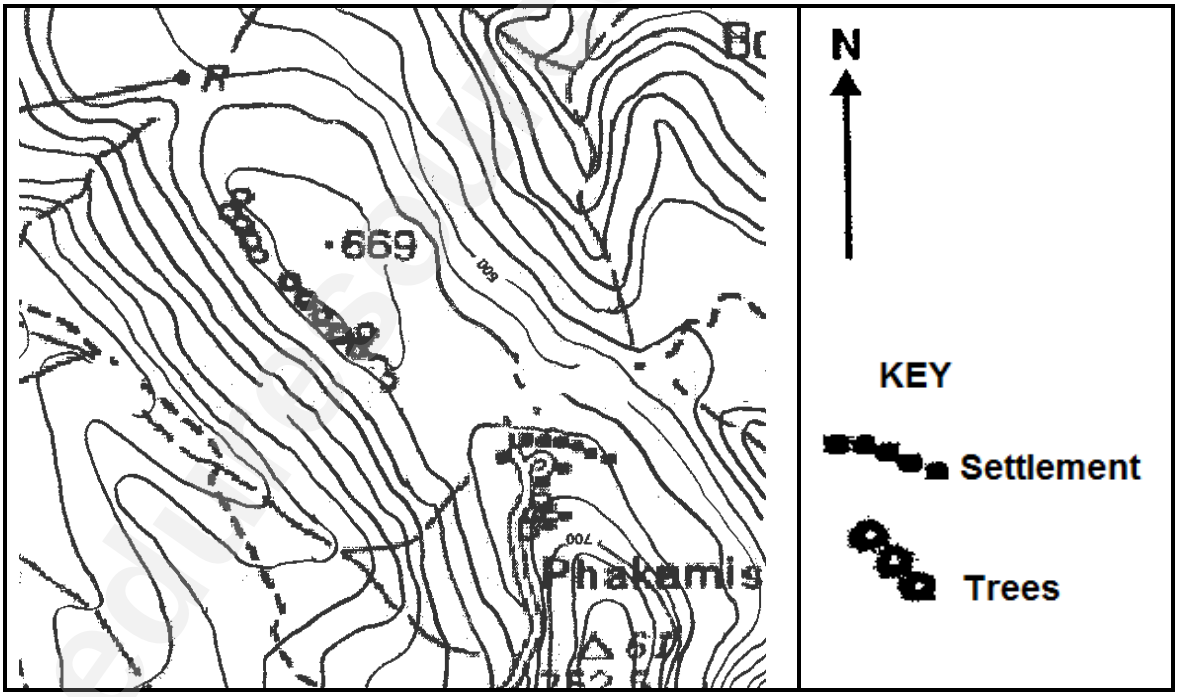
(a) Is the sugar mill a raw material or market-orientated industry?

Raw material orientated✓ (1 x 1) (1)

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

Sugar cane is bulky to transport and that increases the cost✓✓
Sugar mills to process the sugar cane are close to the 'plantation'/raw material✓✓
Sugar cane requires quick processing as it can dry out✓✓
The raw material is perishable✓✓
A processed product is cheaper to transport✓✓
(ANY ONE) (1 x 2) (2)

3.5 Refer to the settlement, Phakamisa (enlarged below), situated in the valley in block **J4** on the topographic map.



3.5.1 In which direction does the settlement of Phakamisa face?

North✓ (1 x 1) (1)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

3.5.2 Explain the climatological advantage of the location of the settlement of Phakamisa?

The warmest part of the slope as it receives direct radiation (aspect) from the sun✓✓
Phakamisa settlement is located in the thermal belt / mid slope/ higher slope therefore it is warmer at night✓✓
Limited effect of katabatic flow due to location✓✓
The settlement is not affected by frost or cold nights because it is located on the mid-slope✓✓
Phakamisa settlement is protected from cross winds at the top of the mountain✓✓
(ANY ONE) (1 x 2) (2)

3.5.3 Explain why the impact of katabatic winds will be minimal (low) on the settlement of Phakamisa.

Due to its location on the mid-slope/ thermal belt/ above the valley floor✓✓
*The cold air drains past Phakamisa into the valley below/*bottom of the slope✓✓
Phakamisa is not affected by frost that forms from katabatic winds as it is not on the valley floor✓✓
(ANY ONE) (1 x 2) (2)
[25]

Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624

Downloaded from eduresourceza.com

QUESTION 4: GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

4.1 Refer to the topographic map.

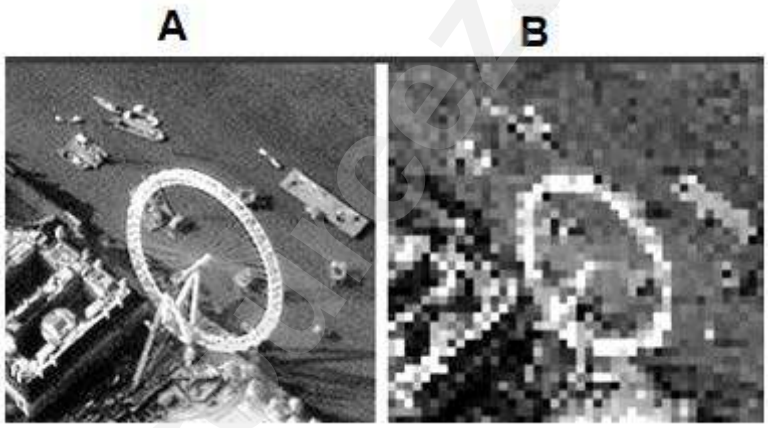
4.1.1 Is the topographic map an example of raster or vector data?

Vector ✓ (1 x 1) (1)

4.1.2 What is the difference between *raster data* and *vector data*?

Raster data is represented by pixels/ cells/blocks/grids/ images/columns whereas Vector is data represented as points/lines/polygons ✓✓
[CONCEPT] (1 x 2) (2)

4.2 Image **A** and image **B** were captured by a remote sensing device.



4.2.1 What is *remote sensing*?

Obtaining information about the earth from a distance/ without touching or without physical contact ✓
[CONCEPT] (1 x 1) (1)

4.2.2 Name ONE factor in the remote sensing process that will affect the resolution of an image.

Weather conditions (accept examples) ✓
Focussing ✓
Number/size of pixels ✓
Shadows ✓
Equipment (accept examples) ✓
Air pollution ✓
Distance ✓
Angle at which image is captured ✓
Scale ✓
(ANY ONE) (1 x 1) (1)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

4.2.3 Why does image **A** have a higher resolution than image **B**?

More/smaller pixels/grid cells in image A✓✓
Less/larger pixels/grid cells in image B✓✓
[ANY ONE] (1 x 2) (2)

4.3 Refer to buffering in block **H8** on the topographic map.

4.3.1 What is *buffering*?

The demarcation of an area around/along a spatial feature✓
[CONCEPT] (1 x 1) (1)

4.3.2 Why would the lack of buffering be considered poor river management in block **H8**?

Fertiliser or pesticides (pollution) from farming could enter the river✓✓
Could disrupt aquatic ecosystems✓✓
River could lose water due to excessive irrigation✓✓
Biodiversity could be threatened in the river✓✓
Flooding may result✓✓
Soil erosion could silt up rivers✓✓
Possible human influence from nearby settlements (litter)✓✓
Road construction could have polluted the water✓✓
The effect of buildings/development too close to the river✓✓
River is not protected✓✓
[ANY ONE] (1 x 2) (2)

4.4 Refer to data integration in block **H10** on the topographic map.

4.4.1 What is *data integration*?

Taking data from different sources and combining it✓
(CONCEPT) (1 x 1) (1)

4.4.2 A farmer in block **H10** wants to extend the size of his farm to block **I10**. Discuss TWO physical (natural) layers that the farmer would have to integrate in order to make a decision.

Drainage /hydrology to ensure a sufficient water supply✓✓
Topography/relief to assess the gradient of the slope✓✓
Geological/Soil to determine type of soil/level of fertility✓✓
Natural vegetation to determine the availability of grazing✓✓
(**ANY TWO**) (2 x 2) (4)
[15]

TOTAL: 75

Copyright reserved Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624
Downloaded from eduresourceza.com

basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS/
NATIONAL SENIOR CERTIFICATE EXAMINATIONS

GEOGRAPHY P2

2019

MARKS: 75

TIME: 1½ hours

EXAMINATION NUMBER:													
CENTRE NUMBER:													

	M	In	SM	In	DM	In	CM	In	IM	In	MC	EA	EX	RM	In
Q1															
Q2															
Q3															
Q4															
TOT															

This question paper consists of 13 pages and 1 page for rough work and calculations.

Copyright reserved
Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624

Downloaded from eduresourceza.com

RESOURCE MATERIAL

1. An extract from topographic map 2926BB THABA NCHU.

2. Orthophoto map 2926 BB 17 THABA NCHU (NORTH)

3. **NOTE:** The resource material must be collected by schools for their own use.

INSTRUCTIONS AND INFORMATION

1. Write your EXAMINATION NUMBER and CENTRE NUMBER in the spaces on the cover page.

2. Answer ALL the questions in the spaces provided in this question paper.

3. You are provided with a 1 **:** 50 000 topographic map 2926BB THABA NCHU and an orthophoto map 2926 BB 17 THABA NCHU (NORTH) of a part of the mapped area.

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

5. You may use the blank page at the end of this question paper for all rough work and calculations. Do NOT detach this page from the question paper.

6. Show ALL calculations and formulae, where applicable. Marks will be allocated for these.

7. Indicate the unit of measurement in the final answer of calculations, e.g. 10 km; 2,1 cm.

8. You may use a non-programmable calculator.

9. You may use a magnifying glass.

10. The area demarcated in RED on the topographic map represents the area covered by the orthophoto map.

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

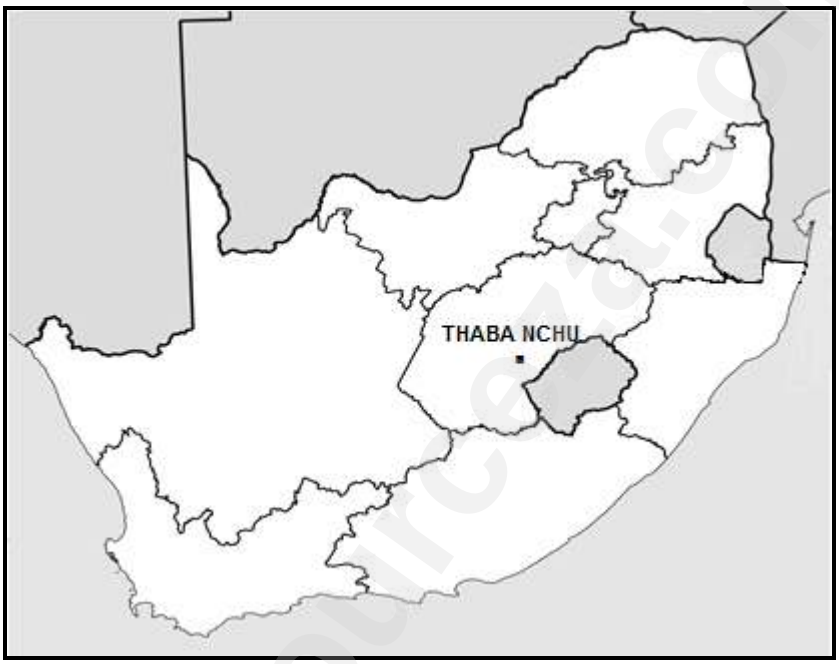
ENGLISH	AFRIKAANS
Diggings	Uitgrawings
Furrow	Voor
Golf Course	Gholfbaan
Landing Strip	Landingstrook
Quarry	Steengroef
Rifle Range	Skietbaan
River	Rivier
Sewerage Works	Rioolwerke
Silos	Graansuiers
Cemetery	Begraafplaas

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

GENERAL INFORMATION ON THABA NCHU

Thaba Nchu is a town in the Free State located 60 km east of Bloemfontein. The town was initially a trading centre, but following the building of a hotel and casino, it has become a major tourist attraction due to its proximity to Bloemfontein. A variety of wildlife and bird species are found here, as well as a hiking trail, a traditional Tswana site and amenities (facilities) for various activities and adventures in the vicinity (surrounding area).



[Source: http://en.wikipedia.org/wiki/thaba nchu]

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

QUESTION 1: MULTIPLE-CHOICE QUESTIONS

The questions below are based on the 1 **:** 50 000 topographic map (2926BB THABA NCHU) as well as the orthophoto map of a part of the mapped area. Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A–D) in the block next to each question.

1.1 Thaba Nchu is situated in …

A Limpopo.
B Mpumalanga.
C the Free State.
D Gauteng.

1.2 The map code/index of the area south-west of Thaba Nchu is …

A 2926DC.
B 2926BC.
C 2926CC.
D 2926AC.

1.3 The contour interval of the orthophoto map is … metres.

A 5
B 20
C 1 000
D 10 000

1.4 The safest direction for aeroplanes to take off using the landing strip at **R** in block **G4** and block **H4**, is in a/an … direction.

A easterly
B northerly
C southerly
D westerly

1.5 The stream order of the river at **J** in block **I8** on the topographic map is …

A 1
B 2
C 3
D 4

1.6 The feature at 29°07'24"S 26°48'24"E/29°07,4'S 29°48,4'E is ...

A non-perennial water.
B a row of trees.
C cultivated land.
D a farm boundary.

