



# education

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Department:  
Education  
**REPUBLIC OF SOUTH AFRICA**

## **GEOGRAPHY**

### **EXAMINATION GUIDELINES**

### **GRADE 12**

### **2009**

**This guideline consists of 17 pages.**

# EXAMINATION GUIDELINES FOR GEOGRAPHY

## GRADE 12 2009

### INTRODUCTION

This is a supporting document to assist teachers in preparing learners for the Grade 12 National Senior Certificate Geography examination of 2009. This guideline document must be read in conjunction with the Subject Assessment Guidelines: Geography – January 2008 and the Learning Programme Guidelines for Geography – January 2008. However, some material from the Subject Assessment Guidelines has been included in this document for easy reference.

### STRUCTURE OF EXAMINATION PAPER

The Geography examination consists of **TWO** papers:

#### Paper 1 (Theory)

1. This is a three-hour paper and will be written in the first session on the day of the Geography examination.
2. The paper is divided into two sections, namely Section A and Section B.
3. Each of these two sections consists of two questions.
4. Three of the four questions must be answered.
5. Each of the four questions will start with two sets of short / objective type questions, that is two sets of  $5 \times 2 = (10)$  questions.
6. Each of the four questions will include two paragraph / short essay type questions for (12) marks, that is two questions of  $6 \times 2 = (12)$ . These questions may not be answered in point form and require analytical thinking and insight.
7. A variety of source materials will be used, e.g. satellite images, synoptic weather charts, graphs, tables, sketch maps, cartoons, photographs and newspaper articles.
8. The following instructions will appear on the front page of the question paper. Learners should be advised of these instructions from the beginning of the year, as many do not adhere to these instructions.

- The question paper consists of four questions.
- Answer ANY THREE questions of 100 marks each.
- All diagrams are included in the annexure.
- Number all your answers in the CENTRE of the line.
- Leave a LINE OPEN between subsections answered.
- Start each question AT THE TOP of a new page.
- Number your answers EXACTLY AS the questions have been numbered.
- Do not write in the margins of your answer book.
- CIRCLE the question numbers that you have answered on the front page of your answer book.
- Write CLEARLY and LEGIBLY.
- Where possible, illustrate your answers with labelled diagrams

**Paper 2 (Mapwork)**

1. This is a one and a half hour paper and will be written in the second session on the day of the Geography examination.
2. This question paper consists of four questions that are compulsory and is comprised of the following:
  - Question 1: Multiple choice – 10x2 = (20)
  - Question 2: Geographical techniques and calculations – 20 single marks
  - Question 3: Application of theory / map and photo interpretation – 20x2 = (40)
  - Question 4: Geographical Information Systems – 10x2 = (20)

**CONTENT TO BE COVERED**

The following content must be covered in preparation for the examination:

**CLIMATE AND WEATHER****Global Air Circulation and Resultant Weather Patterns**

- 1 Changes in energy balance
  - The four pressure belts
  - Identification on world map, basic pressure for, reason for types of pressure at and basic weather at
    - equatorial low pressure
    - subtropical high pressure
    - sub-polar low pressure
    - polar high pressure
  - Relationship between temperature, atmospheric pressure and wind
  - Pressure gradient and geostrophic flow
- 2 Primary air circulation
  - Movement of air between equator and poles
  - Horizontal and vertical air movements
  - Forces affecting horizontal air movements
    - coriolis force
    - pressure gradient force
    - frictional force
  - Tricellular arrangement of circulation
  - Identification, formation and characteristics of
    - Hadley / Tropical cell
    - Mid-latitude / Ferrel cell
    - Polar cell

**3     Secondary air circulation**

Identification, formation and characteristics of

- Tropical easterlies
- Westerlies
- Polar easterlies
- Inter Tropical Convergence Zone (ITCZ)
- Monsoons

