



**KWAZULU-NATAL PROVINCE**

**EDUCATION**  
REPUBLIC OF SOUTH AFRICA



**NATIONAL  
SENIOR CERTIFICATE**

**GRADE 12**



**MARKS: 150**

**TIME: 3 hour**

**This question paper consists of 16 pages.**



**INSTRUCTIONS AND INFORMATION**

1. This question paper consists of TWO SECTIONS:

**SECTION A**

QUESTION : 1. CLIMATE and WEATHER & GEOMORPHOLOGY (60 MARKS)

QUESTION : 2. RURAL AND URBAN SETTLEMENTS (60 MARKS)

**SECTION B**

QUESTION : 3. GEOGRAPHICAL SKILLS AND TECHNIQUES ( 30 MARKS)

2. Answer ALL THREE questions in the **answer book** provided.
3. ALL diagrams are included in the QUESTION PAPER.
4. Leave a line open between subsections of questions answered.
5. Start EACH question at the top of a NEW page.
6. Number your answers correctly according to the numbering system used in this question paper.
7. Do NOT write in the margins of your ANSWER BOOK.
8. Draw fully labelled diagrams when instructed to do so.
9. Answer in FULL SENTENCES, when you have to state, name, identify or list.
10. Units of measurement MUST be indicated in the final answer, e.g. 1 020 hPa, 10km, 4°C, and 50m.
11. You may use a non-programmable calculator
12. You may use a magnifying glass.
13. Write neatly and legibly.

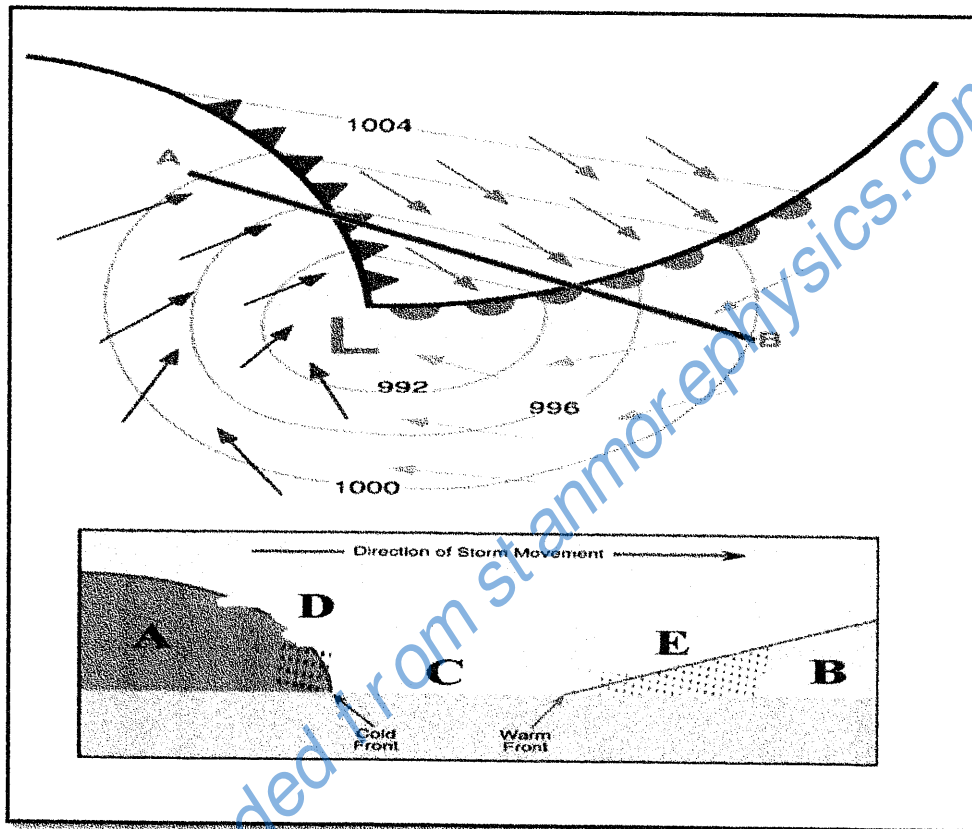
**SPECIFIC INSTRUCTIONS AND INFORMATION FOR SECTION B**

14. A 1 : 50 000 topographic map 2331CC PHALABORWA and a 1 : 10 000 orthophoto map 2331 CC 18 PHALABORWA (NORTH) are provided.
15. The area demarcated in RED/BLACK on the topographic map represents the area covered by the orthophoto map.
16. Show ALL calculations. Marks will be allocated for this.
17. You must hand in the topographic and the orthophoto map to the invigilator at the end of this examination session.

## SECTION A

## QUESTION 1: CLIMATE AND WEATHER

- 1.1 Refer to the diagram of a Mid-Latitude Cyclone. Various options are provided as possible answers to the following questions. Choose the correct option that best matches with the descriptions (1.1.1 – 1.1.7) and write only the letter (A – D) next to the question number (1.1.1 – 1.1.7) in the answer book.



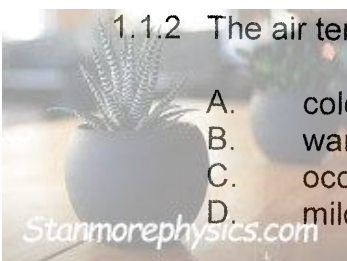
[Source: Adapted from [www.physicalgeography.net](http://www.physicalgeography.net)]

- 1.1.1 This is an example of a mid-latitude cyclone in its ... stage.

- A. Initial
- B. developing
- C. mature
- D. occluded

- 1.1.2 The air temperature at **A** is ...

- A. cold.
- B. warm.
- C. occluded.
- D. mild.



1.1.3 The temperature at **B** is ...

- A. cold.
- B. warm.
- C. occluded.
- D. cool.

1.1.4 **C** is known as the ... sector.

- A. mild
- B. cool
- C. warm
- D. cold



1.1.5 The clouds type at **D** are ...

- A. stratus.
- B. cirrus.
- C. cumulonimbus.
- D. alto stratus.

