GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

PREPARATORY EXAMINATION

2023

MARKING GUIDELINES

GEOGRAPHY (PAPER 2) (10782)

16 pages

PRINCIPLES FOR MARKING GEOGRAPHY – 2023

The following marking principles are developed to standardise marking processes.

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 (M) 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 for which a mark is being allocated.
    - Ticks must be kept SMALL, as various layers of moderation may take place.
- Incorrect answers must be marked with a clear, neat cross: X
    - Use MORE than one cross across 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.

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.

TOTALLING AND TRANSFERRING OF MARKS

- Each subquestion must be totalled.
    - Questions in Section A have five subsections, therefore five subtotals per question required. Section B has three subsections and three subtotals.
    - Subsection totals to be written in the right hand margin at the end of the subsection and it must be underlined.
    - Subtotals must be written legibly.
    - Leave space to write in moderated marks on different levels.
- Total subtotals and transfer totals to top left hand margin next to question number.
- Transfer total to cover of answer book.

MODERATION

Marking on each level of moderation is done in the same way as the initial marking. All guidelines for marking must be adhered to.

If a mark for a subquestion is changed after moderation, the moderator must strike through the marker's mark and write down the new mark. ~~12~~ 16

The total for the question must be recalculated, and similarly be struck off and the new total to be written down. ~~26~~ 36

QUESTION 1 **22**

1.1 1.1.1 A (South Atlantic High) ✓

1.1.2 B (Kalahari High) ✓

1.1.3 B (South Indian) X 2

1.2 1.2.1 Melting snow ✓

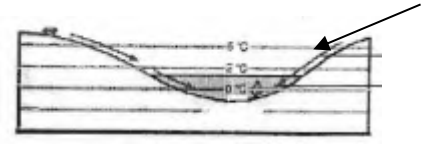
1.2.2 Mouth X

1.2.3 Third order ✓ 2

1.3 1.3.1 Katabatic X

1.3.2 1 occurs during the day while 2 occurs at night ✓✓

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



6

1.4 1.4.1 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. 5

1.5 1.5.1 (a) A river that only flows all year-round X
(b) The river channel is wide X
(c) Regularity ✓✓ of rainfall and the soil type ✓✓ over which the streams flow.

1.5.2 Gauteng ✓and the Eastern Cape X

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 (M). It will be costly to purify water for use in electricity generation. These costs will be in electricity prices. Costs will increase the price of electricity during production. There will be less clean water to generate hydroelectricity. 7

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

QUESTION 1: RURAL AND URBAN SETTLEMENTS

1.1 1.1.1 ***D (1)/Central place***

1.1.2 ***A (1)/Walter Christaller***

1.1.3 ***B (1)/city***

1.1.4 ***C (1)/town***

1.1.5 ***A (1) (i) and (iii)/A* and large sphere of influence**

1.1.6 ***C (1)/central place***

1.1.7 ***B (1)/Ferrari dealership***

1.1.8 ***C (1)/threshold population*** (8 x 1) (8)

1.2 1.2.1 ***H (1)***

1.2.2 ***A (1)***

1.2.3 ***D (1)***

1.2.4 ***F (1)***

1.2.5 ***G (1)***

1.2.6 ***E (1)***

1.2.7 ***B (1)*** (7 x 1) (7)

1.3 Study the cartoon below that is based on rural-urban migration.

1.3.1 Define the term *rural-urban migration.*

The movement of people from rural areas to urban areas. (2)
[CONCEPT] (1 x 2) (2)

1.3.2 Give ONE push factor that is visible in the cartoon.



Poor harvest (1)
Droughts (1)
Remote location (1)
Poor housing (1)
[Any ONE] (1 x 1) (1)

1.3.3 Account for the impact that the push factor mentioned in QUESTION 1.3.2 will have on rural areas.

Poor harvest – less income generated / results in food insecurity (2)/ results in rural depopulation.
Poor harvest – unemployment / results in food insecurity/ results in rural depopulation (2)
Drought – people leave rural areas to go in search of new opportunities/jobs / results in rural depopulation (2)
Remoteness – not enough social activities/ results in rural depopulation (2)
Remoteness – poor service delivery / results in rural depopulation (2)
Poor housing – limited services e.g., running water and electricity/ results in rural depopulation (2)
[Must refer to the push factor in answer to question 1.3.2 and impact]
(1 x 2) (2)