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

1.7 The true bearing of spot height 1523 in block **C7** from trigonometrical station 47 in block **B8** on the topographic map is …

A 146°
B 34°
C 220°
D 214°

1.8 The settlement pattern at **K** in block **F2** on the topographic map is …

A nucleated.
B dispersed.
C linear.
D rectangular.

1.9 The slope at line **1** on the orthophoto map is …

A gentle.
B steep.
C concave.
D convex.

1.10 The main factor evident on the topographic map that limits expansion of the cultivated land in an easterly direction in block **F2** is …

A a steep gradient.
B a lack of open space.
C extensive erosion.
D a built-up area.

1.11 The major primary activity in the mapped area is …

A crop farming.
B fruit farming.
C mining.
D forestry.

1.12 An advantage of the street pattern at **L** in block **E7** and block **E8** on the topographic map is that ...

A travelling time is lost.
B you cannot get lost easily.
C it has many winding roads.
D you have to travel greater distances.

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

1.13 The natural purifier of water, evident in block **F3** on the topographic map, is …

A a perennial river.
B sewage works.
C a storage dam.
D a marsh and vlei.

1.14 The feature at **4** on the orthophoto map is a/an …

A excavation.
B storage dam.
C woodland.
D quarry.

1.15 The dominant drainage pattern in area **M** on the topographic map …

A centripetal.
B radial.
C dendritic.
D trellis.

(15 x 1) **[15]**

eduresourceza.com

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

QUESTION 2: MAP CALCULATIONS AND TECHNIQUES

2.1 Refer to the orthophoto map.

2.1.1 Calculate, in km², the area of the cemetery at **3** on the orthophoto map. Show ALL calculations. Marks will be awarded for calculations. Clearly indicate the unit of measurement in your final answer.

Formula: **Area = length (L) × breadth (B)**

_____

_____

_____

_____

_____

_____

_____

_____

_____

(5 x 1) (5)

2.1.2 Explain why the cemetery at **3** on the orthophoto map appears larger than the same cemetery indicated at letter **N** in block **F4** on the topographic map.

_____

_____

(1 x 1) (1)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

2.2 Refer to line **O-P** that links trigonometrical station 208 in block **D4** and spot height 1494 in block **D6** on the topographic map.

2.2.1 Calculate the average gradient from trigonometrical station 208 at **O** to spot height 1494 at **P**. Show ALL calculations. Marks will be awarded for calculations. Clearly indicate the unit of measurement in your final answer.

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

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

(5 x 1) (5)

2.2.2 Is the average gradient calculated in QUESTION 2.2.1 steep or gentle?

_____

(1 x 1) (1)

2.2.3 Explain how the average gradient calculated in QUESTION 2.2.1, influenced human activity in the area surrounding line **O-P**.

_____

_____

_____

(1 x 1) (1)

Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624

Downloaded from eduresourceza.com

2.3 Refer to the topographic map.

2.3.1 Calculate the magnetic declination for the current year (2019). Show ALL calculations. Marks will be awarded for calculations. Clearly indicate the unit of measurement in your final answer.

Difference in years: _____

Mean annual change: _____

Total change: _____

Magnetic declination for 2019: _____

_____

_____

(5 x 1) (5)

2.3.2 Explain how a person can use the magnetic declination for 2019 to reach Eden Dam in block **G12** from trigonometrical station 340 in block **F11**.

_____

_____

_____

_____

(2 x 1) (2)
[20]

eduresourceza.com

Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624

Downloaded from eduresourceza.com

QUESTION 3: APPLICATION AND INTERPRETATION

3.1 Does the mapped area receive annual rainfall or seasonal rainfall? Give ONE reason evident on the topographic map.

Answer: _____

Reason: _____

_____

(1 + 1) (2)

3.2 Refer to block **G5** on the topographic map. The built-up nature of the suburb, Ratlou, has resulted in fairly high temperatures.

3.2.1 Identify TWO factors evident in block **G5** that could reduce the temperature in Ratlou.

_____

_____

(2 x 1) (2)

3.2.2 Explain how ONE of these factors mentioned in QUESTION 3.2.1 reduces the temperature in Ratlou.

_____

_____

(1 x 2) (2)

3.3 Refer to blocks **I9**, **I10** and **I11** on the topographic map.

3.3.1 Describe the general topography (slope) of the southern section of blocks **I9**, **I10** and **I11** and support your answer with evidence from the topographic map.

Answer: _____

Evidence: _____

_____

(1 + 2) (3)

Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624

Downloaded from eduresourceza.com

3.3.2 Explain how the general topography (slope) described in QUESTION 3.3.1 influenced the settlement pattern of the area.

_____

_____

_____

_____

(2 x 2) (4)

3.4 Refer to block **H3** on the topographic map.

3.4.1 Identify the main activity that is causing an environmental injustice in block **H3**.

_____

(1 x 2) (2)

3.4.2 Explain how the activity, identified in QUESTION 3.4.1, causes an environmental injustice.

_____

_____

_____

_____

(2 x 2) (4)

3.5 Refer to industrial zone **2** on the orthophoto map.

3.5.1 Does this zone have heavy or light industries? Give a physical factor to support your answer.

Answer: _____

Reason: _____

_____

(1 + 2) (3)

Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624

Downloaded from eduresourceza.com

3.5.2 Is residential area **5**, located close to industrial zone **2**, a low- or high-income residential area?

_____

(1 x 1) (1)

3.5.3 Explain why the residents of residential area **5** prefer to live close to the industrial zone.

_____

_____

(1 x 2) (2)

[25]

QUESTION 4: GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

4.1 Refer to block **C2** on the topographic map.

4.1.1 Vector data is data that consists of points, lines and polygons. Identify the following vector data in block **C2**:

A point feature related to altitude: _____

A line feature that creates accessibility: _____

A polygon feature related to a primary activity: _____

(3 x 1) (3)

4.1.2 Explain how the line feature in QUESTION 4.1.1 advantaged the primary activity, also mentioned in QUESTION 4.1.1.

_____

_____

(1 x 2) (2)

4.2 Refer to area **M** on the topographic map.

4.2.1 Define the term *attribute data.*

_____

_____

(1 x 1) (1)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

4.2.2 The Department of Tourism wants to promote area **M** as a tourist attraction. Discuss TWO attributes that are found in area **M** that they could use to attract tourists.

_____

_____

_____

_____

(2 x 2) (4)

4.3 Refer to area **M** on the topographic map.

4.3.1 Define the term *remote sensing.*

_____

_____

(1 x 1) (1)

4.3.2 Explain how remote sensing could assist in monitoring the environmental impact of tourists on area **M**.

_____

_____

_____

_____

(2 x 2) (4)
[15]

GRAND TOTAL: 75

Copyright reserved Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624

Downloaded from eduresourceza.com

ROUGH WORK AND CALCULATIONS

(NOTE: Do NOT detach this page from the question paper.)

eduresourceza.com

Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624
Downloaded from eduresourceza.com

basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS/ NATIONAL SENIOR CERTIFICATE EXAMINATIONS

GEOGRAPHY P2

2019

MARKING GUIDELINES

MARKS: 75

TIME: 1½ hours

These marking guidelines consist of 13 pages.

Copyright reserved
Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624

Downloaded from eduresourceza.com

RESOURCE MATERIAL

1. An extract from topographic map 2926BB THABA NCHU.

2. Orthophoto map 2926 BB 17 THABA NCHU (NORTH)

3. **NOTE:** The resource material must be collected by schools for their own use.

INSTRUCTIONS AND INFORMATION

1. Write your EXAMINATION NUMBER and CENTRE NUMBER in the spaces on the cover page.

2. Answer ALL the questions in the spaces provided in this question paper.

3. You are provided with a 1 **:** 50 000 topographic map 2926BB THABA NCHU and an orthophoto map 2926 BB 17 THABA NCHU (NORTH) of a part of the mapped area.

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

5. You may use the blank page at the end of this question paper for all rough work and calculations. Do NOT detach this page from the question paper.

6. Show ALL calculations and formulae, where applicable. Marks will be allocated for these.

7. Indicate the unit of measurement in the final answer of calculations for example 10 km, 2,1 cm, etc.

8. You may use a non-programmable calculator.

9. You may use a magnifying glass.

10. The area demarcated in RED on the topographic map represents the area covered by the orthophoto map.

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

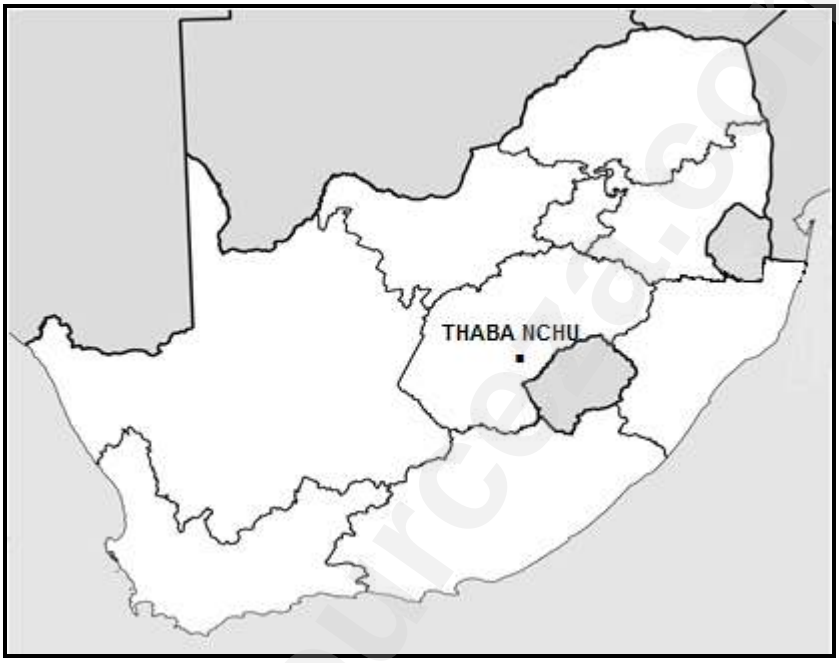
ENGLISH	**AFRIKAANS**
Diggings	Uitgrawings
Furrow	Voor
Golf Course	Gholfbaan
Landing Strip	Landingstrook
Quarry	Steengroef
Rifle Range	Skietbaan
River	Rivier
Sewerage Works	Rioolwerke
Silos	Graansuiers
Cemetery	Begraafplaas

Copyright reserved
Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

GENERAL INFORMATION ON THABA NCHU

Thaba Nchu is a town in the Free State located 60 km east of Bloemfontein. The town was initially a trading centre, but following the building of a hotel and casino, it has become a major tourist attraction due to its proximity to Bloemfontein. A variety of wildlife and bird species are found here, as well as a hiking trail, a traditional Tswana site and amenities (facilities) for various activities and adventures in the vicinity (surrounding area).



[Source: http://en.wikipedia.org/wiki/thaba nchu]

Copyright reserved
Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

QUESTION 1: MULTIPLE-CHOICE QUESTIONS

The questions below are based on the 1 : 50 000 topographic map (2926BB THABA NCHU) as well as the orthophoto map of a part of the mapped area. Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A–D) in the block next to each question.

1.1 Thaba Nchu is situated in …

A Limpopo.
B Mpumalanga.
C the Free State.
D Gauteng.

C

1.2 The map code/index of the area south-west of Thaba Nchu is …

A 2926DC.
B 2926BC.
C 2926CC.
D 2926AC.

B

1.3 The contour interval of the orthophoto map is … metres.

A 5
B 20
C 1 000
D 10 000

A

1.4 The safest direction for aeroplanes to take off using the landing strip at **R** in block **G4** and block **H4**, is in a/an … direction.

A easterly
B northerly
C southerly
D westerly

B/C

1.5 The stream order of the river at **J** in block **I8** on the topographic map is …

A 1
B 2
C 3
D 4

B

1.6 The feature at 29°07'24"S 26°48'24"E/29°07,4'S 29°48,4'E is ...

A non-perennial water.
B a row of trees.
C cultivated land.
D a farm boundary.

C

Copyright reserved Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

1.7 The true bearing of spot height 1523 in block **C7** from trigonometrical station 47 in block **B8** on the topographic map is …

A 146°
B 34°
C 220°
D 214°

D

1.8 The settlement pattern at **K** in block **F2** on the topographic map is …

A nucleated.
B dispersed.
C linear.
D rectangular.

B

1.9 The slope at line **1** on the orthophoto map is …

A gentle.
B steep.
C concave.
D convex.

A

1.10 The main factor evident on the topographic map that limits expansion of the cultivated land in an easterly direction in block **F2** is …

A a steep gradient.
B a lack of open space.
C extensive erosion.
D a built-up area.

C

1.11 The major primary activity in the mapped area is …

A crop farming.
B fruit farming.
C mining.
D forestry.

A

1.12 An advantage of the street pattern at **L** in block **E7** and block **E8** on the topographic map is that ...

A travelling time is lost.
B you cannot get lost easily.
C it has many winding roads.
D you have to travel greater distances.

B

Copyright reserved Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

1.13 The natural purifier of water, evident in block **F3** on the topographic map, is a …

A perennial river.
B sewage works.
C storage dam.
D marsh and vlei.

D

1.14 The feature at **4** on the orthophoto map is a/an …

A excavation.
B storage dam.
C woodland.
D quarry.

B

1.15 The dominant drainage pattern in area **M** on the topographic map …

A centripetal.
B radial.
C dendritic.
D trellis.