1.1.6 The clouds type at **E** are ...

- A. cumulus.
- B. cirrus.
- C. cumulonimbus.
- D. nimbostratus.

1.1.7 The wind direction at **C** would be ...

- A. North East.
- B. North West.
- C. South East.
- D. South West.

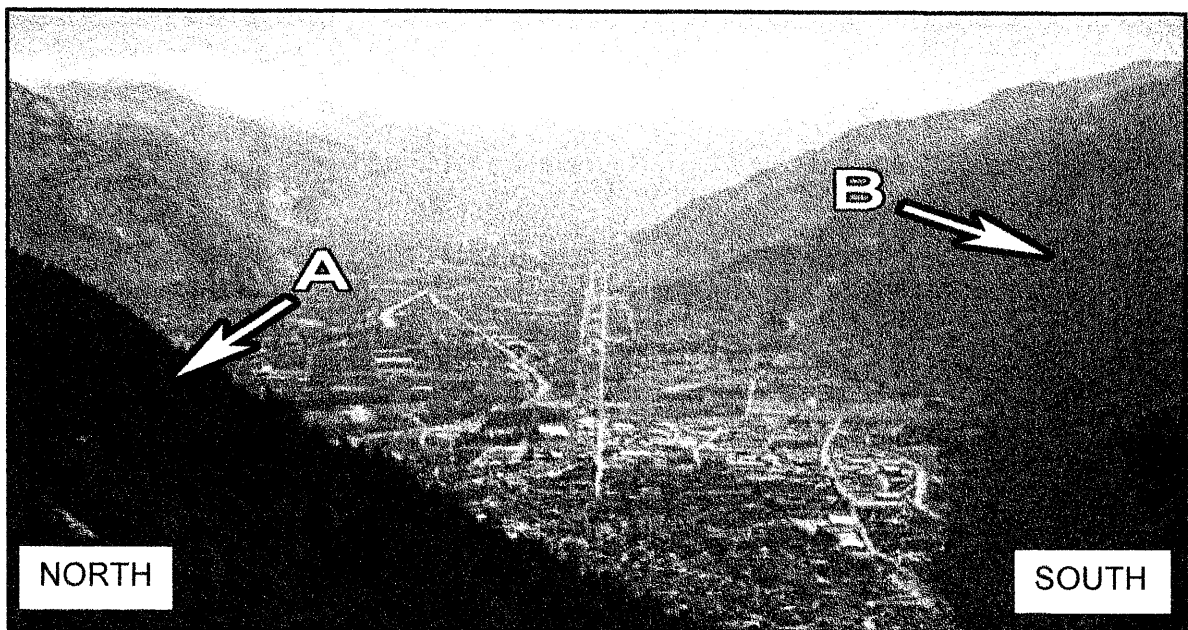
(7 x 1) (7)

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

COLUMN A	COLUMN B
1.2.1 Sediment deposits within a river channel.	A. Water table
1.2.2 High-lying area separating two drainage basins.	B. Mouth
1.2.3 The point of origin of a river.	C. Interfluvium
1.2.4 The flat area next to a river.	D. Braided stream
1.2.5 Where the tributaries join the main river.	E. Drainage basin
1.2.6 The area drained by a river and its tributaries.	F. Confluence
1.2.7 Point where the river flows into the ocean.	G. Watershed
1.2.8 High-lying area between two tributaries.	H. Floodplain
	I. Source

(8 x 1) (8)

- 1.3 Refer to the photograph showing Slope aspect.



[SOURCE: Adapted from <http://www.geography-site.co.uk/>]

- 1.3.1 Define the term *aspect*. (1 x 2) (2)
- 1.3.2 Which of the two slopes **A** or **B** will receive the most sunlight? (1 x 1) (1)
- 1.3.3 Provide reasons why in the Southern Hemisphere the South-facing slope is used for forestry and the North-facing slope is used for crops and pastures. (2 x 2) (4)
- 1.3.4 In a paragraph of approximately EIGHT lines discuss the influence of katabatic winds on settlement and transport in the valley. (4 x 2) (8)



1.4 Refer to the diagram on fluvial landforms.



[Adapted from <https://brainly.in/question/236381>]

1.4.1 Name the concept indicated by the chain line labelled A. (1 x 1) (1)

1.4.2 Identify the fluvial landforms labelled B, C and D. (3 x 1) (3)

1.4.3 Explain how fluvial landform C develops into fluvial landform D. (2 x 2) (4)

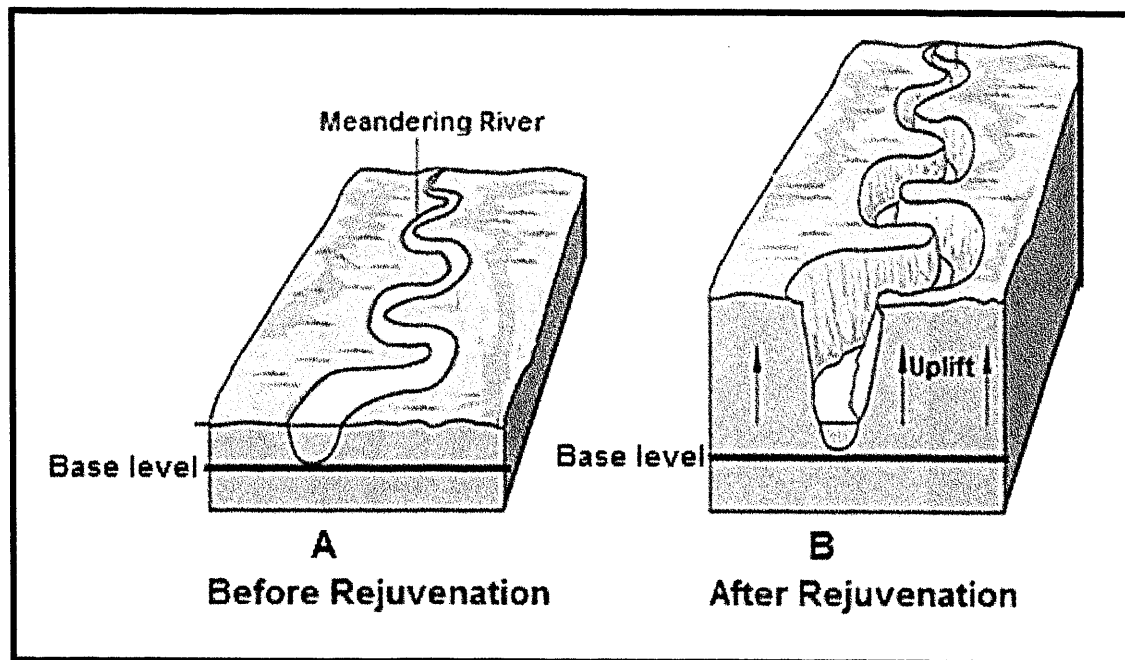
1.4.4 Fluvial landform labelled E is a delta.