**4     Tertiary air circulation**

Formation characteristics of and basic weather associated with

- Land and sea breezes
- Mountain and valley breezes
- Föhn winds

**Mid-latitude Cyclones****5     Mid-latitude cyclones and resultant weather**

- Area of formation
- Characteristics
- Stages in the formation
- Associated weather patterns
  - Cold front conditions
  - Warm front conditions
  - Occluded front conditions
- Cyclone families
- Identification on synoptic weather maps
- Impact on human activities in South Africa
  - Identification of stages of development on synoptic weather maps
  - Interpretation of weather symbols
- Possible pre-cautionary and management strategies

**Tropical Cyclones****6     Tropical cyclones and resultant weather**

- Area of formation
- Factors that give rise to tropical cyclones
- Characteristics
- Stages in the formation
- Associated weather patterns
- Identification on synoptic weather maps
- Impact on human activities
  - Identification of stages of development on synoptic weather maps
  - Interpretation of weather symbols
- Possible pre-cautionary and management strategies

## **Subtropical anticyclones and the resultant weather over South Africa**

### 7 Factors determining the weather of South Africa

- Influence of the oceans on South Africa's weather
- Effect of the interior plateau on South Africa's weather
- Influence of latitudinal position of the sub-continent on South Africa's weather

### 8 Anticyclonic circulation

- Identification of three anticyclones on synoptic charts
  - South Atlantic / St Helena High
  - South Indian / Mauritius High
  - Kalahari / Continental High
- Resultant weather

### 9 Traveling disturbances

- Development of
  - Moisture front and line thunderstorms
  - Coastal low pressure
  - South African berg wind
- Resultant weather
- Identification on synoptic charts

## **Climate at Local Scale / Microclimatology**

### 10 Valley climates

- Slope aspect
- Development of
  - Anabatic winds
  - Katabatic winds
  - Inversions / thermal belt
  - Frost pockets
  - Radiation fog
- Influence on human activities
  - Settlement
  - Farming

### 11 Urban Climates

- Reasons for differences between rural and urban climates
- Development of heat island
- Factors contributing to higher city temperatures
- Reducing the heat island effect
- Existence and effect of pollution dome
- Contribution towards global warming

12 Climate hazards

- Concept of climate hazard
- Basic understanding of
  - Global warming
  - Droughts
  - Floods
  - Storm surges
  - Lightning
  - Hail
  - Tornadoes
- Human vulnerability, response and pre-cautionary measures

13 Climate Change

- Concept of climate change
- Sustainable measures to prevent climate change
- Climatic changes in Africa and the effect on Africans
- Human response to climate change
  - Kyoto Protocol
  - Reducing the effects of climate change in Africa and developing nations

14 Interpretation of synoptic maps

- Use of international symbols
- Identify high and low pressure cells
- Weather station
- Satellite images - reading and interpretation
- Compare satellite images to synoptic charts

**FLUVIAL PROCESSES AND STRUCTURAL LANDFORMS****Fluvial Processes**1 Drainage Basins

- Concepts of
  - Drainage basin
  - Catchment area
  - River system
  - Tributary
  - Confluence
  - Watershed
  - Interfluve
  - River mouth
- Sources of water supply
  - Surface run-off
  - Groundwater
  - Water table

- Types of rivers
  - Permanent
  - Periodic
  - Episodic
  - Exotic
- Factors influencing run-off and infiltration
  - Precipitation
  - Soil moisture
  - Vegetation
  - Slope / gradient
  - Porosity
  - Permeability
- Characteristics of drainage basins
  - Stream order
  - Drainage density
  - Factors influencing drainage density
  - Drainage patterns  
(dendritic, trellis, rectangular, radial, centripetal, deranged, parallel)
- Superimposed and antecedent drainage
  - Development
  - Characteristics
- Stream channel patterns
  - Meandering channel
  - Braided channel
  - Rock controlled channel

## 2 Discharge of a river

- Laminar and turbulent flow
- Characteristics of flow hydrographs
  - Discharge volume
  - Rainfall peak
  - Flood peak
  - Lag time
  - Baseflow
  - Types of flow hydrographs and factors influencing their shapes