B

(15 x 1) **[15]**

eduresourceza.com

Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624

Downloaded from eduresourceza.com

QUESTION 2: MAP CALCULATIONS AND TECHNIQUES

2.1 Refer to the orthophoto map.

2.1.1 Calculate, in km², the area of the cemetery at **3** on the orthophoto map. Show ALL calculations. Marks will be awarded for calculations. Clearly indicate the unit of measurement in your final answer.

Formula: **Area = length (L) × breadth (B)**

3.7 ✓ cm x 0.1 = 0.37 km [3.6cm to 3.8cm] [Range: 0.36 km – 0.38 km]

2.7 ✓ cm x 0.1 = 0.27 km [2.6 cm to 2.8 cm] [Range: 0.26 km – 0.28 km]

0.37 ✓ km x 0.27 ✓ km = 0.10 km² ✓ [Range: 0.09 km² – 0.11 km²]

[Accept any other formulas for calculating the length and breadth] (5 x 1) (5)

2.1.2 Explain why the cemetery at **3** on the orthophoto map appears larger than the same cemetery indicated at letter **N** in block **F4** on the topographic map.

The scale of the orthophoto map is (5 times) larger than the scale of the topographic map ✓
OR
The scale of the topographic map is (5 times) smaller than the scale of the orthophoto map ✓ (1 x 1) (1)

Copyright reserved Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

2.2 Refer to line **O-P**, which links trigonometrical station 208 in block **D4** and spotheight 1494 in block **D6** on the topographic map.

2.2.1 Calculate the average gradient from trigonometrical station 208 at **O** to spot height 1494 at **P**. Show ALL calculations. Marks will be awarded for calculations. Clearly indicate the unit of measurement in your final answer.

Formula: **Average Gradient** $= \dfrac{\textbf{vertical interval (VI)}}{\textbf{horizontal equivalent (HE)}}$

VI = 1552.9 m – 1494 m
= 58.9 ✓ m

HE = 5.5 ✓ cm x 500

[Range for measurement: 5.4 cm – 5.6 cm]

= 2750 ✓ m

OR

VI = 1552.9 m – 1494 m
= 58.9 ✓ m

HE $= \dfrac{5.5 \checkmark \text{ cm} \times 50\,000}{100}$

= 2750 ✓ m

[Range for HE: 2700 m – 2800 m]

$= \dfrac{58.9}{2750}$ ✓ (One mark for correct substitution)

$= \dfrac{1}{46.69}$

= 1 : 46.69 / 1 in 46.69 ✓

$= \dfrac{58.9}{2750}$ ✓

$= \dfrac{1}{46.69}$

= 1 : 46.69 / 1 in 46.69 ✓ (5 x 1) (5)

[Range for final answer: 1 : 45.84 – 1 : 47.54]

2.2.2 Is the average gradient calculated in QUESTION 2.2.1 steep or gentle?

Gentle ✓ (1 x 1) (1)

2.2.3 Explain how the average gradient calculated in QUESTION 2.2.1, influenced human activity in the area surrounding line **O-P**.

The gentle gradient encouraged cultivation/urban development/ excavation in the area (Accept an explained example of urban development indicated on map)✓ (1 x 1) (1)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

2.3 Refer to the topographic map.

2.3.1 Calculate the magnetic declination for the current year (2019). Show ALL calculations. Marks will be awarded for calculations. Clearly indicate the unit of measurement in your final answer.

Difference in years: *2019 – 2011 = 8 ✓ years*

Mean annual change: *4' ✓ W*

Total change: 8 x 4' = 32' ✓ W

Magnetic declination for 2019: *21° 50' W + ✓ 32' W*
22°22' W ✓ (5 x 1) (5)

2.3.2 Explain how a person can use the magnetic declination for 2019 to reach Eden Dam in block **G12** from trigonometrical station 340 in block **F11**.

It allows for taking into account that there is an annual change in the magnetic declination ✓
The person needs to add the new (2019) magnetic declination to the true bearing to get the current magnetic bearing ✓
OR
Current magnetic declination must be added to the true bearing ✓
to determine the current magnetic bearing ✓ (2 x 1) (2)
[20]

Copyright reserved Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624

Downloaded from eduresourceza.com

QUESTION 3: APPLICATION AND INTERPRETATION

3.1 Does the mapped area receive annual rainfall or seasonal rainfall? Give ONE reason evident on the topographic map.

Answer: *Seasonal* ✓

Reason: *Large number of non-perennial rivers/water* ✓
Irrigation is practiced as indicated by dams/furrows/wind pumps ✓
Many reservoirs/storage dams visible on the topographic map ✓
Experiences continental climate ✓
Mapped area is sparsely vegetated ✓
(Any ONE) (1 + 1) (2)

3.2 Refer to block **G5** on the topographic map. The built-up nature of the suburb, Ratlou, has resulted in fairly high temperatures.

3.2.1 Identify TWO factors evident in block **G5** that could reduce the temperature in Ratlou.

The river ✓
The green areas/greenbelts/parks ✓
Recreational areas ✓
(Any ONE) (2 x 1) (2)

3.2.2 Explain how ONE of these factors mentioned in QUESTION 3.2.1 reduces the temperature in Ratlou.

The river:
Absorb a lot of heat due to it being transparent ✓✓
Will have a moderating effect on the temperature ✓✓
Evaporation from the river has a cooling effect ✓✓
(Any ONE)

OR

The green areas/recreational areas/greenbelts/parks:
Absorb a lot of greenhouse gases/carbon dioxide ✓✓
Plants absorb a lot of heat for photosynthesis ✓✓
Evapo-transpiration has a cooling effect ✓✓
Green areas provide shade which has a cooling effect ✓✓
Natural surfaces are cooler than artificial surfaces ✓✓
(Any ONE) (1 x 2) (2)

3.3 Refer to blocks **I9**, **I10** and **I11** on the topographic map.

3.3.1 Describe the general topography (slope) of the southern section of blocks **I9**, **I10** and **I11** and support your answer with evidence from the topographic map.

Answer: *It is steep/hilly/mountainous* ✓

Evidence: *The contour lines are close together* ✓✓ (1 + 2) (3)

Copyright reserved
Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

3.3.2 Explain how the general topography (slope) described in QUESTION 3.3.1 influenced the settlement pattern of the area.

The steep slopes created a dispersed/isolated/scattered pattern ✓✓
It is difficult to build on steep slopes ✓✓
There are few flat areas to build on ✓✓
(Any TWO) (2 x 2) (4)

3.4 Refer to block **H3** on the topographic map.

3.4.1 Identify the main activity that is causing an environmental injustice in block **H3**.

Excavations (Accept diggings) ✓✓ (1 x 2) (2)

3.4.2 Explain how the activity, identified in QUESTION 3.4.1, causes an environmental injustice.

Natural vegetation is removed/deforestation ✓✓
Environmental despoliation/scarring the environment ✓✓
Food chain/food webs are disrupted/destroyed ✓✓
The removal of vegetation causes an increase of soil erosion ✓✓
Dust pollutes the air ✓✓
The habitat of the fauna/animals is destroyed ✓✓
Types of flora/plants specific to the area is destroyed ✓✓
Biodiversity is reduced ✓✓
Groundwater can be polluted ✓✓
Water table may drop ✓✓

(Any TWO) (2 x 2) (4)

3.5 Refer to industrial zone **2** on the orthophoto map.

3.5.1 Does this zone have heavy or light industries? Give a physical factor to support your answer.

Answer: *Heavy ✓*

Reason: *The industries are located on flat land ✓✓*
Large piece of land that is occupied ✓✓
It is near the water supply/rivers/dams ✓✓
(Any ONE) (1 + 2) (3)

3.5.2 Is residential area **5**, located close to industrial zone **2**, a low- or high-income residential area?

Low income residential ✓ (1 x 1) (1)

3.5.3 Explain why the residents of residential area **5** prefer to live close to the industrial zone.

Copyright reserved Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

Close to the heavy industrial area for employment ✓✓
Within walking distance to place of work ✓✓
Close to the heavy industrial area for lower transport costs ✓✓
Land/Houses is/are relatively cheaper next to the industrial area ✓✓ (2)
(Any ONE) (1 x 2)

[25]

QUESTION 4: GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

4.1 Refer to block **C2** on the topographic map.

4.1.1 Vector data is data that consists of points, lines and polygons. Identify the following vector data in block **C2**:

A point feature related to altitude:
Spot height/• 1481 ✓

A line feature that creates accessibility:
(Secondary) road ✓
Hiking trail/Track ✓
(Any ONE)

A polygon feature related to a primary activity:
Excavation ✓
Cultivated land ✓
Woodlands ✓
Small dam ✓
(Any ONE) (3 x 1)
(3)

4.1.2 Explain how the line feature in QUESTION 4.1.1 advantaged the primary activity, also mentioned in QUESTION 4.1.1.

Secondary road: Accessibility to the market/industries/raw materials ✓✓
Hiking trail/Track: For labourers to get to the primary activity ✓✓
(Any ONE) (1 x 2) (2)

4.2 Refer to area **M** on the topographic map.

4.2.1 Define the term *attribute data.*

Describes characteristics of a feature found at a specific place ✓
[Concept] (1 x 1) (1)

Copyright reserved Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

4.2.2 The Department of Tourism wants to promote area **M** as a tourist attraction. Discuss TWO attributes that are found in area **M** that they could use to attract tourists.

The natural environment attracts eco-tourists ✓✓
There is a hiking trail which could attract the adventure tourist/example of adventure tourism e.g. walking along hiking trails ✓✓
Hilly landscapes attract tourist through its aesthetic appeal ✓✓
Paragliding from the top of the butte/conical hill ✓✓
Hilly terrain could attract off-road bikers and 4x4 adventurists ✓✓
A ruin that might have historical value ✓✓ (4)
(Any TWO) (2 x 2)

4.3 Refer to area **M** on the topographic map.

4.3.1 Define the term *remote sensing.*

Getting information about the Earth/object from a distance (without being in contact with the Earth/object) ✓
[Concept] (1 x 1) (1)

4.3.2 Explain how remote sensing could assist in monitoring the environmental impact of tourists on area **M**.

Photographs can be taken over specific periods to analyse the environmental impact over time (accept any explanation of examples of environmental impact) ✓✓
The information could be used to regulate the number of tourists visiting the area to reduce the impact ✓✓
The information could be used to determine the areas most affected/frequented and put in place strategies that would focus on those areas ✓✓
The information could be used to educate tourists about the importance of being environmentally sensitive ✓✓
(Any TWO) (2 x 2) (4)

[15]

GRAND TOTAL: 75

Copyright reserved Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624
Downloaded from eduresourceza.com

basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS

GEOGRAPHY P2

2018

MARKS: 75

TIME: 1½ hours

EXAMINATION NUMBER:													
CENTRE NUMBER:													

	M	In	SM	In	DM	In	CM	In	IM	In	MC	EA	EX	RM	In
Q1															
Q2															
Q3															
Q4															
TOT															

This question paper consists of 14 pages and 1 page for rough work.

Copyright reserved
Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624

Downloaded from eduresourceza.com

RESOURCE MATERIAL

1. An extract from topographic map 3318BC MALMESBURY.

2. Orthophoto map 3318 BC 25 MALMESBURY.

3. **NOTE:** The resource material must be collected by schools for their own use.

INSTRUCTIONS AND INFORMATION

1. Write your EXAMINATION NUMBER and CENTRE NUMBER in the spaces provided on the cover page.

2. Answer ALL the questions in the spaces provided in this question paper.

3. You are provided with a 1 : 50 000 topographical map (3318BC MALMESBURY) and an orthophoto map (3318 BC 25 MALMESBURY) of a part of the mapped area.

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

5. You may use the blank page at the end of this question paper for all rough work and calculations. Do NOT detach this page from the question paper.

6. Show ALL calculations and formulae, where applicable. Marks will be allocated for these.

7. Indicate the correct unit of measurement in the final answer for all calculations. No marks will be awarded for answers with no/incorrect units of measurement.

8. You may use a non-programmable calculator and a magnifying glass.

9. The area demarcated in RED on the topographic map represents the area covered by the orthophoto map.

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

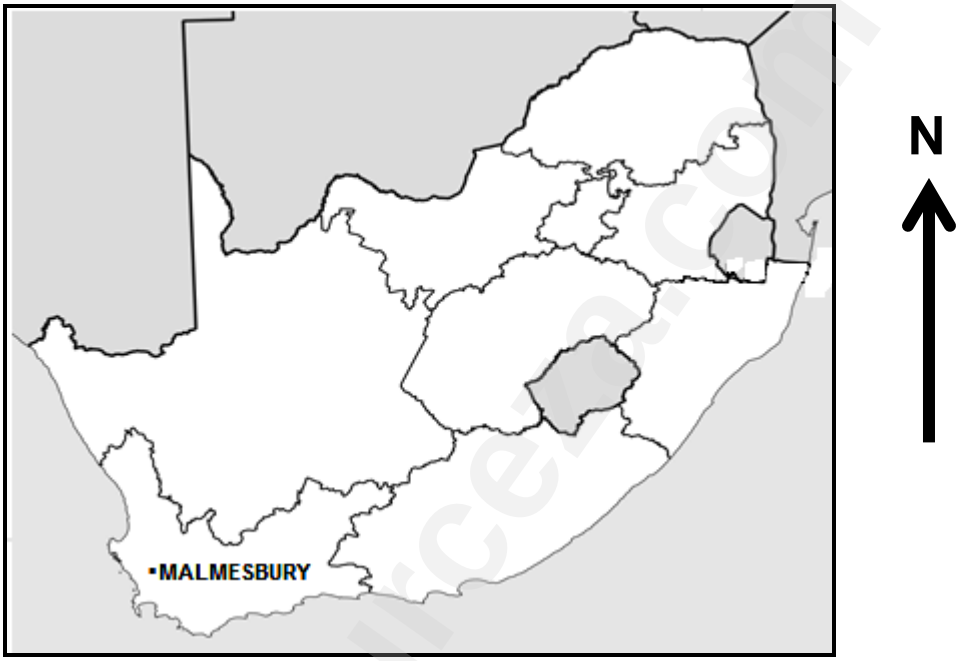
ENGLISH	AFRIKAANS
Canal	Kanaal
Furrow	Voor
Golf Course	Gholfbaan
Prison	Tronk
Refuse Dump	Vullisstortingterrein
River	Rivier
Sewerage Works	Rioolwerke

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

GENERAL INFORMATION ON MALMESBURY

Malmesbury is a town of approximately 36 000 inhabitants, about 65 km north of Cape Town. The town has a moderate climate due to the influence of the Atlantic Ocean. Rainfall is seasonal, with the highest average rainfall being in winter. The area is especially known for its wheat farming and wine production.