1.3.4 Predict the social impact of rural urban migration on the urban areas.

An influx of people can put a strain on urban infrastructure. (can give examples) (2)
Strain on services (can give examples) (2)
Can lead to increased congestion, longer waiting times for medical care (2)
Shortage of affordable housing (can give example, informal settlements will develop/ illegal occupation of land) (2)
Can result in fewer job opportunities/unemployment (2)
There is a risk of urban decay. (Can give examples) (2)
Unemployment can result in crime (2)
[Any TWO] (2 x 2) (4)

1.3.5 Suggest THREE strategies a government can implement to encourage people to stay in the rural areas.

Governments can invest in improving rural infrastructure (give examples) (2)
Improve access to basic services (give examples) in rural areas. (2)
Better infrastructure can attract business investment in rural areas. (2)
More investment can create more job opportunities. (2)
Government can provide incentives for businesses in rural areas. (2) (can give examples)
Skills development programs in rural areas for local inhabitants. (2)
Improved and better farming practises. (2)
Subsidies to farmers (2)
Improve policing in rural areas (2)
Land reform (2)
Develop rural areas as tourists attractions (2)
Upgrading of retirement villages (2)
Improved work conditions and salaries of workers (2)
[Any THREE] Strategies / examples can only be refered to once) (3 x 2) (6)

1.4 Refer to the infographic to answer the following questions.

1.4.1 Identify the land-use zone indicated as **A** in the infographic.

CBD/Central business district (1) (1 x 1) (1)





1.4.2 Quote from the infographic the importance of the land-use zone identified as **A**.

"in terms of their potential for high-density affordable residential accommodation" (1) (1 x 1) (1)

1.4.3 State ONE characteristic of land-use zone **A** that is evident in the infographic.

Tall buildings (1)
High building density (1)
High accessibility (roads/railway)
[Any ONE] (1 x 1) (1)

1.4.4 (a) Which street pattern **X** or **Y,** is usually associated with the land-use zone at **A**.

Y - (grid iron street pattern) (1) (1 x 1) (1)

(b) Give a reason for your answer in QUESTION 1.4.4 (a).

Older areas of a city (2)
Easier to layout/ construct/ subdivide plots (2)
Older CBD built on flat gentle slopes (2)
(any one) (1 x 2) (2)

1.4.5 Give a term used for the movement of businesses away from land-use zone **A** towards the suburbs.

Decentralisation (1) (1 x 1) (1)

1.4.6 People and businesses are often forced to move out of land-use zone **A**. In a paragraph of approximately EIGHT lines, discuss factors that cause businesses to move away from land-use zone **A**.

Overcrowding at A forces people to move to the periphery. (2) (Spatial forces)
Traffic congestion and poor public transport force them to move to the outskirts / Insufficient parking (2)
The need for a special site that cannot be found in land-use A (2) (Site force)
Pollution (noise, water, air) forces people and businesses out into the suburb. (2) (Situational force)
Urban decay forces people and businesses out into the suburbs (2)
High rents, rates and taxes force people and businesses to move out. (2) (Economic force)
City centre is seen by people as old and regulated.(2) (Status force)
High crime rate in CBD (2)
High level of competition for space and customers (2)
[Any FOUR] (4 x 2) (8)

1.5 Refer to the case study below on how Johannesburg plans to upgrade informal settlements.

1.5.1 What is an *informal settlement?*

Areas where groups of housing units have been constructed on land that the occupants have no legal claim to or occupy illegally. (2)
OR
Unplanned settlements and areas where housing is not in compliance with current planning and building regulations (unauthorised housing).
[CONCEPT] (1 x 2) (2)

1.5.2 According to the article how many people are on the housing waiting list?

480,000 people (1) (1 x 1) (1)

1.5.3 Quote evidence from the article to prove that many people in Johannesburg are currently staying in informal settlements.

"The department has recognised 318 informal settlements in the city." (1) (1 x 1) (1)

1.5.4 Explain TWO possible reasons why so many people are currently staying in informal settlements around the Johannesburg area.