## 3 River capture / stream piracy

- Concepts of
  - Abstraction
  - River capture / stream piracy
- Features associated with river capture  
(captor stream, captured stream, misfit stream, elbow of capture, windgap)

## 4 River profiles

- Concepts of
  - Cross / transverse profile
  - Longitudinal profile

- Concepts of
  - Base level of erosion
  - Temporary base level of erosion
  - Permanent base level of erosion
- Distinguish between graded and ungraded streams
- Relationship between longitudinal and cross profiles of the upper, middle and lower courses of a river
- River rejuvenation
  - Reasons for rejuvenation
  - Features of rejuvenation  
(knickpoint, terraces, valley in a valley, incised/entrenched meanders)

## 5 Fluvial landforms

Identification and description of

- Meander
  - Undercut slope
  - Slip off slope
- Oxbow lake
- Sand island
- Braided stream
- Flood plain
- Natural leveé
- Waterfall
- Rapid
- Delta

## 6 Catchment and river management

- Impact of humans on drainage basins / catchment areas
- Importance of managing drainage basins / catchment areas
- Strategies to manage drainage basins / catchment areas

## **Structural Landforms**

### 7 Topography associated with horizontally layered rock

- Concept of horizontal strata
- Characteristics and processes associated with the development of
  - Hilly landscapes
  - Basaltic plateaus
  - Canyon landscapes
  - Karoo landscapes  
(mesa, butte, conical hill)
- Concept of scarp retreat / backwasting
- Utilisation of these landscapes by humans



8 Topography associated with tilted rock

- Concept of tilted strata
- Characteristics and processes associated with the development of
  - Homoclinal ridges
  - Cuestas
  - Hogsbacks
  - Cuesta basins
  - Cuesta domes
- Concepts of
  - Scarp slope
  - Dip slope
- Utilisation of these landscapes by humans

9 Topography associated with massive igneous rock

- Concept of massive igneous rock
- Identification of
  - Batholiths
  - Laccoliths
  - Lopoliths
  - Dykes
  - Sills
- Characteristics and processes associated with the development of
  - Granite domes
  - Tors

10 Slope elements / forms

- Identification of
  - Crest
  - Cliff / scarp slope / free face
  - Talus / debris / scree slope
  - Pediment
- Characteristics of
  - Crest
  - Cliff / scarp slope / free face
  - Talus / debris / scree slope
  - Pediment
- Significance of four slope elements for human activity

11 Mass movements and human response

- Concept of mass movements
- identification and reasons for development of
  - Soil creep
  - Land slides
  - Rock falls
  - Mud flows
- Human response to mass movements
- Preventative measures

## **PEOPLE AND PLACES**

### **Processes and Spatial Patterns**

#### 1 Classification of settlements and factors influencing site and situation

- Concepts of
  - Settlement
  - Site
  - Situation
  
- Classification of settlements according to
  - Size and complexity
  - Pattern
  - Function
  - Urban / rural
- Site and situation
  - Factors influencing site and situation of rural settlements
  - Factors influencing site and situation of urban settlements

### **Rural Settlements**

#### 2 Classification and function

- Factors influencing site and situation
- Classification according to pattern and function
- Classification according to shape
  - Round
  - Linear
  - Cross road
  - T-shape

#### 3 Human-environment interactions

- Concept of rural-urban migration
- Concept of rural depopulation
- Causes of rural depopulation
- Consequences of rural depopulation
- Possible solutions to rural depopulation
- Governance of rural settlements
  - Local authorities
  - Agenda 21

#### 4 Sustainability-related strategies

- Sustainable strategies to manage dwindling rural settlements / communities
- Land reform and land redistribution
- Impact of HIV/Aids on rural settlement patterns
- Impact of wars (refugees / displaced people) on rural settlement patterns

## Urban Settlements

### 5 Classification of urban settlements

- Factors influencing site and situation
- Identification, function and reasons for development of
  - Central places
  - Trade and transport cities
  - Break-of-bulk points
  - Specialized cities
  - Junction towns
  - Gateway / gap towns