[Source: http://en.wikipedia.org/wiki/malmesbury]

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

QUESTION 1: MULTIPLE-CHOICE QUESTIONS

The questions below are based on the 1 : 50 000 topographic map (3318BC MALMESBURY) as well as the orthophoto map of a part of the mapped area. Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A–D) in the block next to each question.

1.1 The city situated approximately 65 km south of Malmesbury is …

A Paarl.
B Cape Town.
C Port Elizabeth.
D Klipheuwel.

1.2 In the map index of 3318BC, the 18 represents …

A 18° south of the equator.
B 18° west of the Greenwich Meridian.
C 18° north of the equator.
D 18° east of the Greenwich Meridian.

1.3 … aerial photographs are used to create the orthophoto map.

A Horizontal
B Satellite
C Vertical
D Oblique

1.4 The contour interval of the orthophoto map is … metres.

A 5
B 10
C 15
D 20

1.5 When you use the main road in block **I11** on the topographic map to travel to Klipheuwel, you will be travelling in a … direction.

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

1.6 The source of water available for farming in block **A1** on the topographic map is a …

A canal.
B windpump.
C river.
D dam.

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

1.7 The grid reference/co-ordinates for spot height 167 in block **C6** on the topographic map is …

A 33°23'30"S 18°38'30"E/33°23,5'S 18°38,5'E.
B 18°38'30"E 33°23'30"S/18°38,5'E 33°23,5'S.
C 18°38'30"S 33°23'30"E/18°38,5'S 33°23,5'E.
D 33°23'30"E 18°38'30"S/33°23,5'S 18°38,5'S.

1.8 The land-use zone in which **5** on the orthophoto map is situated is the …

A commercial zone.
B residential zone.
C rural urban fringe.
D industrial zone.

1.9 The general flow direction of stream **J** in block **D11** on the topographic map is …

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

1.10 The buildings at **1** on the orthophoto map is a …

A shop.
B prison.
C school.
D factory.

1.11 The recreational area **2** on the orthophoto map is a …

A caravan park.
B game reserve.
C golf course.
D botanical gardens.

1.12 The natural feature at line **3** on the orthophoto map is a …

A spur.
B gap.
C saddle.
D valley.

1.13 The street pattern at **K** in block **G12** on the topographic map is …

A planned irregular.
B grid iron.
C unplanned irregular.
D radial.

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

1.14 The settlement demarcated at area **L** in blocks **H8** and **I8** on the topographic map is a …

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

1.15 The main factor evident on the topographic map, that influenced the site of the settlement at **M** in block **C2**, is the …

A slope aspect.
B perennial water.
C fertile soil.
D pasturage.

(15 x 1) **[15]**

eduresourceza.com

Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624

Downloaded from eduresourceza.com

QUESTION 2: MAP CALCULATIONS AND TECHNIQUES

2.1 Products from Malmesbury are transported along the N7 national road to Cape Town.

2.1.1 Determine if vehicles travelling from Malmesbury to **N** in block **I8** on the topographic map, will drive uphill or downhill.

_____

(1 x 1) (1)

2.1.2 Give a reason for your answer to QUESTION 2.1.1.

_____

_____

(1 x 1) (1)

2.1.3 Calculate the distance, in km, from **N** in block **I8** on the topographic map to Cape Town. Show ALL calculations. Marks will be awarded for calculations. Clearly indicate the unit of measurement in your final answer.

Formula: **Actual Distance = Map Distance x Scale**

_____

_____

_____

_____

(4 x 1) (4)

eduresourceza.com

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

2.2 Refer to line **O-P** that connects contour line 120 at **O** and spot height 162 at **P** in blocks **I9** and **I11** on the topographical map.

2.2.1 Draw a freehand cross-profile from **O** to **P**.

(a) Use the block below to draw the cross-profile.

(b) Use an arrow and indicate the accurate position of the other road on the cross-profile.

(2 x 1) (2)

2.2.2 Give ONE reason why there is no intervisibility between **O** and **P**.

_____

_____

(1 x 1) (1)

2.2.3 If you use a vertical scale of 1 cm represents 25 m to draw the cross-profile, determine the vertical exaggeration of the cross-profile. Show ALL calculations. Marks will be awarded for calculations. Clearly indicate the unit of measurement in your answer.

Formula: $\textbf{Vertical exaggeration} = \dfrac{\textbf{vertical scale}}{\textbf{horizontal scale}}$

_____

_____

_____

_____

_____

_____

(4 x 1) (4)

Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624

Downloaded from eduresourceza.com

2.3 Calculate the magnetic bearing on the topographic map, from the reservoir (**Q**) in block **B5** to spot height 317 (**R**) in block **D8** for the current year.

True bearing: _____

Difference in years: _____

Mean annual change: _____

Total change: _____

Magnetic declination for 2018: _____

_____

Magnetic bearing for 2018: _____

_____

_____

(7 x 1) (7)
[20]

Copyright reserved Downloaded from eduresourceza.com Please turn over

organized by Abutimalesela 0798975624

Downloaded from eduresourceza.com

QUESTION 3: APPLICATION AND INTERPRETATION

3.1 Malmesbury receives seasonal rainfall.

3.1.1 Name the season in which Malmesbury receives its highest rainfall.

_____
(1 x 1) (1)

3.1.2 Which weather system is responsible for Malmesbury receiving its highest rainfall in the season named in QUESTION 3.1.1?

_____
(1 x 1) (1)

3.1.3 Give ONE point of evidence from the topographic map which indicates that Malmesbury receives seasonal rainfall.

_____

_____
(1 x 1) (1)

3.2 Refer to Abbotsdale, situated in blocks **I7** and **I8** on the valley floor, on the topographic map.

3.2.1 Is the local wind responsible for the cool conditions experienced in Abbotsdale at night time, an anabatic or katabatic wind?

_____
(1 x 1) (1)

3.2.2 Why does this local wind, named in QUESTION 3.2.1, result in a high concentration of pollution in Abbotsdale at night?

_____
(1 x 2) (2)

3.2.3 With specific reference to the topographic map, what can the Abbotsdale local government (municipality) do to reduce the high concentration of pollution?

_____

_____
(1 x 2) (2)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

3.3 Refer to area **T** on the topographic map. It shows a dendritic drainage pattern.

3.3.1 Give TWO characteristics, visible on the topographic map, which indicates that a dendritic drainage pattern is shown.

_____

_____

(2 x 1) (2)

3.3.2 State a characteristic of the underlying rock structure associated with a dendritic drainage pattern.

_____

_____

(1 x 1) (1)

3.3.3 With reference to area **T**, give the advantage of a dendritic drainage pattern for cultivation.

_____

_____

(1 x 2) (2)

3.4 Malmesbury is a central place town according to its main function.

3.4.1 Give ONE reason visible on the topographic map to support the statement that Malmesbury is a central place.

_____

_____

(1 x 2) (2)

3.4.2 Malmesbury experienced urban expansion, resulting in a change in the town's original shape.

(a) What is Malmesbury's visible shape on the topographic map.

_____

(1 x 1) (1)

(b) Give the main factor responsible for Malmesbury's current shape.

_____

(1 x 1) (1)

Copyright reserved
Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

3.4.3 Which physical (natural) factor may limit the expansion of Malmesbury in a south-easterly direction into block **H12**?

_____

_____

(1 x 2) (2)

3.5 Refer to area **4** on the orthophoto map.

3.5.1 Area **4** is being prepared for the planting of an agricultural product. Name the agricultural product that will be planted in area **4**.

_____

(1 x 1) (1)

3.5.2 State the main secondary activity in Malmesbury associated with the agricultural product named in QUESTION 3.5.1.

_____

(1 x 1) (1)

3.5.3 Suggest how the secondary activity stated in QUESTION 3.5.2 can improve the local economy of Malmesbury.

_____

_____

_____

_____

(2 x 2) (4)
[25]

eduresourceza.com

Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624

Downloaded from eduresourceza.com

QUESTION 4: GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

4.1 Refer to the orthophoto map.

4.1.1 State the difference between *spatial* and *attribute* data.

Spatial data: _____

_____

Attribute data: _____

_____

(2 x 1) (2)

4.1.2 The N7 national road is a tarred road. Would you consider this information to be spatial or attribute data?

_____

(1 x 1) (1)

4.1.3 Give a reason for your answer to QUESTION 4.1.2.

_____

_____

(1 x 2) (2)

4.2 Refer to blocks **C4**, **D3**, **D4** and **D5** on the topographic map showing an example of buffering. (**S** points to areas of buffering.)

4.2.1 What is *buffering*?

_____

_____

(1 x 1) (1)

4.2.2 Explain the positive impact that buffering will have on environmental sustainability in the area.

_____

_____

_____

_____

(2 x 2) (4)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

4.3 Refer to block **C11** on the topographic map.

4.3.1 Define the term *data integration*.

_____

_____

(1 x 1) (1)

4.3.2 Give examples of the following data layers found in block **C11**.

(a) An infrastructure layer: _____

(1 x 1) (1)

(b) A drainage layer: _____

(1 x 1) (1)

4.3.3 State the relationship between agricultural activities and the features of drainage layers in block **C11**.

_____

_____

(1 x 2) (2)

[15]

GRAND TOTAL: 75

Copyright reserved
Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624

Downloaded from eduresourceza.com

ROUGH WORK AND CALCULATIONS
(NOTE: Do NOT detach this page from the question paper.)

eduresourceza.com

Copyright reserved
Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624
Downloaded from eduresourceza.com

basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS

GEOGRAPHY P2

2018

MARKING GUIDELINES

MARKS: 75

These marking guidelines consist of 15 pages

Copyright reserved
Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

RESOURCE MATERIAL

1. An extract from topographic map 3318BC MALMESBURY.

2. Orthophoto map 3318 BC 25 MALMESBURY.

3. **NOTE:** The resource material must be collected by schools for their own use.

INSTRUCTIONS AND INFORMATION

1. Write your EXAMINATION NUMBER and CENTRE NUMBER in the spaces provided on the cover page.

2. Answer ALL the questions in the spaces provided in this question paper.

3. You are provided with a 1 : 50 000 topographical map (3318BC MALMESBURY) and an orthophoto map (3318 BC 25 MALMESBURY) of a part of the mapped area.

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

5. You may use the blank page at the end of this question paper for all rough work and calculations. Do NOT detach this page from the question paper.

6. Show ALL calculations and formulae, where applicable. Marks will be allocated for these.

7. Indicate the correct unit of measurement in the final answer for all calculations. No marks will be awarded for answers with no/incorrect units of measurement.

8. You may use a non-programmable calculator and a magnifying glass.

9. The area demarcated in RED on the topographic map represents the area covered by the orthophoto map.

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

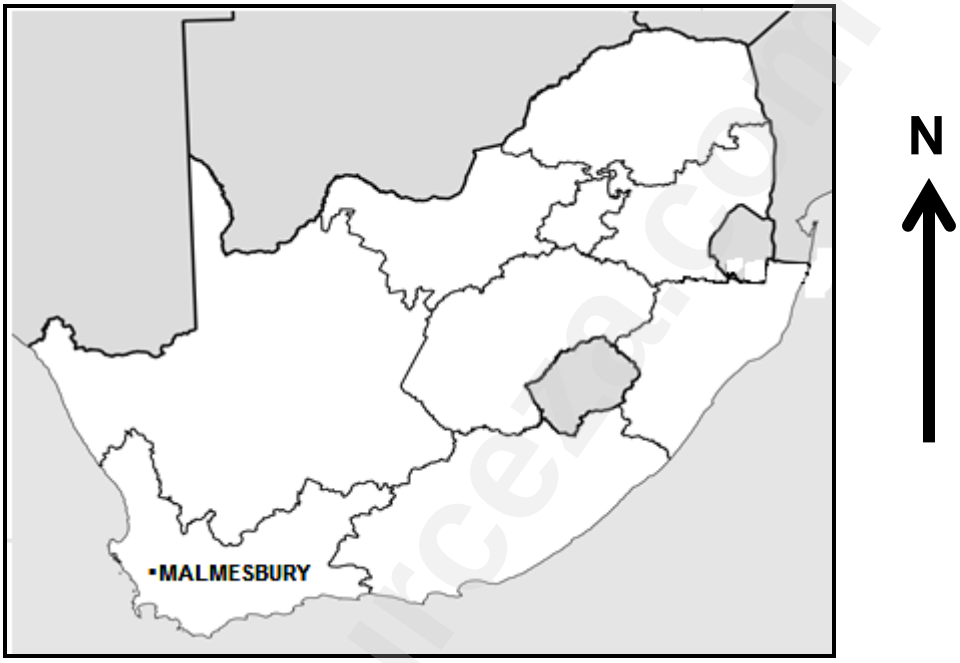
ENGLISH	AFRIKAANS
Canal	Kanaal
Furrow	Voor
Golf Course	Gholfbaan
Prison	Tronk
Refuse Dump	Vullisstortingterrein
River	Rivier
Sewerage Works	Rioolwerke

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

GENERAL INFORMATION ON MALMESBURY

Malmesbury is a town of approximately 36 000 inhabitants, about 65 km north of Cape Town. The town has a moderate climate due to the influence of the Atlantic Ocean. Rainfall is seasonal, with the highest average rainfall being in winter. The area is especially known for its wheat farming and wine production.