There is a lack of affordable housing. (2)
High population growth and rural-urban migration towards Johannesburg (2)
Unemployment rates are high, and people cannot afford to stay in formal houses. (2)
Economic vulnerability of people led to informal settlements in Johannesburg. (2)
Poor/weak governance results in land speculation and land grabbing. (2)
The absence of clear policy on informal settlements (2)
Not enough formal housing available (2)
Undocumented people - cannot access formal housing
Move into informal settlementsfor jobs/ close to work - save travel costs
[Any TWO] (2 x 2) (4)

1.5.5 Mention ONE social issue that is associated with informal settlements.

Overcrowding/no privacy (1)
Lack of basic services. (1) (Can give examples)
Unhealthy living conditions waste pollution/air pollution (1)
Poor waste management (1)
Crime and social degradation (1)
Spread of diseases (1)
Poverty (1)
[Any ONE] (1 x 1) (1)

1.5.6 Recommend THREE strategies that the Johannesburg municipality can use to upgrade informal settlements to solve the housing problems in Johannesburg.

Provide low-cost government housing programmes. (2)
Provide basic services to informal settlements. (2)
Redevelop hostels to create more formal housing. (2)
Develop/Build more low-cost housing. (2)
Upgrade old offices and empty high-rise buildings to low-cost housing units. (2)
Create tenure systems through land pooling and replotting. (2)
Identify appropriate low-cost housing for the city's future. (2)
Reduce plot sizes to accommodate more low-cost housing. (2)
Monitor and control absent landlords who exploit tenants in inner-city high-rise blocks. (2)
Provide better infrastructure (can give examples) in informal settlements
[Any THREE] (3 x 2) (6)
[60]

QUESTION 2: ECONOMIC GEOGRAPHY OF SOUTH AFRICA

2.1 2.1.1 ***tertiary (1)***

2.1.2 ***11% (1)***

2.1.3 ***secondary (1)***

2.1.4 ***tertiary (1)***

2.1.5 ***quaternary (1)***

2.1.6 ***primary (1)***

2.1.7 ***tertiary / quaternary (1)***

2.1.8 ***GNP (1)*** (8 x 1) (8)

2.2 2.2.1 ***Z (1)/Footloose industries***

2.2.2 ***Z (1)/Market-orientated industry***

2.2.3 ***Y (1)/Bridge industry***

2.2.4 ***Y (1)/Light industries***

2.2.5 ***Y (1)/Ubiquitous industries***

2.2.6 ***Y (1)/Raw material orientated industries***

2.2.7 ***Z (1)/Heavy industry*** (7 x 1) (7)

2.3 The following photo shows a power plant.

2.3.1 Define the term *heavy industry*.

Industry where large amounts of material are handled to produce large items, often generating much atmospheric and noise pollution. (2)
[CONCEPT] (1 x 2) (2)

2.3.2 Refer to the photo and indicate TWO visible factors which favour the location of this heavy industry.

Flat land (1)
Large piece of land (1) (2 x 1) (2)

2.3.3 Transport is ONE of the factors favouring industrial development in South Africa. Explain why this is perceived as such.

Important for the efficient transport of raw materials to industries (2)
Important for the distribution of products to domestic and international markets (2)
Accessibility / Efficient transport to and from industries (2)
[Any ONE] (1 x 2) (2)

2.3.4 (a) Identify the main environmental challenge associated with the heavy industry from the photo above.

Air pollution (1) (1 x 1) (1)

(b) Why is the challenge identified in QUESTION 2.3.4 (a) regarded (seen) as an environmental challenge?

Smoke from the chimneys causes air pollution and reduces the air quality. (2)
Smoke can contribute to global warming/climate change. (2)
Air pollution can have a negative impact on the ecosystem / natural vegetation. (2)
Smoke /steam can result in the development of acid rain that will damage the environment. (2)
[Any ONE] (1 x 2) (2)

(c) Suggest strategies that industries can implement to reduce the effect of the environmental challenge mentioned in QUESTION 2.3.4 (a).