(a) Identify the course of the river in which deltas develop. (1 x 1) (1)

(b) Explain ONE condition necessary for the formation of deltas. (1 x 2) (2)

(c) Suggest why deltas can be regarded as a threat to communities living on them. (2 x 2) (4)

1.5 Refer to the sketch showing river rejuvenation.

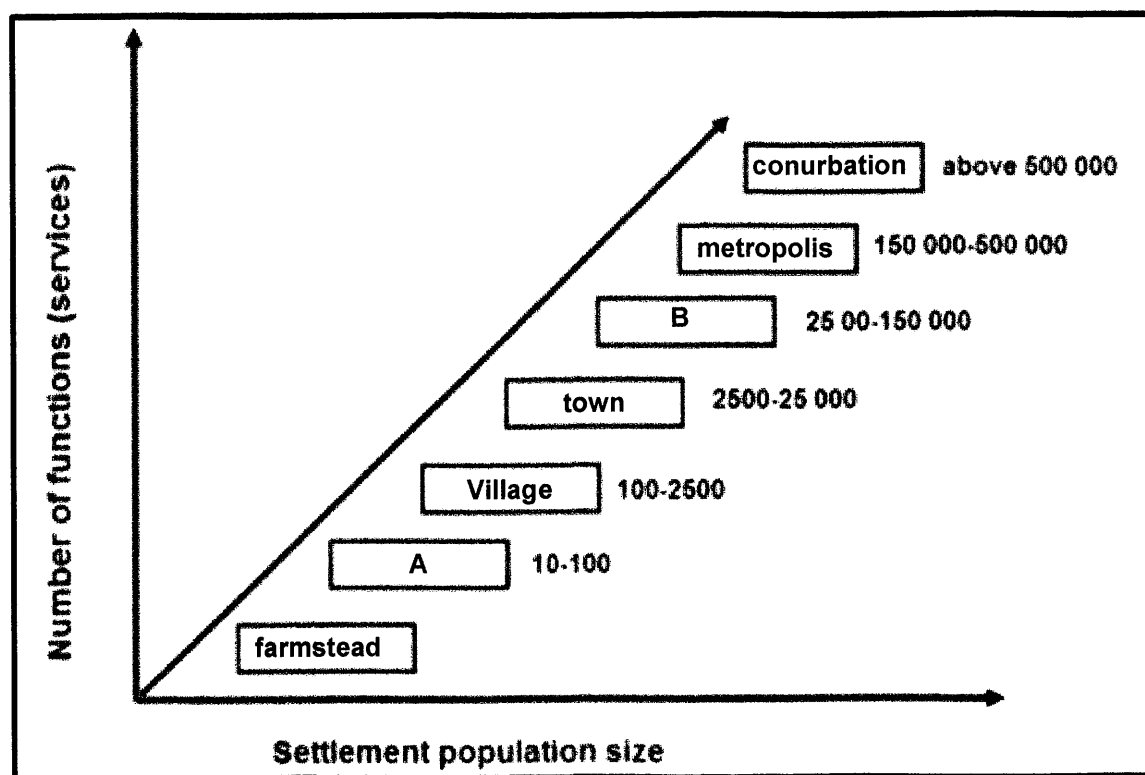


[Adapted from <http://www.google.com/search?q=rejuvenation+of+rivers>.]

- 1.5.1 What type of erosion is associated with river rejuvenation? (1 x 1) (1)
- 1.5.2 What evidence indicates that river rejuvenation has taken place? (1 x 1) (1)
- 1.5.3 Identify the force of upliftment associated with rejuvenation. (1 x 1) (1)
- 1.5.4 Discuss TWO possible causes of river rejuvenation. (2 x 2) (4)
- 1.5.5 Describe the impact that rejuvenation will have on the meander in the above sketch. (1 x 2) (2)
- 1.5.6 Suggest why rejuvenated land is not suitable for human activity. (3 x 2) (6)

## QUESTION 2: RURAL AND URBAN SETTLEMENT

2.1 Refer to the sketch showing hierarchy of settlements.

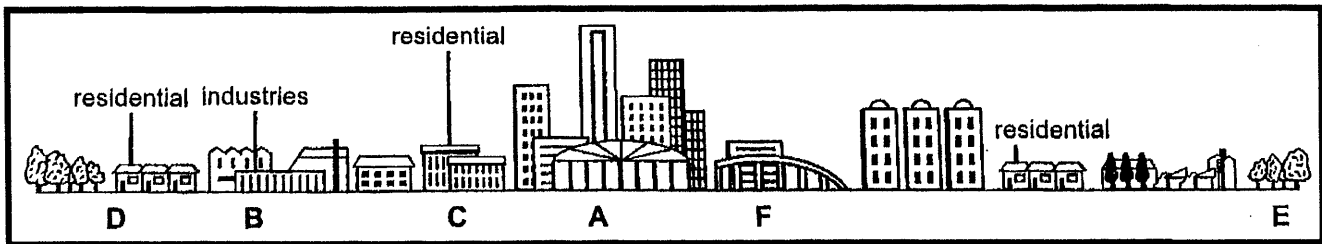


[Adapted from Wikispaces and Exam Series]