[Source: http://en.wikipedia.org/wiki/malmesbury]

Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624

Downloaded from eduresourceza.com

QUESTION 1: MULTIPLE-CHOICE QUESTIONS

The questions below are based on the 1 : 50 000 topographic map (3318BC MALMESBURY) as well as the orthophoto map of a part of the mapped area. Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A–D) in the block next to each question.

1.1 The city situated approximately 65 km south of Malmesbury is …

A the Paarl.
B Cape Town.
C Port Elizabeth.
D Klipheuwel.

B

1.2 In the map index of 3318BC, the 18 represents …

A 18° south of the equator.
B 18° west of the Greenwich Meridian.
C 18° north of the equator.
D 18° east of the Greenwich Meridian.

D

1.3 … aerial photographs are used to create the orthophoto map.

A Horizontal
B Satellite
C Vertical
D Oblique

C

1.4 The contour interval of the orthophoto map is … metres.

A 5
B 10
C 15
D 20

A

1.5 When you use the main road in block **I11** on the topographic map to travel to Klipheuwel, you will be travelling in a … direction.

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

B

1.6 The source of water available for farming in block **A1** on the topographic map is a …

A canal.
B windpump.
C river.
D dam.

B

Downloaded from eduresourceza.com

1.7 The grid reference/co-ordinates for spot height 167 in block **C6** on the topographic map is …

A 33°23'30"S 18°38'30"E/33°23,5'S 18°38,5'E.
B 18°38'30"E 33°23'30"S/18°38,5'E 33°23,5'S.
C 18°38'30"S 33°23'30"E/18°38,5'S 33°23,5'E.
D 33°23'30"E 18°38'30"S/33°23,5'S 18°38,5'S.

A

1.8 The land-use zone in which **5** on the orthophoto map is situated is the …

A commercial zone.
B residential zone.
C rural urban fringe.
D industrial zone.

C

1.9 The general direction of flow of stream **J** in block **D11** on the topographic map is …

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

C

1.10 The buildings at **1** on the orthophoto map is a …

A shop.
B prison.
C school.
D factory.

B

1.11 The recreational area **2** on the orthophoto map is a …

A caravan park.
B game reserve.
C golf course.
D botanical gardens.

A

1.12 The natural feature at line **3** on the orthophoto map is a …

A spur.
B gap.
C saddle.
D valley.

D

1.13 The street pattern at **K** in block **G12** on the topographic map is …

A planned irregular.
B grid iron.
C unplanned irregular.
D radial.

B

Downloaded from eduresourceza.com

1.14 The settlement demarcated at area **L** in blocks **H8** and **I8** on the topographic map is a …

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

D

1.15 The main factor evident on the topographic map, that influenced the site of the settlement at **M** in block **C2**, is the …

A slope aspect.
B perennial water.
C fertile soil.
D pasturage.

A

(15 x 1)

[15]

eduresourceza.com

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

QUESTION 2: MAP CALCULATIONS AND TECHNIQUES

2.1 Products from Malmesbury are transported along the N7 national road to Cape Town.

2.1.1 Determine if vehicles travelling from Malmesbury to **N** in block **I8** on the topographic map, will drive uphill or downhill.

Downhill ✓ (1 x 1) (1)

LINK 2.1.2 Give a reason for your answer to QUESTION 2.1.1.

*The height of bench marks (132.3 to 113.3) is decreasing from Malmesbury to **N*** ✓
*Contour lines are decreasing in height towards **N*** ✓
[Any ONE] (1 x 1) (1)

2.1.3 Calculate the distance, in km, from **N** in block **I8** on the topographic map to Cape Town. Show ALL calculations. Marks will be awarded for calculations. Clearly indicate the unit of measurement in your final answer.

Formula: **Actual Distance = Map Distance x Scale**

3.1 cm ✓ *[Range: 3.0 cm – 3.2 cm]*
3.1 cm x 0.5 ✓
= 1.55 (km) ✓ *[Range: 1.5 km – 1.6 km]*

3.1cm ✓
$\frac{3.1 \text{ cm x } 50\,000}{100\,000}$ ✓

OR $\frac{15.5}{10}$

1.55 (km) ✓

Distance to Cape Town = 1.55 + 52 km = 53.55 km ✓
[Range: 53.5 km – 53.6km] (4 x 1) (4)

Downloaded from eduresourceza.com

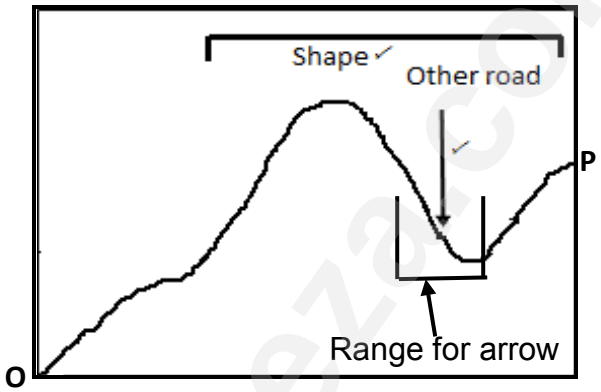
Downloaded from eduresourceza.com

2.2 Refer to line **O-P** that connects contour line 120 at **O** and spot height 162 at **P** in blocks **I9** and **I11** on the topographical map.

Draw a freehand cross-profile from **O** to **P**.

(a) Use the block below to draw the cross-profile.

(b) Use an arrow to indicate the accurate position of the other road on the cross profile.



(2 x 1) (2)

2.2.2 Give ONE reason why there is no intervisibility between **O** and **P**.

*There is an obstruction between **O** and **P*** ✓
*There is a high lying area/hill between **O** and **P*** ✓
[Any ONE] (1 x 1) (1)

2.2.3 If you use a vertical scale of 1 cm represents 25 m to draw the cross-profile, determine the vertical exaggeration of the cross-profile. Show ALL calculations. Marks will be awarded for calculations. Clearly indicate the unit of measurement in your answer.

Formula: $\textbf{Vertical exaggeration} = \dfrac{\textbf{vertical scale}}{\textbf{horizontal scale}}$

$\dfrac{\frac{1}{2\,500}}{\frac{1}{50\,000}}$ ✓ ✓ **OR** *1 : 2 500* ✓ *1 : 50 000* ✓

$\dfrac{1}{2\,500} \times \dfrac{50\,000}{1}$ ✓

[$\dfrac{1}{2\,500} \times \dfrac{50\,000}{1}$ ✓ *[Give mark if substitution is not shown in first step]*]

20 times ✓ *20 times* ✓ (4 x 1) (4)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

2.3 Calculate the magnetic bearing on the topographic map, from the reservoir (**Q**) in block **B5** to spot height 317 (**R**) in block **D8** for the current year.

True bearing: *128º ✓ (Range: 127º - 129º)*

Difference in years: *2018 – 2002 = 16 ✓years*

Mean annual change: *6'✓W*

Total change: *16 x 6 = 1º36' (96')✓W*

Magnetic declination for 2018: 23º21' +✓*1º36' = 24º57'W ✓*

Magnetic bearing for 2018: 128º + *24º57' = 152º57'W ✓*
(Range: 151º57'W - 153 º57'W) (7 x 1) (7)
[20]

eduresourceza.com

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

QUESTION 3: APPLICATION AND INTERPRETATION

3.1 Malmesbury receives seasonal rainfall.

3.1.1 Name the season in which Malmesbury receives its highest rainfall.

Winter ✓ (1 x 1) (1)

3.1.2 Which weather system is responsible for Malmesbury receiving its highest rainfall in the season named in QUESTION 3.1.1.

Mid-latitude cyclone/Extra tropical cyclone/
Frontal depression/Temperate cyclone ✓
(Cold front) ✓
[Any ONE] (1 x 1) (1)

3.1.3 Give ONE point of evidence from the topographic map which indicates that Malmesbury receives seasonal rainfall.

There are many non-perennial rivers/water ✓
There are many dams ✓
Many windpumps/reservoirs ✓
There are canals/furrows ✓
The index to sheet/map index indicates that Malmesbury is in the Western Cape ✓
It experiences a Mediterranean climate ✓
[Any ONE] (1 x 1) (1)

3.2 Refer to Abbotsdale, situated in blocks **I7** and **I8** on the valley floor, on the topographic map.

3.2.1 Is the local wind responsible for the cool conditions experienced in Abbotsdale at night time, an anabatic or katabatic wind?

Katabatic ✓ (1 x 1) (1)

3.2.2 Why does this local wind, named in QUESTION 3.2.1, result in a high concentration of pollution in Abbotsdale at night?

There is more subsiding air during the night which pushes the inversion layer/thermal belt/pollution dome lower ✓✓
A lower inversion layer/thermal belt/pollution dome will result in a high pollution concentration ✓✓
[Any ONE] (1 x 2) (2)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

3.2.3 With specific reference to the topographic map, what can the Abbotsdale local government (municipality) do to reduce the high concentration of pollution?

They could plant more vegetation/trees in the area/roof gardens/green parks/green belts (increase afforestation) ✓✓
Do not remove existing vegetation/trees (decrease deforestation) ✓✓
Relocate the refuse dump further away from Abbotsdale ✓✓
Recycling of waste ✓✓
Reduce waste production ✓✓
Promote the use of eco-friendly products ✓✓
Educate the community about the importance of reducing the pollution concentration (candidates can give examples) ✓✓
Reduce night time activities such as burning, industrial, etc. ✓✓
[Any ONE] (1 x 2) (2)

3.3 Refer to area **T** on the topographic map. It shows a dendritic drainage pattern.

3.3.1 Give TWO characteristics, visible on the topographic map, which indicates that a dendritic drainage pattern is shown.

It resembles branches of a tree ✓
The tributaries meet the main stream at acute angles/angles less than 90º ✓ (2 x 1) (2)

3.3.2 State a characteristic of the underlying rock structure associated with a dendritic drainage pattern.

Rocks with uniform resistance to erosion ✓
Horizontal rock structure ✓
Massive resistant rocks ✓
[Any ONE] (1 x 1) (1)

3.3.3 With reference to area **T**, give the advantage of a dendritic drainage pattern for cultivation.

River channels are spread out evenly resulting in all parts of the cultivated land receiving water. ✓✓
Water from the tributaries and the river equally available ✓✓
[Any ONE] (1 x 2) (2)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

3.4 Malmesbury is a central place town according to its main function.

3.4.1 Give ONE reason visible on the topographic map to support the statement that Malmesbury is a central place.

Transport networks lead from all directions to Malmesbury making it accessible to the surrounding areas ✓✓
Malmesbury has urban services (candidates may give examples of urban services) ✓✓
Malmesbury is surrounded by farms which require urban services ✓✓

[Any ONE] (1 x 2) (2)

3.4.2 Malmesbury experienced urban expansion, resulting in a change in the towns' original shape.

(a) State the shape of Malmesbury visible on the topographic map.

Stellar/Star shaped ✓ (1 x 1) (1)

(b) Give the main factor responsible for the current shape of Malmesbury?

Transport networks/Roads/Railway lines ✓ (1 x 1) (1)

3.4.3 Which physical (natural) factor may limit the expansion of Malmesbury in a south-easterly direction into block **H12**?

Steep gradient ✓✓
Hilly area ✓✓
[Any ONE] (1 x 2) (2)

3.5 Refer to area **4** on the orthophoto map.

3.5.1 Area **4** is being prepared for the planting of an agricultural product. Name the agricultural product that will be planted in area **4**.

Grapes ✓ (1 x 1) (1)

3.5.2 State the main secondary activity in Malmesbury associated with the agricultural product named in QUESTION 3.5.1.

Wine production ✓
Grape juice production ✓
Raisins processing ✓
Grape seed oil processing ✓
[Any ONE] (1 x 1) (1)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

3.5.3 Suggest how the secondary activity stated in QUESTION 3.5.2 can improve the local economy of Malmesbury.

Malmesbury can have a wine festival ✓✓
Tours can be organised through the vineyards and wineries ✓✓
They could have wine tasting tours ✓✓
Tourists bring money into the town ✓✓
Jobs are created (in manufacturing of grape products/processing) ✓✓
Export of grape products will boost the local economy ✓✓
Improved infrastructure attracts business (can give examples) ✓✓
Multiplier effect will result in more economic development ✓✓
Selling grape products (can give examples) to the locals/tourists ✓✓

[Any TWO] (2 x 2) (4)
[25]

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

QUESTION 4: GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

4.1 Refer to the orthophoto map.

4.1.1 State the difference between *spatial* and *attribute* data.

Spatial Data: *The location (and shape) of a feature* ✓
[Concept]

Attribute Data: *Refers to the description/characteristics (further information) of the location (and shape) of a feature (spatial data)* ✓
[Concept] (2 x 1) (2)

4.1.2 The N7 national road is a tarred road. Would you consider this information to be spatial or attribute data?

Attribute data ✓ (1 x 1) (1)

LINK 4.1.3 Give a reason for your answer to QUESTION 4.1.2

It gives descriptions/characteristics (further information) regarding the type of road ✓✓
It gives the description/characteristic (further information) about the road being tarred ✓✓
[Any ONE] (1 x 2) (2)

4.2 Refer to blocks **C4**, **D3**, **D4** and **D5** on the topographic map showing an example of buffering. (**S** points to areas of buffering.)