Choose cleaner, non-toxic raw materials. (2)
Plant more trees in the surrounding area. (2)
Improve machineries or manufacturing processes to reduce emissions from factories./ add filters to chimneys (2)
Boosting performance of boilers can sharply reduce air pollution from the industry. (2)
Proper maintenance of boiler e.g., blowing dust from surface, reducing excess air can reduce air pollution from industries. (2)
Reducing the need of steam, the use of boiler, by identifying leaks can boost system by 10 – 50%. (2)
Taller chimneys to allow for pollutants to be pushed into upper layers (2)
[Any THREE] (3 x 2) (6)

2.4 Refer to the infographic on platinum mining.

2.4.1 Identify the THREE provinces, from the infographic, where platinum is mined.

Limpopo (1)
Northwest (1)
Gauteng (1)
Mpumalanga (1)
(Any three) (3 x 1) (3)

2.4.2 Provide evidence from the infographic for the location of platinum mines in the provinces identified in QUESTION 2.4.1.

Platinum is part of the Bushveld Igneous complex (which stretched through these 3 provinces). (2) (1 x 2) (2)

2.4.3 Identify TWO uses of platinum from the infographic.

Petroleum industry (1)
Manufacturing of primary feedstocks for the growing plastics industry. (1)
Growing demand for platinum jewellery (1)
[Any TWO] (2 x 1) (2)

2.4.4 In a paragraph of approximately EIGHT lines, suggest possible reasons for a decline in the production of platinum as shown in the infographic.

Strikes because of low wages result in a decline (less) in production. (2)
Prolonged industrial action will reduce productivity. (2)
Absenteeism of workers because of illness e.g. COVID-19, reduced production (lockdown). (2)
Electricity shortages / loadshedding can slow down mining processes. (2)
The lack of investment (local and foreign) would reduce operational capital. (2)
Lack of interest from investors due to political climate can lower mining. / nationalising mines (2)
High production costs will reduce the profit margin. (2)
The poor rand value will increase the demand which lowers the profit. / fluctuation of platinum prices (2)
[Any FOUR] (4 x 2) (8)
[15]

2.5 Read the following article on the Coega IDZ.

2.5.1 Define the term *Industrial Development Zone*.

The Industrial Development Zones (IDZs) are purpose-built industrial estates, linked to an international port or airport, which have been specifically designated for new investment by export-oriented industries and related services. (2)
[CONCEPT] (1 x 2) (2)

2.5.2 In which province is the Coega IDZ located?

Eastern Cape (1) (1 x 1) (1)

2.5.3 (a) What is the balance of payment?

The difference in the value between the invisible and the visible imports and exports in a country in one year (2)
or
A countries financial statements showing its transactions with the rest of the world (2)
[CONCEPT] (1 x 2) (2)

(b) Explain how the Coega IDZ contributed R1,38 billion to the balance of payment.

The Coega IDZ focuses on export and import of goods through the international port or airport. (2) (1 x 2) (2)

2.5.4 Evaluate the economic impact of the Coega IDZ on the local market.

Creates economic development and growth opportunities for the people of the Eastern Cape. (2)
The building/infrastructural development can be used for economic development. (2) (can give examples of infrastructure)
Better infrastructure increases export opportunities. (2)
Creates jobs opportunities for local people. (2)
In-service training can empower people to earn a better income. (2)
Creates opportunities for skills development for local people. (2)
Higher income will increase the spending power on goods and services in the local market. (2)
Encourage entrepreneurship in local communities. (can give examples) (2)
Can draw more investment (local and foreign) in the local area (2)
Can result in the development of link industries. (can give examples) (2)
[Any TWO] (2 x 2) (4)

2.5.5 Suggest strategies how national government can motivate potential investors to invest in the Coega IDZ.

Well-developed infrastructure (with international airports, railway lines and harbours) can attract investors. (2)
Well-developed national roads for transportation of goods (2)
Well-developed harbours – linked to major shipping routes (2)
Efficient access to import and export opportunities (2)
Access to markets in Africa and the rest of world as they are linked to harbours, airports, roads and railways (2)
Port of Port Elizabeth with well-developed storage facilities and harbour (container, car, breakbulk and bulk terminals) (2)
Efficient/Alternative forms of energy (2)
Availability of water supply (for industrial processes) (2)
Well-developed existing industries (automotive), can attract more investments (2)
Linked industries (tyre manufacturing, paint production, steel industries etc.) are already existing in this area. (2)
Availability of skilled and semi-skilled labour force (2)
Tax incentives for investors (2)
[Any TWO] (2 x 2) (4)
[60]

TOTAL SECTION A: 120

SECTION B

QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES

3.1 MAP SKILLS AND CALCULATIONS

Refer to the topographic map.