- 2.1.1 Name the settlement type that will be found at **A**.
- 2.1.2 Why will **B** have a larger sphere of influence?
- 2.1.3 Which is the smallest settlement on the hierarchy?
- 2.1.4 Will the city or the metropolis have a higher threshold population?
- 2.1.5 What is the name of the settlement that is larger than a conurbation?
- 2.1.6 Give a reason for that conurbation having the largest sphere of influence.
- 2.1.7 Will settlement **A** or **B** have more low-order functions?
- 2.1.8 Which rural settlement offers the most services? (8 x 1) (8)



2.2 Refer to the diagram below which shows the urban profile of a modern city.



[Adapted from [www.learnmindset.co.za](http://www.learnmindset.co.za)]

2.2.1 Name the land-use zone **A**.

2.2.2 Identify land-use **E**.

2.2.3 Which land-use zone occupies the most space?

2.2.4 Is industrial area **B** a light or heavy industrial zone?

2.2.5 Which **ONE** of the two residential areas (**C** or **D**) is most likely the low income area?

2.2.6 Why land-use zone **F** is regarded as the transition zone?

2.2.7 Which land-use zone has the highest building density?

(7 x 1) (7)





2.3 Refer to the extract on Rural-Urban Migration.

### HOPE

Susanne Melda, 26 November 2012

Rural-urban migration is believed to affect various dimensions of migrants' well-being. Desires, such as the opportunity to improve the standard of living and better services, are not always met.

The process of migration is often undertaken with an aspiration (desire) of improved opportunities for socio-economic advancement. However, it does not always entail improvement of living standard and poverty eradication. Rural migrants settling in big cities are the most vulnerable and may experience detrimental (unsafe) living conditions.

[Adapted from [www.migratingoutofpoverty.org](http://www.migratingoutofpoverty.org)]

2.3.1 Define the term *Rural-Urban Migration*. (2 x 1) (2)

2.3.2 The extract implies 'hope' from rural-urban migration.

What are the migrants expecting in the urban areas? (1 x 1) (1)

2.3.3 Explain why rural-urban migration does not always lead to an improvement in the standard of living of rural migrants. (2 x 2) (4)

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

2.4 Refer to the extract on land reform in South Africa.

### LAND REFORM IN SOUTH AFRICA

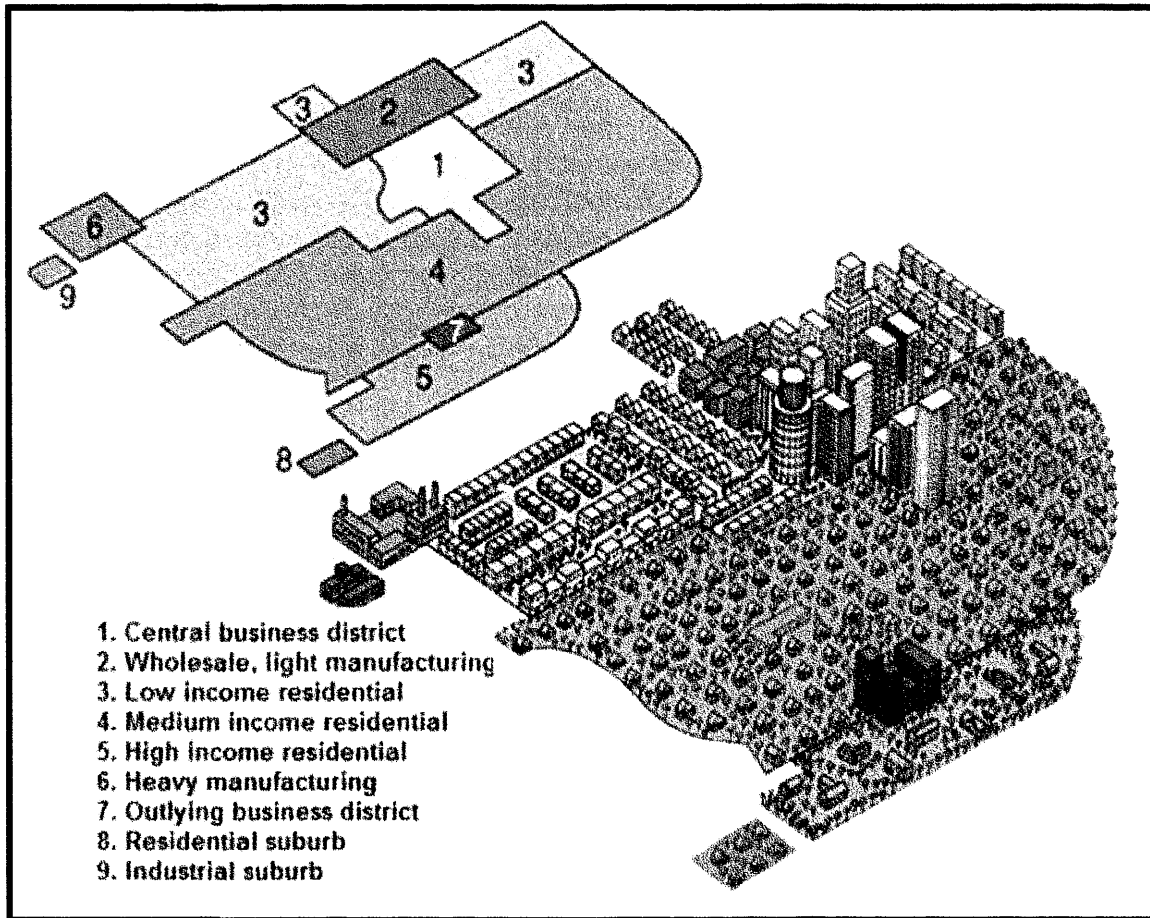
Land reform in South Africa is the promise of “land restitution” to empower farm workers and reduce inequality. This also refers to aspects such as property, possible white owned businesses. It is believed to allow previously unemployed people to participate in the economy and better the country’s economic growth. It also relates to restitution in the form of settling land claims of people who were forcefully removed from their homes in urban areas that were declared white, by the apartheid government’s segregationist Group Areas Act, as well as restitution for people forcibly evicted from rural land because of apartheid policies.