4.2.1 What is *buffering*?

It is the demarcation of an area around/along a feature ✓
[Concept] (1 x 1) (1)

4.2.2 Explain the positive impact that buffering will have on environmental sustainability in the area.

By avoiding human activities along the river it will assist in maintaining the biodiversity of the river ✓✓
It will reduce amount of chemicals/fertilizers/pollutants entering into the river maintaining its water quality ✓✓
River banks protected/stabilised preventing flooding ✓✓
Flood prevention will limit soil erosion ✓✓
It will allow the river to maintain its natural course ✓✓
Limit the effect on the natural capacity of the river ✓✓
(Any TWO) (2 x 2) (4)

Downloaded from eduresourceza.com

organized by Abutimalesela 0798975624

Downloaded from eduresourceza.com

4.3 Refer to block **C11** on the topographic map.

4.3.1 Define the term *data integration*.

Taking data from different sources and combining it ✓
[Concept] (1 x 1) (1)

4.3.2 Give examples of the following data layers found in block **C11**.

(a) An infrastructure layer: *Track/Hiking trail* ✓
Dam wall ✓
Power line ✓
Furrow ✓
Farm boundaries ✓
[Any ONE] (1 x 1) (1)

(b) A drainage layer: *(Non-perennial) River* ✓
Dam/perennial water ✓
[Any ONE] (1 x 1) (1)

4.3.3 State the relationship between agricultural activities and the features of drainage layers in block **C11**.

The dams are situated close to the agricultural activities ✓✓
River/dam provides water for irrigation of crops ✓✓
[Any ONE] (1 x 2) (2)

[15]

GRAND TOTAL: 75

Copyright reserved
Downloaded from eduresourceza.com

organized by_Abutimalesela 0798975624
Downloaded from eduresourceza.com

basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

GEOGRAPHY P2

NOVEMBER 2018

MARKS: 75

TIME: 1½ hours

EXAMINATION NUMBER:													
CENTRE NUMBER:													

	M	In	SM	In	DM	In	CM	In	IM	In	MC	EA	EX	RM	In
Q1															
Q2															
Q3															
Q4															
TOT															

This question paper consists of 14 pages and 1 page for rough work and calculations.

Copyright reserved
Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

RESOURCE MATERIAL

1. An extract from topographic map 2930CB PIETERMARITZBURG.

2. Orthophoto map 2930 CB 8 PIETERMARITZBURG.

3. **NOTE:** The resource material must be collected by schools for their own use.

INSTRUCTIONS AND INFORMATION

1. Write your EXAMINATION NUMBER and CENTRE NUMBER in the spaces on the cover page.

2. Answer ALL the questions in the spaces provided in this question paper.

3. You are provided with a 1 : 50 000 topographic map (2930CB PIETERMARITZBURG) and an orthophoto map (2930 CB 8 PIETERMARITZ-BURG) of a part of the mapped area.

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

5. You may use the blank page at the end of this question paper for all rough work and calculations. Do NOT detach this page from the question paper.

6. Show ALL calculations and use the formulae provided, where applicable. Marks will be allocated for these.

7. Indicate the unit of measurement in the final answer of calculations, e.g. 10 km; 2,1 cm.

8. You may use a non-programmable calculator.

9. You may use a magnifying glass.

10. The area demarcated in RED on the topographic map represents the area covered by the orthophoto map.

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

ENGLISH	AFRIKAANS
Aerodrome	Vliegveld
Diggings	Uitgrawings
Canal	Kanaal
Firebreak	Brandgordel
Golf Course	Gholfbaan
Hiking Trail	Staproete
Hospital	Hospitaal
River	Rivier
Sewerage Works	Rioolwerke
Waterworks	Waterwerke

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

GENERAL INFORMATION ON PIETERMARITZBURG

Pietermaritzburg (umGungundlovu) is the capital city of KwaZulu-Natal. This second-largest city in the province was founded in 1838. It is a regionally important industrial hub, well-known for processing aluminium, timber and dairy products. It has an estimated population of around 500 000 (including neighbouring townships). Pietermaritzburg is situated along the N3 national road, the main route between the Pretoria-Witwatersrand-Vereeniging conurbation and the harbour city of Durban, some 90 kilometres from Pietermaritzburg. The Oribi airport is situated just outside Pietermaritzburg and has a regular scheduled service to the OR Tambo International Airport in Johannesburg.

[Source: http://en.wikipedia.org/wiki/pietermaritzburg]

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

QUESTION 1: MULTIPLE-CHOICE QUESTIONS

The questions below are based on the 1 : 50 000 topographic map (2930CB PIETERMARITZBURG) as well as the orthophoto map of a part of the mapped area. Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A–D) in the block next to each question.

1.1 Pietermaritzburg is the capital city of …

A Mpumalanga.
B KwaZulu-Natal.
C Free State.
D Limpopo.

1.2 The harbour closest to Pietermaritzburg is …

A Richards Bay.
B Port Elizabeth.
C Durban.
D Cape Town.

1.3 If you travel along the N3 in a north-westerly direction you will reach the town/city of …

A New Hanover.
B Donnybrook.
C Merrivale.
D Harrismith.

1.4 The true bearing of spot height 1031 (**K**) in block **B6** from trigonometrical station 263 (**J**) in block **D7** on the topographic map is …

A 341°
B 161°
C 140°
D 19°

1.5 The economic activity at **U** in block **A12** is a ... activity.

A primary
B secondary
C tertiary
D quaternary

1.6 The land-use zone at **1** on the orthophoto map is the …

A CBD.
B transition zone.
C green belt.
D rural-urban fringe.

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

1.7 The human-made feature at **2** on the orthophoto map is a …

A veterinary clinic.
B townhouse complex.
C shopping centre.
D office park.

1.8 The slope at line **3** on the orthophoto map is …

A concave.
B convex.
C stepped.
D uniform.

1.9 The main human-made factor that influenced the site of the farmstead at **L** in block **B9** on the topographic map is …

A the other road.
B a market.
C a reservoir.
D flat land.

1.10 The stream/drainage pattern that dominates area **M** in block **B10** and block **B11** on the topographic map is a … pattern.

A centripetal.
B radial.
C rectangular.
D trellis.

1.11 The dominant street pattern in block **G2** on the topographic map is …

A radial.
B unplanned irregular.
C grid iron.
D planned irregular.

1.12 The feature controlling the amount of water flowing through the canal in block **H8** on the topographic map:

A Bridge
B Buildings
C Weir
D Slope

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

1.13 Swartkop in block **F1** on the topographic map is a …

A butte.
B mesa.
C pointed butte.
D conical hill.

1.14 The general direction of flow of the river in the valley represented by the curved line **4** on the orthophoto map:

A North
B West
C East
D South

1.15 The distance between **T** in block **A12** and New Hanover on the topographic map is … kilometres.

A 0,2
B 22
C 20,2
D 2

(15 x 1) **[15]**

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

QUESTION 2: MAP CALCULATIONS AND TECHNIQUES

2.1 A tourist visiting Town Hill in Pietermaritzburg requires specific information regarding its location.

2.1.1 State the topographic map index/code of Pietermaritzburg.

_____
(1 x 1) (1)

2.1.2 Determine the grid reference/co-ordinates of Town Hill at point **N** in block **F7** on the topographic map.

_____
(2 x 1) (2)

2.1.3 The tourist wants to hike the Voortrekker Wagon Hiking Trail in block **F6** using a compass. Calculate the magnetic declination for 2018. Show ALL calculations. Marks will be awarded for calculations. Clearly indicate the unit of measurement in your final answer.

Difference in years: _____

Mean annual change: _____

Total change: _____

Magnetic declination for 2018: _____

_____
(5 x 1) (5)

2.2 Refer to the Voortrekker Wagon Hiking Trail in block **F6** on the topographic map.

2.2.1 State the orthophoto map index/code that a tourist will use when hiking the Voortrekker Wagon Hiking Trail.

_____
(1 x 1) (1)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

2.2.2 Calculate the average gradient between contour line **O** (height 820 m) and the trigonometrical station at **P** on the topographic map. Show ALL calculations. Marks will be awarded for calculations.

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

_____

_____

_____

_____

_____

_____

_____

_____

(5 x 1) (5)

2.2.3 Describe the curved route of the Voortrekker Wagon Hiking Trail from its start at **O** to the trigonometrical station at World's View.

_____

_____

_____

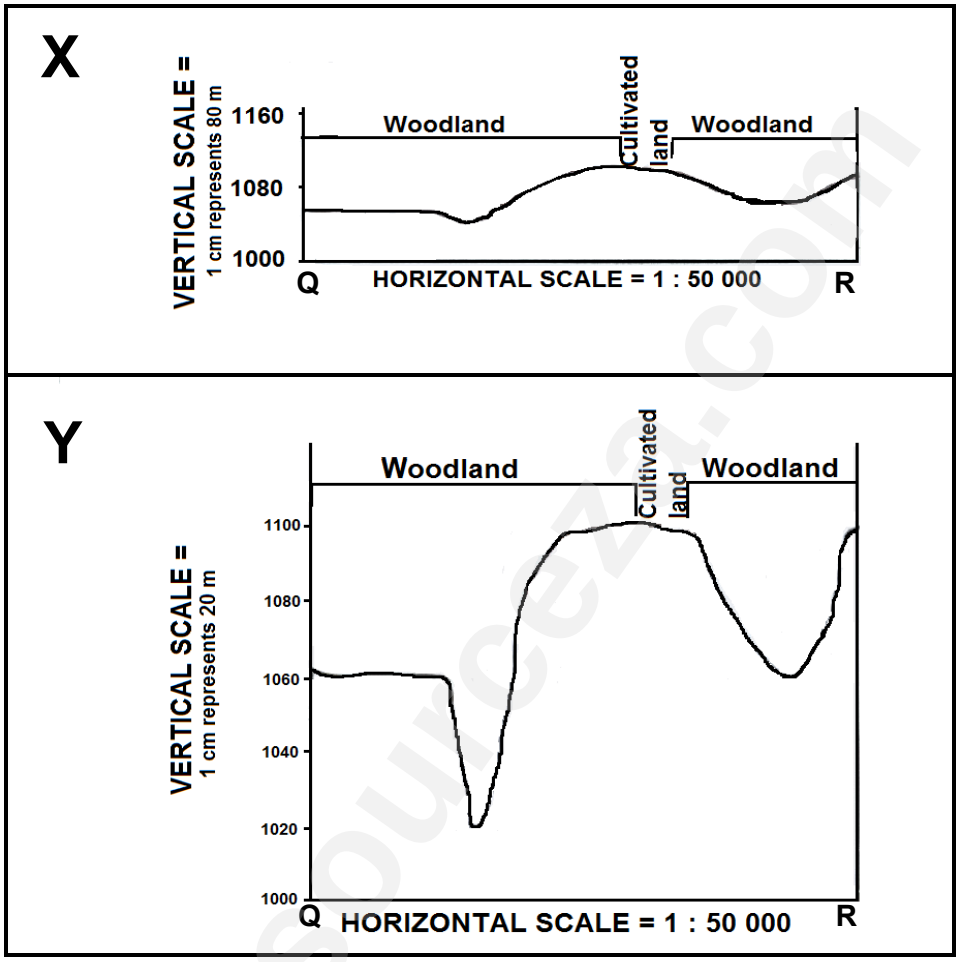
(2 x 1) (2)

eduresourceza.com

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

2.3 Refer to benchmark 1060.9 at **Q** in block **D4** and spot height 1106 at **R** in block **C6** on the topographic map. The cross-sections below represent the line between **Q** and **R**.



2.3.1 Match cross-sections **X** and **Y** with the vertical exaggerations below.

25 times: _____

6,25 times: _____

(2 x 1) (2)

2.3.2 Explain how the vertical exaggeration of cross-sections would make interpretation of the landscape easier.

_____

_____

_____

(2 x 1) (2)

[20]

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

QUESTION 3: APPLICATION AND INTERPRETATION

3.1 The bottom of the valley at area **M** on the topographic map experiences frost in the early hours of the morning during winter.

3.1.1 Name the local/tertiary wind that is responsible for the formation of frost.

_____

(1 x 1) (1)

3.1.2 Explain how the wind named in QUESTION 3.1.1 causes frost.

_____

_____

_____

_____

_____

(2 x 2) (4)

3.2 Refer to slope **5** (low-income residential area) and slope **6** (high-income residential area) on the orthophoto map.

3.2.1 Explain how aspect of slope influenced the site of the high-income residential area at **6**.

_____

_____

_____

(1 x 2) (2)

3.2.2 Give ONE reason, evident on the orthophoto map, that influenced the location of the low-income residential area at slope **5**.