### 6 Urban hierarchies

- Concept of central place theory
- Concepts of
  - Central place
  - Threshold population
  - Sphere of influence
  - Range of goods
- Concepts of
  - Low and high order functions / services
  - Low and high order centres
- Real urban hierarchies by R.J. Davies

### 7 Urbanisation

- Reasons for urbanisation
- Concepts of
  - Urbanisation
  - Urban growth
  - Urban expansion
  - Urban sprawl
  - Rate of urbanisation
  - Level of urbanisation

### 8 Structures and patterns of urban settlements

- Urban profile
  - Concept of urban profile
  - Reasons for shape of urban profile
- Identification, advantages and disadvantages of street patterns
  - Grid iron
  - Irregular
  - Planned irregular / free pattern
  - Radial concentric
- Shape of urban settlements

- Identification and characteristics of land-use zones
  - Commercial
  - Residential
  - Industrial
  - Zone of decay / transition zone
  - Greenbelt
  - Rural-urban fringe
- Factors influencing location of land-use zones
  - Accessibility
  - Land values
  - Specialised requirements
  - Compatibility
  - Centripetal forces
  - Centrifugal forces
- Models explaining different land-use zones
  - Burgess / Concentric
  - Hoyt / Sector
  - Harris and Ullman / Multiple nuclei

## 9 Human-environment interactions

- Urban settlement issues / problems
  - Inner city problems
  - Urban blight
  - Congestion
  - Pollution
  - Land use conflict / bylaws
  - Standard of living
  - Political influences
  - Informal settlements
- Governance of urban settlements
  - Changing urban settlements
  - Local authorities
  - Agenda 21

## 10 Sustainability-related strategies

- Sustainable strategies to maintain expanding urban settlements
- Inner city renewal
- Urban planning
- Concepts of
  - New towns
  - Self help cities
- Future urban settlements

## **PEOPLE AND THEIR NEEDS**

### **The Structure of an Economy**

#### 1 Economic activities

- Concepts of
  - Primary activities
  - Secondary activities
  - Tertiary activities
  - Quaternary activities
- Contribution of above to GDP
- Factors influencing economic activities
  - Economic factors
  - Physical factors
  - Social factors
  - Political factors

#### 2 Agriculture as an economic activity

- Agricultural systems in South Africa
- Factors favouring agriculture in South Africa
- Factors hindering agriculture in South Africa
- Role of agriculture in food security
- Risks and vulnerability faced by agricultural sector
- Contribution of agriculture to South Africa's economy

#### 3 Industry as an economic activity

- Perceptions of decision makers on the location of industries
- Types of industries
  - Heavy and light
  - Raw material orientated
  - Market orientated
  - Footloose industries
  - Ubiquitous industries
  - Bridge industries
- Factors favouring industrial development in South Africa
- Factors hindering industrial development in South Africa
- Contribution of industry to South Africa's economy
- Four core industrial areas of South Africa
  - Identification on map  
(PWV, Durban-Pinetown, Port Elizabeth-Uitenhage, Southwestern Cape)
  - Dominant industrial activities
  - Factors favouring development
  - Factors restricting development

- Problems resulting from industrial centralisation
- Industrial Development Zones (IDZ)
  - Key objectives
- Spatial Development Initiatives (SDI)
  - Key objectives

#### 4 Human-environment interactions

- Impact of humans on the location of economic activities
- Response of people to environmental injustices linked to economic activities
- Response of people to social injustices linked to economic activities
- Impact of programmes such as
  - RDP
  - GEAR
  - SDIs
  - IDZs
- Impact of the change of location of economic activities on people

#### 5 Transport and trade

- Concepts of
  - Trade
  - Foreign trade
  - Exports and imports
  - Balance of trade
  - Balance of payment
- South Africa's trade with Africa and the world
- Role of transport networks in trade and economic development