However, many South Africans and foreign commentators have also voiced alarm over the failure of the redistribution policy, having failed around 50% of land reform projects.

[https://en.wikipedia.org/wiki/Land\\_reform\\_in\\_South\\_Africa](https://en.wikipedia.org/wiki/Land_reform_in_South_Africa)

- 2.4.1 Define the term *land restitution*. (1 x 2) (2)
- 2.4.2 Quote TWO aims of land reform mentioned in the extract. (2 x 1) (2)
- 2.4.3 What percentage of land reform projects were unsuccessful? (1 x 1) (1)
- 2.4.4 Why was the target set for land reform not reached? (2 x 2) (4)
- 2.4.5 Assess the important role that land restitution plays in the social justice process in a democratic South Africa. (3 x 2) (6)

2.5 Refer to sketch showing a model of urban structure.



[Source: <https://planningtank.com/settlement-geography/model>]

2.5.1 Identify the model of urban structure. (1 x 1) (1)

2.5.2 Which land-use zone covers the largest area in the illustrated model of urban structure? (1 x 1) (1)

2.5.3 Name ONE visible characteristic of the CBD. (1 x 1) (1)

2.5.4 Give ONE reason for the development of the outlying business district (7) on the outskirts of the city. (1 x 2) (2)

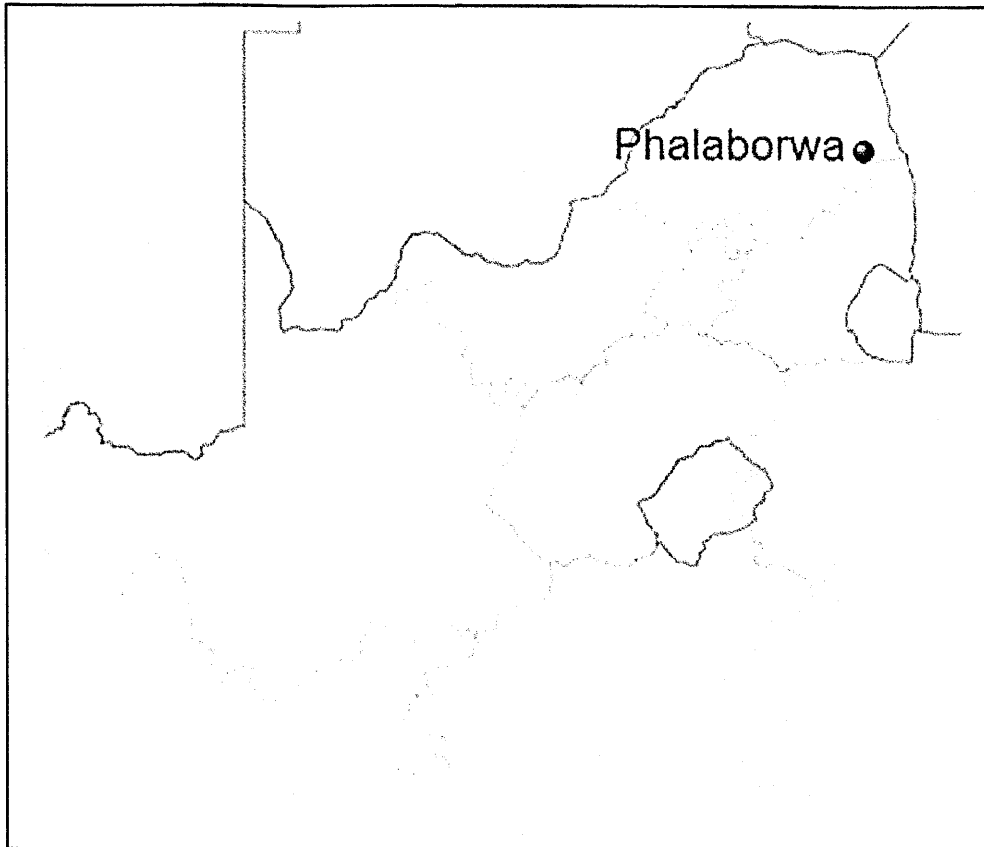
2.5.5 Refer to land-use zones 5 and 6.

(a) Comment on the location of land-use zones 5 and 6 in relation to each other. (1 x 2) (2)

(b) Compatibility (ability to live or to exist together) determines the location of land-use zones in an urban area. Give reasons why 5 and 6 are not compatible. (2 x 2) (4)

2.5.6 What are the similarities between the South African city and the model identified in above sketch? (2 x 2) (4)

**TOTAL: [60]**

**SECTION B****QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES****GENERAL INFORMATION ON PHALABORWA**

Coordinates: 23°52' S ; 31°04' E

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

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

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

**ENGLISH**

Diggings  
Golf course  
River  
Sewerage works  
Estate  
Salt pan  
Nature Reserve

**AFRIKAANS**

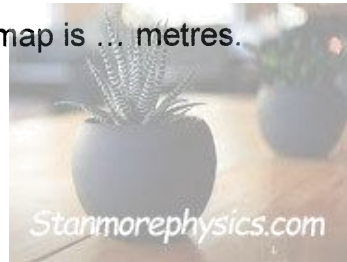
Uitgrawings  
Gholfbaan  
Rivier  
Rioolwerke  
Landgoed  
Soutpan  
Natuurreservaat

### 3.1 MAP SKILLS AND CALCULATIONS

3.1.1 Name the province that lies south of Phalaborwa. (1 x 1) (1)

3.1.2 The contour interval on the topographic map is ... metres.

- A. 20
- B. 10
- C. 5
- D. 50



(1 x 1) (1)

3.1.3 Calculate the area covered by the orthophoto map as demarcated in red on the topographic map in km<sup>2</sup>.

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

3.1.4 What is the difference in height between  $\Delta 12$  in block D2 and the bench mark in block D1. (1 x 1) (1)

3.1.5 Determine the true bearing of the spot height 445 in block C5 from spot height 499 in block E4. (1 x 1) (1)

3.1.6 The magnetic declination for 2022 is 16°12' west of true north. Use the true bearing in your answer to QUESTION 3.1.5 to calculate the magnetic bearing (MB).