_____

_____

(1 x 2) (2)

3.2.3 Suggest how natural vegetation could have influenced the land values of residential areas **5** or **6**.

_____

_____

_____

(1 x 2) (2)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

3.3 Refer to Mabane River and the Gordon Falls in block **H2** on the topographic map. Directly upstream of the Gordon Falls the river meanders and directly downstream of Gordon Falls, the river follows a straight path. Explain the reasons for the difference in the stream channel patterns of the Mabane River, as stated above.

_____

_____

_____

_____

_____

_____

(2 x 2) (4)

3.4 Is the shopping mall at **7** on the orthophoto map a neighbourhood shopping centre or a regional shopping centre? Give a reason for your answer.

Answer: _____

Reason: _____

_____

(1 + 2) (3)

3.5 Are the industries at Willowton at **8** on the orthophoto map market-orientated or raw material-orientated? Give a reason for your answer.

Answer: _____

Reason: _____

_____

(1 + 2) (3)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

3.6 The quarry at **S** in block **D4** on the topographic map is situated next to the residential area of Leonard. Suggest ONE social justice and ONE social injustice that the people of Leonard could experience due to the quarry.

Social justice: _____

_____

Social injustice: _____

_____

(2 x 2) (4)
[25]

QUESTION 4: GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

4.1 Refer to block **D8** on the topographic map.

4.1.1 Name the type of vector data used in block **D8** to indicate the secondary road.

_____

(1 x 1) (1)

4.1.2 Explain the relevance of using vector data on the topographic map.

_____

_____

_____

(1 x 2) (2)

4.2 Refer to the topographic map and orthophoto map.

4.2.1 Is scale an example of attribute or spatial data?

_____

(1 x 1) (1)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

4.2.2 Explain the relevance of scale when facing a geographical query/problem, e.g. a possible veld fire in block **D8** on the topographic map.

_____

_____

_____

_____

(1 x 2) (2)

4.2.3 How can the scale of the topographic map and orthophoto map be manipulated in order to make data integration of these two maps easier?

_____

_____

_____

_____

(1 x 2) (2)

4.3 Refer to the topographic map and orthophoto map. The statistics below refer to selected suburbs in Pietermaritzburg and the percentage (%) increase in crime levels from 2015 to 2016.

PERCENTAGE (%) INCREASE IN CRIME LEVELS			
TYPE OF CRIME	**SUBURBS**		
	Townhill (**F7**)	Mountain Rise (**F1**)	Plessislaer (**I6**)
Housebreaking	18,6%	11,3%	23,4%
Car hijacking	100%	177,8%	36,4%

[Adapted from SAPS crime statistics 2015–16 by Theuns Kruger, Graphic 24]

4.3.1 Name ONE way in which the data above could have been collected.

_____

(1 x 1) (1)

4.3.2 Is the information in the table above primary data or secondary data?

_____

(1 x 1) (1)

4.3.3 Which type of crime has shown the highest percentage increase in these suburbs?

_____

(1 x 1) (1)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

4.3.4 Explain why it is important for the well-being of the community of Pietermaritzburg to analyse these statistics.

_____

_____

_____

_____

_____

_____

(2 x 2) (4)
[15]

TOTAL: 75

eduresourceza.com

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

ROUGH WORK AND CALCULATIONS
(NOTE: Do NOT detach this page from the question paper.)

eduresourceza.com

Copyright reserved
Downloaded from eduresourceza.com

organized by_Abutimalesela 0798975624
Downloaded from eduresourceza.com

basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

GEOGRAPHY P2

NOVEMBER 2018

MARKING GUIDELINES

MARKS: 75

These marking guidelines consist of 15 pages.

Copyright reserved
Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

RESOURCE MATERIAL

1. An extract from topographic map 2930CB PIETERMARITZBURG.

2. Orthophoto map 2930 CB 8 PIETERMARITZBURG.

3. **NOTE:** The resource material must be collected by schools for their own use.

INSTRUCTIONS AND INFORMATION

1. Write your EXAMINATION NUMBER and CENTRE NUMBER in the spaces on the cover page.

2. Answer ALL the questions in the spaces provided in this question paper.

3. You are provided with a 1 : 50 000 topographic map (2930CB PIETERMARITZBURG) and an orthophoto map (2930 CB 8 PIETERMARITZ-BURG) of a part of the mapped area.

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

5. You may use the blank page at the end of this question paper for all rough work and calculations. Do NOT detach this page from the question paper.

6. Show ALL calculations and use the formulae provided, where applicable. Marks will be allocated for these.

7. Indicate the unit of measurement in the final answer of calculations, e.g. 10 km; 2,1 cm.

8. You may use a non-programmable calculator.

9. You may use a magnifying glass.

10. The area demarcated in RED on the topographic map represents the area covered by the orthophoto map.

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

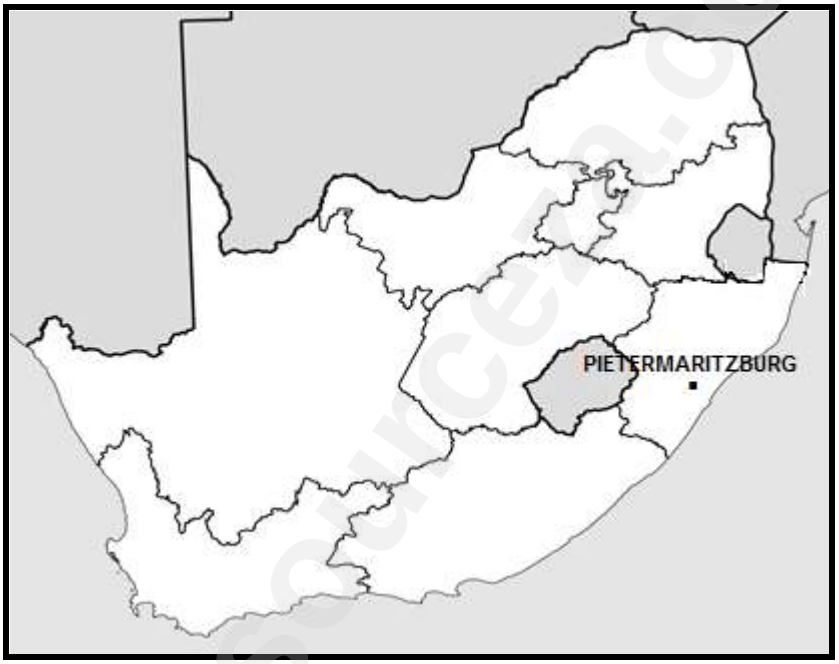
ENGLISH	AFRIKAANS
Aerodrome	Vliegveld
Diggings	Uitgrawings
Canal	Kanaal
Firebreak	Brandgordel
Golf Course	Gholfbaan
Hiking Trail	Staproete
Hospital	Hospitaal
River	Rivier
Sewerage Works	Rioolwerke
Waterworks	Waterwerke

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

GENERAL INFORMATION ON PIETERMARITZBURG

Pietermaritzburg (umGungundlovu) is the capital city of KwaZulu-Natal. This second-largest city in the province was founded in 1838. It is a regionally important industrial hub, well-known for processing aluminium, timber and dairy products. It has an estimated population of around 500 000 (including neighbouring townships). Pietermaritzburg is situated along the N3 national road, the main route between the Pretoria-Witwatersrand-Vereeniging conurbation and the harbour city of Durban, some 90 kilometres from Pietermaritzburg. The Oribi airport is situated just outside Pietermaritzburg and has a regular scheduled service to the OR Tambo International Airport in Johannesburg.



[Source: http://en.wikipedia.org/wiki/pietermaritzburg]

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

QUESTION 1: MULTIPLE-CHOICE QUESTIONS

The questions below are based on the 1 : 50 000 topographic map (2930CB PIETERMARITZBURG) as well as the orthophoto map of a part of the mapped area. Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A–D) in the block next to each question.

1.1 Pietermaritzburg is the capital city of …

A Mpumalanga.
B KwaZulu-Natal.
C Free State.
D Limpopo.

B ✓

1.2 The harbour closest to Pietermaritzburg is …

A Richards Bay.
B Port Elizabeth.
C Durban.
D Cape Town.

C ✓

1.3 If you travel along the N3 in a north-westerly direction you will reach the town/city of …

A New Hanover.
B Donnybrook.
C Merrivale.
D Harrismith.

D ✓

1.4 The true bearing of spot height 1031 (**K**) in block **B6** from trigonometrical station 263 (**J**) in block **D7** on the topographic map is …

A 341°.
B 161°.
C 140°.
D 19°.

A ✓

1.5 The economic activity at **U** in block **A12** is a ... activity.

A primary
B secondary
C tertiary
D quaternary

B ✓

1.6 The land-use zone at **1** on the orthophoto map is the …

A CBD.
B transition zone.
C green belt.
D rural-urban fringe.

C ✓

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

1.7 The human-made feature at **2** on the orthophoto map is a …

A veterinary clinic.
B townhouse complex.
C shopping centre.
D office park.

C ✓

1.8 The slope at line **3** on the orthophoto map is …

A concave.
B convex.
C stepped.
D uniform.

D ✓

1.9 The main human-made factor that influenced the site of the farmstead at **L** in block **B9** on the topographic map is …

A the other road.
B a market.
C a reservoir.
D flat land.

A/C ✓

1.10 The stream/drainage pattern that dominates area **M** in block **B10** and block **B11** on the topographic map is a … pattern.

A centripetal.
B radial.
C rectangular.
D trellis.

D ✓

1.11 The dominant street pattern in block **G2** on the topographic map is …

A radial.
B unplanned irregular.
C grid iron.
D planned irregular.

B/D ✓

1.12 The feature controlling the amount of water flowing through the canal in block **H8** on the topographic map:

A Bridge
B Buildings
C Weir
D Slope

C ✓

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

1.13 Swartkop in block **F1** on the topographic map is a …

A butte.
B mesa.
C pointed butte.
D conical hill.

A ✓

1.14 The general direction of flow of the river in the valley represented by the curved line **4** on the orthophoto map:

A North
B West
C East
D South

B ✓

1.15 The distance between **T** in block **A12** and New Hanover on the topographic map is … kilometres.

A 0,2
B 22
C 20,2
D 2

C ✓

(15 x 1) **[15]**

eduresourceza.com

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

QUESTION 2: MAP CALCULATIONS AND TECHNIQUES

2.1 A tourist visiting Town Hill in Pietermaritzburg requires specific information regarding its location.

2.1.1 State the topographic map index/code of Pietermaritzburg.

2930CB ✓ (1 x 1) (1)

2.1.2 Determine the grid reference/co-ordinates of Town Hill at point **N** in block **F7** on the topographic map.

29°35'06"S ✓ 30°21'17"E ✓/29°35,10'S ✓ 30°21,30'E ✓
(Latitude: 05" - 07") (Latitude: 0,08' - 0,14')
(Longitude: 16" - 18") (Longitude: 0,28' - 0,33') (2 x 1) (2)

2.1.3 The tourist wants to hike the Voortrekker Wagon Hiking Trail in block **F6** using a compass. Calculate the magnetic declination for 2018. Show ALL calculations. Marks will be awarded for calculations. Clearly indicate the unit of measurement in your final answer.

Difference in years: 2018 – 2016 = 2 ✓ years

Mean annual change: 9' ✓ W

Total change: 2 x 9' = 18' ✓ W

Magnetic declination for 2018: 24°45' W + ✓ 18' = 25°03' W ✓ (5 x 1) (5)
[GIVE MARKS FOR CORRECT INFORMATION NEEDED TO DETERMINE FINAL ANSWER, EVEN IF NOT ACCORDING TO THE STIPULATED GUIDELINE]

2.2 Refer to the Voortrekker Wagon Hiking trail in block **F6** on the topographic map.

2.2.1 State the orthophoto map index/code that a tourist will use when hiking the Voortrekker Wagon Hiking Trail.

2930 CB 7 ✓ (1 x 1) (1)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

2.2 Calculate the average gradient between contour line **O** (height 820 m) and the trigonometrical station at **P** on the topographic map. Show ALL calculations. Marks will be awarded for calculations.