### **The Importance and Challenges of the Informal Sector**

#### 6 Informal sector

- Concepts of
  - Informal sector
  - Formal sector
- Examples of informal trading
- Reasons for existence of informal sector
- Characteristics of the informal sector
- Challenges facing the informal sector
- Importance / role of the informal sector in the economy
- Strengthening the informal sector

## Globalisation and Trade

### 7 Globalisation

- Concept of globalisation
- Characteristics of globalisation
- Influence of globalisation on the economy
  - Advantages
  - Disadvantages
- Multi-national corporations
  - Effect on the economy
  - Advantages and disadvantages for host countries
- Challenges faced by less economically developed countries in a global economy

## Food Security in Southern Africa

### 8 Food security and insecurity

- Concepts of
  - Food security
  - Food insecurity
- Factors contributing to food insecurity in southern Africa
  - Physical environmental factors (droughts, floods, soil infertility)
  - Social, economic and political factors (production costs, cash crops, foreign competition, shortage of arable land, wars and conflict, poor infrastructure, lack of funds for agricultural research)
- Measures to prevent food insecurities
- Role of genetically modified food

## Water as a Critical Resource in South Africa

### 9 Water as a scarce resource

- Reasons for water shortages
  - Natural
  - Human influence
  - Map of rainfall distribution in South Africa
- Availability of water resources in South Africa
  - Important water sources in South Africa
  - Major rivers and dams in South Africa
  - Map showing major rivers and dams
- Distribution and supply of water to South African citizens
  - Role of local authorities in supplying water services
  - Major water transfer schemes (Lesotho Highlands, Tugela-Vaal, Orange-Fish / Gariep, Boland scheme)
- Sustainable use and management of water
  - Water conservation
  - Water management strategies

## **GEOGRAPHIC SKILLS AND TECHNIQUES**

### **1:50 000 Topographic Maps**

#### 1 Mapwork techniques

- Contour lines, contour interval and height
- Conventional signs
- Compass direction
- True / geographic bearing
- Map scale
- Calculating distance in reality - straight line and winding
- Calculating area
- Map reference numbers / map index
- Map coordinates / fixing position
- Alphanumeric reference / grid reference
- Magnetic bearing
- Calculating gradient
- Cross-sections
- Vertical exaggeration
- Intervisibility
- Orientation of orthophoto map to topographic map

#### 2 Application

- Interpretation of 1:50 000 topographic maps
  - Interpreting physical features e.g. relief, drainage, climate and vegetation
  - Interpreting cultural features e.g. settlement, land-use and transport networks
- Application of all aspects of syllabus covered in the theoretical section of Geography

### **Photographs**

#### 3 Photographs used in mapwork

- Types of photographs
- Advantages and disadvantages of different types of photographs
- Orthophoto maps
- Size, shape, tone, texture, shadow and patterns of photographs
- Compare orthophoto maps to topographic maps
- All techniques mentioned under mapwork techniques applicable to orthophoto maps



#### 4 Application

- Interpretation of 1:10 000 orthophoto maps
  - Interpreting physical features e.g. relief, drainage, climate and vegetation
  - Interpreting cultural features e.g. settlement, land-use and transport networks
- Application of all aspects of syllabus covered in the theoretical section of Geography

### **Map Projections**

#### 5 Map Projections

- Types of map projections / concepts
  - Mercator
  - Gauss Conformal
  - Universal Transverse
  - Lambert
- Properties of map projection
  - Scale
  - Size
  - Shape
  - Distance
  - Direction
  - Area

### **Geographical Information Systems**

#### 6 Geographical Information Systems

- Concepts of
  - GIS
  - Remote sensing
  - Resolution
  - Spatial and attribute data
  - Vector and raster data
  - Spatial objects  
(points / nodes, lines, area / polygons, pixels)
- Components of GIS
- Sources of information for GIS
- Concept of layering of information
- Data manipulation and analysis
  - Concept of data manipulation
  - Data integration
  - Buffering
  - Querying
  - Statistical analysis
- Application of GIS by the
  - government
  - private sector