Formula: MB = True Bearing (TB) + Magnetic Declination (MD) (1 x 1) (1)

3.1.7 Determine the feature that is located at the following grid reference:

23° 54' 10" S ; 31° 6' 53" E (1 x 1) (1)



### 3.2 MAP INTERPRETATION

3.2.1 Phalaborwa is a ... in Limpopo, South Africa.

- A. city
- B. town
- C. metropolis
- D. village

(1 x 1) (1)

3.2.2 The altitude shown by J in block C4 on the topographic map is a ...

- A. contour.
- B. bench mark.
- C. spot height.
- D. trigonometric beacon.

(1 x 1) (1)

3.2.3 Refer to the settlement Masakoleng in block A2/3.

- (a) Is this settlement (rural or urban)?
- (b) The settlement pattern is (nucleated / dispersed).
- (c) Explain ONE advantage and ONE disadvantage of a farm worker living in the settlement identified in QUESTION 3.2.3 (b).

(1 x 1) (1)

(1 x 1) (1)

(2 x 2) (4)

3.2.4 The drainage pattern formed by the river system in block B5 is ...

- A. Dendritic
- B. Trellis
- C. Rectangular
- D. Radial

(1 x 1) (1)

3.2.5 State the underlying rock structure of the area found in block B5 associated with the above drainage pattern.

(1 x 1) (1)

3.2.6 Identify the street pattern covered by the orthophoto map.

(1 x 1) (1)

3.2.7 State ONE advantage of the street pattern identified in QUESTION 3.2.6.

(1 x 1) (1)

### 3.3 GEOGRAPHICAL INFORMATION SYSTEM (GIS)

Refer to block A4 on the topographic map.

3.3.1 Define the term *data intergration*. (1 x 1) (1)

3.3.2 Give examples of the following data layers found in block A4.

(a) An infrastructure layer. (1 x 1) (1)

(b) A drainage layer. (1 x 1) (1)

3.3.3 State the difference between spatial and attribute data. (2 x 1) (2)

3.3.4 The Arterial road is a tarred road.  
Would you consider this information to be spatial or attribute data? (1 x 1) (1)

3.3.5 Give a reason for your answer to QUESTION 3.3.4. (1 x 2) (2)

**TOTAL: 30**

**GRAND TOTAL: 150**



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**EDUCATION**  
**REPUBLIC OF SOUTH AFRICA**

## **NATIONAL SENIOR CERTIFICATE**

**GRADE 12**

### **GEOGRAPHY MARKING GUIDELINES**

**COMMON TEST**

**JUNE 2022**

*Stanmorephysics.com*

**MARKS: 150**

**This marking guideline consists of 11 pages.**

**QUESTION 1: CLIMATE AND WEATHER**

1.1

1.1.1 C / mature ✓

1.1.2 A / cold ✓

1.1.3 D / cool ✓

1.1.4 C / warm ✓

1.1.5 C / cumulonimbus ✓

1.1.6 D / nimbostratus ✓

1.1.7 B / North West ✓

(7 x 1) (7)

1.2

1.2.1 D ✓

1.2.2 G ✓

1.2.3 I ✓

1.2.4 H ✓

1.2.5 F ✓

1.2.6 E ✓

1.2.7 B ✓

1.2.8 C ✓

(8 x 1) (8)

1.3

1.3.1 The situation of mountains or hill slopes in relation to the sun's rays. ✓✓  
[CONCEPT]

(1 x 2) (2)

1.3.2 Question removed due to technical error (1 x 1) (1)

1.3.3 **South-facing slope:** less sunlight, moisture is contained in the soil, as evaporation is lower. This is favourable condition for forestry ✓✓

**North-facing slope:** receives the most sunlight, which is good for crops and pastures. Also receives most heat as the sun heats up the north-facing slope ✓✓

Crops need more sunlight to ripen and sweeten ✓✓ (2 x 2) (4)



### 1.3.4 Settlement

Land and property values are higher on the warmer middle slopes which lie within the thermal belt ✓✓

Katabatic winds trap pollutants released by heavy industries within the valley at night ✓✓

Smog forms and this leads to respiratory problems such as asthma and wheezing ✓✓

The valley floor is generally cold and damp and is not suitable for settlements ✓✓

### Transport

Fog occurs on calm, cloudless nights within the valley and this reduces visibility ✓✓

Motorists are particularly affected and this leads to an increase in accidents ✓✓

(Any FOUR- **Must include both settlement and transport**)

(4 x 2) (8)

## 1.4

1.4.1 Drainage basin ✓

(1 x 1) (1)

1.4.2 B – Waterfall ✓

C – Meander ✓

D – Ox-bow lake or meander scar ✓

(3 x 1) (3)

1.4.3 Erosion on the outer bank and deposition on the inner bank of the meander results in the meander neck becoming narrower ✓✓

During times of flood, the water cannot negotiate the meander loop and flows straight ✓✓

This results in the meander loop being cut off from the main river to form an ox-bow lake ✓✓

(Any TWO)

(2 x 2) (4)

1.4.4 (a) Lower course ✓

(1 x 1) (1)

(b) The river must have a large amount of sediment ✓✓

The sea must have weak currents and a small tidal range ✓✓

The sea must be shallow at the rivers' mouth. ✓✓

(Any ONE)