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

VI = 1057,9 m – 820 m
= 237,9 m ✓

HE = 3,9 ✓ cm x 500

Range for measurement [3,8 cm – 4 cm]

= 1 950 ✓ m

OR

VI = 1057.9 m – 820 m
= 237,9 m ✓

HE = $\dfrac{3,9 \checkmark \text{ cm} \times 50\,000}{100}$

= 1 950 ✓ m

Range for HE [1 900 m – 2000 m]

$= \dfrac{237,9}{1\,950}$ ✓

$G = \dfrac{237,9}{1\,950}$

$= \dfrac{1}{8,2}$ / *1 : 8,2 / 1 in 8,2* ✓

(One mark for correct substitution)

$= \dfrac{237,9}{1\,950}$ ✓

$G = \dfrac{237,9}{1\,950}$

$= \dfrac{1}{8,2}$ / *1 : 8,2 / 1 in 8,2* ✓

Range for final answer [1 : 7.9 – 1 : 8.41] (5 x 1) (5)

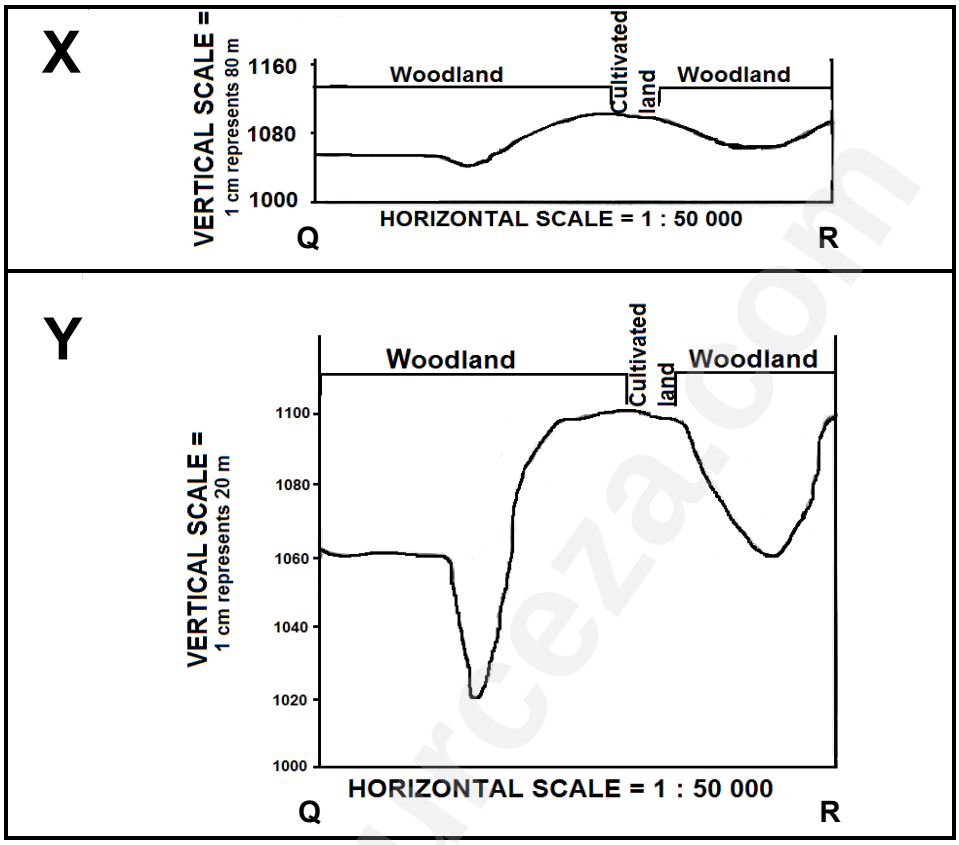
2.2.3 Describe the curved route followed by the Voortrekker Wagon Hiking Trail from its start at **O** to the trigonometrical station at World's View.

The trail follows the winding path of the spur ✓
The trail follows the more gentle route/The trail avoids the very steep slopes ✓
It is an easier route to hike along ✓
It avoids the difficult route of hiking through valleys and over spurs ✓
The trail follows the low lying area ✓
The trail goes uphill and it is easier to follow a winding route ✓
The slope is uneven resulting in a winding route ✓
It goes generally NW/N ✓
It passes through a woodland area ✓
It passes by perennial water/dam ✓
It passes by the river ✓
It passes the reservoir ✓
There are monuments that it passes by ✓
There is a lookout tower towards the end of the trail ✓
[Any TWO] (2 x 1) (2)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

2.3 Refer to benchmark 1060.9 at **Q** in block **D4** and spotheight 1106 at **R** in block **C6** found on the topographic map. The cross-sections below represent the area between **Q** and **R**.



2.3.1 Match cross-sections **X** and **Y** with the vertical exaggerations below.

25 times: *Y* ✓

6,25 times: *X* ✓ (2 x 1) (2)

2.3.2 Explain how the vertical exaggeration of cross-sections would make interpretation of the landscape easier.

The shape of the features on the landscape is more clear when the vertical exaggeration is increased ✓
To represent the topography of the landscape ✓
To emphasize vertical features which are too small to identify relative to the horizontal scale ✓
By increasing the vertical exaggeration the topography and gradient can be seen more clearly ✓
Specific features are more recognizable/clearer ✓
Without vertical exaggeration the cross-section would be flat ✓
A larger exaggeration creates a clearer impression of the landscape ✓
Height differences between features can be clearly identified ✓
Y** is clearer than **X ✓
[Any TWO] (2 x 1) (2)
[20]

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

QUESTION 3: APPLICATION AND INTERPRETATION

3.1 The bottom of the valley at area **M** on the topographic map experiences frost during the early hours of the morning in winter.

3.1.1 Name the local/tertiary wind that is responsible for the formation of frost.

Katabatic/Downslope/Gravitational wind ✓
Mountain wind ✓
[Any ONE] (1 x 1) (1)

3.1.2 Explain how the wind mentioned in QUESTION 3.1.1 causes frost.

The slopes cool down resulting in the air in contact with the slopes cooling down ✓✓
The cooler air becomes heavy and dense ✓✓
Cooler air subsides down the valley slopes ✓✓
Cooler air accumulates on the valley floor/trapped by inversion layer ✓✓
The cold subsiding air cools the temperature to below freezing point ✓✓
[Any TWO] (2 x 2) (4)

3.2 Refer to slope **5** (low-income residential area) and slope **6** (high-income residential area) on the orthophoto map.

3.2.1 Explain how aspect of slope influenced the site of the high-income residential area at **6**.

*Slope **6** is a north/northeast facing slope and experiences the direct rays of the sun (making it warmer)* ✓✓ (1 x 2) (2)

3.2.2 Give ONE reason, evident on the orthophoto map, which influenced the location of the low-income residential area at slope **5**.

Next to the road for transport ✓✓
Access to place of work ✓✓
South facing slope has cheaper land ✓✓
*In comparison to slope **6** slope **5** is more gentle therefore it is cheaper/ easier to build on* ✓✓
Close to railway line ✓✓
[Any ONE] (1 x 2) (2)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

3.2.3 Suggest how natural vegetation could have influenced the land values of residential areas **5** or **6**.

*The vegetation creates aesthetic appeal/beauty/scenery at **6** which increases the land value ✓✓*
OR
*Lack of vegetation at **5** reduces the aesthetic appeal and decreases land values ✓✓*
Vegetation creates cleaner (absorbing carbon) air this area attracts more residents and increases land values ✓✓
Vegetation lowers temperature on this north facing slope which is hot during summer ✓✓
[Any ONE. THE REASONS MUST REFER TO THE RELEVANT ESIDENTIAL AREA SELECTED] (1 x 2) (2)

3.3 Refer to Mabane River and the Gordon Falls in block **H2** on the topographic map. Directly upstream of the Gordon Falls the river meanders and directly downstream of Gordon Falls, the river follows a straight path. Explain the reasons for the difference in the stream channel patterns of the Mabane River, as mentioned above.

Upstream of the Gordon Falls the wider space between the contour lines shows the river flows on level ground/slower velocity (speed) making it meander ✓✓
OR
Upstream of the Gordon Falls the landscape is flatter/slower velocity (speed) which allows the river to meander ✓✓
As the water flows over the waterfall it becomes more energetic, due to a steeper gradient/higher velocity (speed) resulting in a straight course downstream of the Gordon Falls ✓✓
OR
Rejuvenation downstream of the Gordon Falls result in vertical erosion therefore a narrower river valley results in a straightened pattern ✓✓ (2 x 2) (4)
[ANSWER MUST BE QUALIFIED. FULL EXPLANATION]

3.4 Is the shopping mall at **7** on the orthophoto map a neighbourhood shopping centre or a regional shopping centre? Give a reason for your answer.

Answer: *Regional shopping centre ✓*

Reason: *Next to national freeway (N3) for accessibility/Near main road (R56) intersection with the N3 ✓✓*
It is on the outskirts of the city resulting in less congestion and more accessibility ✓✓
The size of the building is large ✓✓
Space available for expansion ✓✓
Close to middle and high income customers ✓✓
There are many roads linking the shopping mall for accessibility/ larger sphere of influence/range ✓✓
Potentially many clients/large threshold population ✓✓
Large parking space ✓✓
[Any ONE] (1 + 2) (3)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

3.5 Are the industries at Willowton at **8** on the orthophoto map market-orientated or raw material-orientated? Give a reason for your answer.

Answer: *Market orientated* ✓

Reason: *It is situated close to market/customers/consumers/suburbs* ✓✓
No evidence of raw material in the vicinity of Willowton ✓✓
The good transport networks around Willowton creates accessibility to the markets ✓✓
The proximity close to the service line ✓✓
[Any ONE] (1 + 2) (3)

3.6 The quarry at **S** in block **D4** on the topographic map is situated next to the residential area of Leonard. Suggest ONE social justice and ONE social injustice that the people of Leonard could experience due to the quarry.

Social justice: *The quarry could create employment for people of Leonard, improving their quality of life* ✓✓
It could create the multiplier effect which will create more employment ✓✓
Create more services (examples) in the area ✓✓
People can afford basic needs due to employment ✓✓
Better infrastructure as new roads will be built ✓✓
[Any ONE]

Social injustice: *Various forms of pollution is generated from quarrying* ✓✓
The health of the people (respiratory illnesses) affected by the dust (air pollution) from the quarry ✓✓
The people's hearing could be affected due to the noise pollution caused by dynamite explosions in the quarry ✓✓
Water table is polluted (water pollution) reducing quality of water for people ✓✓
Land values will decrease due to a decrease in the aesthetic appeal ✓✓
Safety risk for children playing around quarry ✓✓
Vibrations from explosives may damage houses ✓✓
Expensive to repair infrastructure ✓✓
[Any ONE] (2 x 2 (4) **[25]**

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

QUESTION 4: GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

4.1 Refer to block **D8** on the topographic map.

4.1.1 Name the type of vector data used in block **D8** to indicate the secondary road.

Line (1 x 1) (1)

4.1.2 Explain the relevance of using vector data on the topographic map.

Standardising data is easier because you can use a reference/key to refer to features on a map ✓✓
The use of vector data on a topographic map makes map interpretation more user friendly ✓✓
To obtain data/information in one glance (quicker) ✓✓
Topographic maps are electronic versions of reality and symbols, like lines, point and polygons are used to represent real spatial features ✓✓
The use of vector data on a topographical map makes it easy to do data layering ✓✓
Vector data provides true shapes and distances of spatial features ✓✓
[Any ONE] (1 x 2) (2)

4.2 Refer to the topographic map and orthophoto map.

4.2.1 Is scale an example of attribute or spatial data?

Attribute data ✓ (1 x 1) (1)

4.2.2 Explain the relevance of scale when facing a geographical query/problem, e.g. a possible veld fire in block **D8** on the topographic map.

Scale allows you to determine the actual extent of the veld fire ✓✓
Scale allows you to determine the actual area effected by the veld fire ✓✓
Scale will allow rescue workers to determine the actual distance they have to travel in order to assist ✓✓
Determine the number of water tanks to be used ✓✓
Larger scale allows to see more detail ✓✓
To determine the positioning of the fire breaks/buffering ✓✓
Determine the number of fire fighters to be deployed ✓✓
Can determine the distance to the nearest water source/dam✓✓
Can determine the gradient which the rescue workers will face so they can prepare themselves✓✓
Can determine the distance between the fire and building structures ✓✓
Planning of possible evacuation routes ✓✓
[Any ONE] (1 x 2) (2)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

4.2.3 How can the scale of the topographic map and orthophoto map be manipulated in order to make data integration of these two maps easier?

Adjust the scale of the topographic map to make it the same (enlarge the scale) as the orthophoto map ✓✓
Adjust the scale of the orthophoto map to make it the same (reduce the scale) as the topographic map ✓✓
Adjust the scale of the orthophoto map and the topographic map to a common scale ✓✓ (2)
[Any ONE] (1 x 2)

4.3 Refer to the topographic map and orthophoto map. The statistics below refer to selected suburbs in Pietermaritzburg and the percentage (%) increase in crime levels from 2015 to 2016.

PERCENTAGE (%) INCREASE IN CRIME LEVELS			
TYPE OF CRIME	**SUBURBS**		
	Townhill (**F7**)	Mountain Rise (**F1**)	Plessislaer (**I6**)
Housebreaking	18,6%	11,3%	23,4%
Car hijacking	100%	177,8%	36,4%

[Adapted from SAPS crime statistics 2015–16 by Theuns Kruger, Graphic 24]

4.3.1 Name ONE way in which the data above could have been collected.

Information from police station ✓
Surveys/Questionnaires/interviews/fieldwork ✓
National crime stats ✓
Statistics SA/Census ✓
Internet ✓ (1)
[Any ONE] (1 x 1)

4.3.2 Is the information in the table above primary data or secondary data?

Secondary data ✓ (1 x 1) (1)

4.3.3 Which type of crime has shown the highest percentage increase in these suburbs?

Car hijacking ✓ (1 x 1) (1)

Downloaded from eduresourceza.com

Downloaded from eduresourceza.com

4.3.4 Explain why it is important for the well-being of the community of Pietermaritzburg to analyse these statistics.

It can assist with identifying the frequency of crime ✓✓
It can help police with regard to the deployment of officers ✓✓
Identify crime hotspots ✓✓
Implement strategies/possible solutions such as a neighbourhood watch/crime protection forums ✓✓
Deployment of police ✓✓
Develop precautionary measures/security to improve safety (accept examples) ✓✓
It can help insurance companies to correctly validate their crime related insurance policies ✓✓
To help prospective property buyers to identify crime hotspots ✓✓
Important to analyse statistics to put contingency plans in place ✓✓
Identification of patterns and trends to catch perpetrators ✓✓
Crime preventions can focus on the more prevalent (common) type of crimes ✓✓
To determine which time of day crime is the highest and lowest ✓✓
[Any TWO] (2 x 2) (4)
[15]

TOTAL: 75

Copyright reserved
Downloaded from eduresourceza.com