3.1.1 The land-use found at the following co-ordinates, 27°22'10''S and 26°36'30''E is …

C (1)/cemetery (1 x 1) (1)

3.1.2 The sewerage works in block **D2** is situated … from the excavations in block **C4**.

B (1)/south-west (1 x 1) (1)

Refer to the Hendrik Potgieter landing strip at **F** in blocks **B3 – 4** and **C3** on the topographic map. An aeroplane/aircraft come into land on the landing strip from a north easterly direction.

3.1.3 Determine the true bearing the pilot must use when approaching the landing strip.

54° (Range: 53° – 55°) (1) (1 x 1) (1)

3.1.4 The control room needs to communicate the landing process and therefore needs to make use of the magnetic declination to determine the correct magnetic bearing for the pilot to use. Calculate the current (2023) magnetic declination for the map.

Difference in years: 2023 – 2012 = 11 years (1)
Mean annual change: 2' westwards (1)
Total annual change: 11 years x 2' = 22' (1)
19°22' +(1) 22' = 19°44` West of True North (1) (5 x 1) (5)

3.1.5 Use your answers in QUESTION 3.1.3 and QUESTION 3.1.4 and determine the magnetic bearing used by the pilots for this landing process.

54° + (1) 19°44' = 73°44' (1) (Range: 72°44' – 74°44') (2 x 1) (2)

[10]

3.2 MAP INTERPRETATION

Refer to the topographic map.

3.2.1 Compare the street patterns at **G** of Bothaville in block **D2** and **D3** with the street patterns of Khotsong at **H** in blocks **B4** and **B5.** Redraw the following table in your answer book and complete the table.

	G	H
Street pattern	***Grid iron (1)***	***(Planned) irregular (1)***
Possible reason for the pattern	***Original street pattern of town (1)*** ***Easy for navigation (1)*** ***Traffic flow (1)*** ***[ANYONE]***	***Latest development (1)*** ***Fast traffic flow (1)*** ***Accommodate natural features e.g., mountain*** ***[ANYONE]***

(4 x 1) (4)

3.2.2 Bothaville can be considered a (central place/specialised) town.

central place (1) (1 x 1) (1)

3.2.3 Motivate your answer in QUESTION 3.2.2.

The town serves the surrounding maize farmers with necessary services and goods. (1) (1 x 1) (1)

Refer to the orthophoto map.

3.2.4 Silos are located at **I** in block **B2**.
Would you classify a silo as a (primary/ secondary) activity?

secondary (1) (1 x 1) (1)

3.2.5 Give a reason for your answer in QUESTION 3.2.4.

The purpose of a silo is to store the maize as it comes from the farms, therefore it acts as a secondary activity. (2) (1 x 2) (2)

Refer to the topographic map.

3.2.6 List TWO factors, evident from the topographic map which favour the planting of maize in the Bothaville region.

Availability of water/Perennial water (1)
Flat/gentle land (1)

(2 x 1) (2)

3.2.7 Name ONE hindering factor in block **B3** that would prevent the expansion/growth of the maize plantation on the Enkelboom farm in a south-easterly direction.

Excavation (1)
Main road (R 30) (1)
Landing strip (1)
Cemetery (1)
[Any ONE] (1 x 1) (1)
[12]

3.3 GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

Refer to the orthophoto map.

3.3.1 The orthophoto is an example of (vector/raster) data.

raster (1) (1 x 1) (1)

3.3.2 Explain how the data chosen in QUESTION 3.3.1 has been obtained.

Taking of aerial photos using drones, airplanes, helicopters (2)
From satellite images (2)
Using remote sensing (2)
[Any ONE] (1 x 2) (2)

3.3.3 Identify the line symbol indicated as **J** in block **D2**.

R30 / R59 (1)/Arterial Route 30/ Arterial Road (1 x 1) (1)

3.3.4 Define the term *spectral resolution*.

The amount of spectral detail in a band based on the number and width of pixels (2)
The range of wavelengths that an imaginary system can detect (2)
[CONCEPT] (1 x 2) (2)

3.3.5 Comment on the spectral resolution of the orthophoto map.

The spectral resolution in the orthophoto map is clear (2)
Different shades of grey are shown on orthophoto map (2) (1 x 2) (2)
[8]

TOTAL SECTION B: 30

TOTAL: 150