(1 x 2) (2)

(c) Areas are a constant risk of flooding. ✓✓

Vulnerable to rising sea levels. ✓✓

Water is often dirty and polluted (industry, agriculture, sewers) ✓✓

Mosquitoes are attracted to water – risk of diseases – malaria ✓✓

Storm surges from tropical storms. ✓✓

(Any TWO)

(2 x 2) (4)

1.5

- 1.5.1 Vertical / downward erosion ✓ (1 x 1)(1)
- 1.5.2 Upliftment ✓  
 Entrenched / Incised meanders ✓  
 River B is now deeper than river A ✓  
 (Any ONE) (1 x 1)(1)
- 1.5.3 Isostatic uplift / Tectonic forces ✓ (1 x 1)(1)
- 1.5.4 River capture increases the water volume ✓✓  
 Fast flowing tributary which joins the main river ✓✓  
 Sustained / prolonged increase in rainfall within a catchment ✓✓  
 Climate change that results in an increased rainfall ✓✓  
 Tectonic shifts in the landscapes (uplift) changes the base level of the river ✓✓  
 Drop in sea level changes the base level of the river ✓✓  
 Sudden change in gradient ✓✓  
 Clearing of vegetation increase run-off ✓✓  
 (Any TWO) (2 x 2)(4)
- 1.5.5 It will cause the meander to be incised or entrenched ✓ (1 x 2)(2)
- 1.5.6 Steeper slopes make it unsuitable for human living ✓✓  
 Deeper gorges makes farming activity impossible ✓✓  
 Building infrastructure will be more expensive ✓✓  
 More specialized farming machinery will be needed ✓✓  
 Water will not be easily accessible for human usage ✓✓  
 Narrow flood plains reduce fertile farming land ✓✓  
 (Any THREE) (3 x 2)(6)

**TOTAL: [60]**



## QUESTION 2 RURAL AND URBAN SETTLEMENTS

### 2.1

2.1.1 Hamlet ✓

2.1.2 There is a larger threshold population/ there are many high order goods and services ✓

2.1.3 Farmstead ✓

2.1.4 Metropolis ✓

2.1.5 Megalopolis ✓

2.1.6 Offers many high order functions/ high threshold population ✓

2.1.7 A ✓

2.1.8 Village ✓

(8 x 1) (8)

### 2.2

2.2.1 CBD ✓

2.2.2 Rural-urban fringe ✓

2.2.3 Residential ✓

2.2.4 Heavy industrial zone ✓

2.2.5 D ✓

2.2.6 It is a zone of change/ because it is on the edge of the CBD ✓

2.2.7 A ✓

(7 x 1) (7)

2.3

2.3.1 The movement of people from rural to urban areas ✓✓ (1 x 2) (2)  
[Concept]

2.3.2 Employment opportunities ✓  
Better salaries ✓  
Improved housing conditions ✓  
Improved education / medical facilities ✓  
Better service delivery ✓  
Improved living standards ✓  
(Any ONE) (1 x 1) (1)

2.3.3 Forced to seek employment in the informal sector with lower wages ✓✓  
Failure to find employment ✓✓  
Inadequate skills to qualify for formal employment in the formal sector ✓✓  
Lack of housing provision ✓✓  
Seek refuge in informal settlements to reduce costs of living which results in poorer living conditions ✓✓  
Cost of living in the urban areas are high ✓✓  
Expected service delivery not met as it is strained / overburdened ✓✓  
When coming to cities people are exposed to social ills ✓✓  
(Any TWO) (2 x 2) (4)

2.3.4 Meeting the basic needs/RDP ✓✓  
Comprehensive Rural Development Programme/Agenda 21/NDP ✓✓  
Provide quality service e.g. schools ✓✓  
Upgrade infrastructure to improve accessibility ✓✓  
Industrial development to create more employment ✓✓  
Tourism and special events ✓✓  
Development of game parks/Ecotourism ✓✓  
Develop tourist accommodation such as bed-and-breakfast ✓✓  
Improve salaries ✓✓  
Government grants / support ✓✓  
Uplifting farming communities ✓✓  
Development of agricultural schools ✓✓  
Employment to be created ✓✓  
Improved access to capital for farmers ✓✓  
Changing farming practices to improve ✓✓  
Skills training for farmers ✓✓  
Speed up land reform ✓✓  
(Any FOUR) (4 x 2) (8)



2.4

2.4.1 It is the process of compensating and restoring land to people who lost their land due to forced removal ✓✓  
(CONCEPT) (1 x 2) (2)

2.4.2 Empower farm workers ✓  
Reduce inequality ✓  
Allow previously unemployed people to participate in the economy ✓✓  
Better the country's economic growth ✓  
Settling land claims of people who have forcefully removed from their homes in urban areas ✓  
(Any TWO) (2 x 1) (2)

2.4.3 50% ✓ (1 x 1) (1)

2.4.4 Willing seller and willing buyer clause delays the process ✓✓  
Land reform policy is very costly to implement ✓✓  
It takes time to resolve land claim disputes ✓✓  
The land reform policies are being challenged due to disagreements (government/traditional leaders) which delays the process ✓✓  
No proper documents of previous ownership delay the process ✓✓  
There is lack of a reliable monitoring system and evaluation of the process ✓✓  
Gaps in the current policies which compromise effective implementation of land reform ✓✓  
Government lacks capacity/efficiency/ shortage of skills to run the programme ✓✓  
Lack of business and financial support to run the programme ✓✓  
Mismanagement/Corruption by some of the officials managing the process ✓✓  
Land reform has not been a political priority ✓✓  
Money wasted on failed projects ✓✓  
[Any TWO] (2 x 2) (4)

2.4.5 Question removed due to technical error

2.5

2.5.1 Multiple nuclei model/Harris and Ullman ✓ (1 x 1) (1)

2.5.2 Residential/ medium income residential ✓ (1 x 1) (1)



- 2.5.3 Tall buildings/skyscrapers ✓  
High building density ✓  
(Any ONE)

(1 x 1) (1)

- 2.5.4 To decentralise commercial activities ✓✓  
Outlying business district is more accessible in the outskirts ✓✓  
Commercial activities now closer to the residential areas ✓✓  
Less traffic congestion in the outskirts ✓✓  
Lower crime rate in the outskirts ✓✓  
More space/room for expansion on the outskirts ✓✓  
Land cheaper in the outskirts ✓✓  
Less pollution in the outskirts ✓✓  
Peaceful/tranquil surroundings in the outskirts ✓✓

OR

- CBD became less accessible than the outlying business district ✓✓  
Commercial activities of CBD far from residential areas ✓✓  
More traffic congestion in the CBD ✓✓  
Higher crime rate in CBD ✓✓  
Less space in CBD ✓✓  
More pollution in the CBD ✓✓  
High land values/rentals in the CBD ✓✓  
Urban blight in the CBD ✓✓  
(Any ONE)

(1 x 2) (2)

- 2.5.5 (a) Land-use zones 5 and 6 are far apart ✓✓  
Located on opposite sides of the city ✓✓  
(Any ONE)

(1 x 2) (2)

- (b) Heavy manufacturing industrial land use zones cause a lot of noise pollution which does not suit high income residential zones ✓✓  
Air pollution from industrial areas repels (push away) high-income residential zones ✓✓  
Unpleasant odours from industrial areas is not attractive to high-income residential zones ✓✓  
Heavy industries are not aesthetically pleasing for people in high-income residential areas ✓✓  
Influx of traffic congestion near heavy manufacturing land-use zones does not suit high income residential zones ✓✓  
(Any TWO)

(2 x 2) (4)

- 2.5.6 There is a clear separation between high, middle and low income residential areas ✓✓  
Separation between suburbs and the workplace ✓✓  
Sharply defined land-use zones ✓✓  
Tall buildings/high building density in the CBD of both ✓✓  
(Any TWO)

(2 x 2) (4)

**TOTAL: [60]**

### QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES

#### 3.1 MAP SKILLS AND CALCULATIONS

3.1.1 Mpumalanga ✓



(1 x 1)(1)

3.1.2 A ✓

(1 x 1)(1)

3.1.3 Area = Length (L) x Breadth (B)

$$\begin{aligned} \text{Length} &= 4,2 \times 0,5 \\ &= 2,1 \text{ km} \checkmark \end{aligned}$$

$$\begin{aligned} \text{Range: } &(4,1 - 4,3 \text{ cm}) \\ &(2,05 - 2,15 \text{ km}) \end{aligned}$$

$$\begin{aligned} \text{Breadth} &= 3,8 \times 0,5 \\ &= 1,9 \text{ km} \checkmark \end{aligned}$$

$$\begin{aligned} \text{Range: } &(3,7 - 3,9 \text{ cm}) \\ &(1,85 - 1,95 \text{ km}) \end{aligned}$$

$$\begin{aligned} \text{Area} &= 2,1 \times 1,9 \text{ km} \checkmark \\ &= 3,99 \text{ km}^2 \checkmark \end{aligned}$$

$$\text{Range: } (3,79 - 4,19 \text{ km}^2)$$

(4 x 1)(4)

3.1.4  $493,1 - 397,1 = 96 \text{ m} \checkmark$

(1 x 1)(1)

3.1.5  $34^\circ \checkmark$

Range :  $(33^\circ - 35^\circ)$

(1 x 1)(1)

3.1.6  $MB = TB + MD$

$$= 34^\circ + 16^\circ 12'$$

$$= 50^\circ 12' \checkmark$$

Range :  $(49^\circ - 51^\circ) \checkmark$

(1 x 1)(1)

3.1.7 Question removed due to technical error

(1 x 1)(1)

### 3.2 MAP INTERPRETATION

3.2.1 B ✓ (1 x 1)(1)

3.2.2 C ✓ (1 x 1)(1)

3.2.3 (a) rural ✓ (1 x 1)(1)

(b) nucleated ✓ (1 x 1)(1)

(c) **Advantage**

Greater sense of security because of larger numbers ✓✓

Can share ideas on farming ✓✓

Community activities(social gatherings)

(Any ONE)

**Disadvantage**

Lack of privacy ✓✓

Few services ✓✓

Conflict between farm workers ✓✓

Diseases can spread easily ✓✓

(Any ONE)

(2 x 2)(4)

3.2.4 A ✓ (1 x 1)(1)

3.2.5 Rocks that have uniform / equal resistance to erosion. ✓

Horizontal rock structure ✓

Massive resistant rock ✓

(Any ONE)

(1 x 1)(1)

3.2.6 Planned Irregular/ irregular ✓

(1 x 1)(1)

3.2.7 Saves time and fuel ✓

Free flow of traffic ✓

Not monotonous ✓

(Any ONE)

(1 x 1)(1)



### 3.3 GEOGRAPHICAL INFORMATION SYSTEM (GIS)

3.3.1 Taking data from different sources and combining it. ✓ (1 x 1) (1)  
[Concept]

3.3.2 (a) Track / Hiking trail ✓  
Dam wall ✓  
Reservoir ✓  
(Any ONE)

(1 x 1) (1)

(b) (Non-perennial) River ✓  
Dam / perennial water ✓  
Reservoir ✓  
(Any ONE)



(1 x 1) (1)

3.3.3 **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)

3.3.4 Attribute data ✓

(1 x 1) (1)

3.3.5 It gives descriptions / characteristics (further information)  
regarding the type of road. ✓✓  
It gives the description / characteristics (further information) about  
the road being tarred. ✓✓  
(Any ONE)

(1 x 2) (2)

**TOTAL: [30]**

**GRAND TOTAL: 150**

**NB The learner mark must be divided by 142 and multiplied by 150**

**e.g.  $\frac{(\text{learner mark} \times 150)}{142}$**

**142**