GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

GAUTENG DEPARTMENT OF EDUCATION

PREPARATORY EXAMINATION

2019

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GEOGRAPHY

PAPER 1

TIME: 3 hours

MARKS: 225

15 pages + an addendum of 13 pages

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(Paper 1)

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INSTRUCTIONS AND INFORMATION

1. This question paper consists of FOUR questions.
2. Answer ANY THREE questions of 75 marks each.
3. All diagrams are included in the ADDENDUM.
4. Leave a line open between sub-sections 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. Number your answers in the CENTRE of the line.
7. Do NOT write in the margins of the ANSWER BOOK.
8. Illustrate your answers with labelled diagrams, where possible.
9. Write neatly and legibly.

SECTION A: CLIMATE, WEATHER AND GEOMORPHOLOGY

QUESTION 1

1.1 Refer to FIGURE 1.1 that displays the influence of slope aspect. 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 number (1.1.1 – 1.1.7) in the ANSWER BOOK, for example 1.1.8 A.

1.1.1 Slope aspect refers to …

A the movement of air up slopes due to convection.
B the direction of the valley in relation to the sun's rays.
C a zone where the air is warmer than normal.
D a scientific study of weather and climate.

1.1.2 FIGURE 1.1 represents a landform in the … hemisphere.

A northern
B north-western
C southern
D western

1.1.3 Slope **E** represents the … slope.

A cooler / shady
B warmer / sunny
C cooler / sunny
D warmer / rainy

1.1.4 Slope **F** receives …

A more insolation because it faces the south pole.
B less insolation because it faces the equator.
C more insolation because it faces the equator.
D less insolation because it faces the south pole.

1.1.5 … slopes in South Africa, are longer in the shade during the day, especially in winter.

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

1.1.6 Areas falling in the shadow zone of the slope are heated only through …

A insolation.
B reflection.
C advection.
D convection.

1.1.7 Cabbage needs a lot of shade for maximum growth. The farmer will use this information to plant on slope … to ensure a higher crop yield.

A H
B E
C F
D G

(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	The volume of water passing a point in a certain amount of time	A	Turbulent flow
1.2.2	The flow of water over an uneven river bed	B	River discharge
1.2.3	The area that separates two or more drainage basins	C	Laminar flow
1.2.4	The lowest level to which a river can erode	D	Watershed
1.2.5	A balance between the rate of erosion and deposition in a river	E	Ungraded
1.2.6	The profile of a river from its source to its mouth	F	Graded river
1.2.7	A river profile that has multiple temporary erosion bases	G	Permanent erosion base
1.2.8	A stream that flows smoothly over an even river bed	H	Temporary erosion base
		I	Longitudinal profile

(8 x 1) (8)

1.3 Refer to FIGURE 1.3 showing an occlusion front in the mid-latitude cyclone.

1.3.1 Does the occlusion front occur in a mid-latitude cyclone or in a tropical cyclone? (1 x 1) (1)

1.3.2 During which season is the weather system depicted in FIGURE 1.3 dominant over South Africa? (1 x 1) (1)

1.3.3 Identify the front that is lifted from the surface during the occlusion stage as depicted in FIGURE 1.3. (1 x 2) (2)

1.3.4 Explain how the upliftment of the front lead to the formation of the clouds at **A.** (1 x 2) (2)

1.3.5 Describe the air movement in FIGURE 1.3 that resulted in the rise of the front identified in Question 1.3.3. (2 x 2) (4)

1.3.6 Explain why the inhabitants of the settlement at **B** will experience an increase in temperature as the occlusion system passes over. (2 x 2) (4)

1.4 FIGURE 1.4 shows berg winds and coastal low conditions on the east coast of South Africa.

1.4.1 Name TWO atmospheric conditions visible in FIGURE 1.4 that are necessary for berg winds to develop. (2 x 1) (2)

1.4.2 List the weather conditions that occur when berg winds reach the coast. (2 x 1) (2)

1.4.3 Explain why the weather conditions mentioned in Question 1.4.2 develop. (2 x 2) (4)

1.4.4 Compare in a paragraph of approximately EIGHT lines, the influence of the off-shore flow (**B**) of the berg winds and the on-shore flow (**A**) of the coastal low pressure on farming in this area. (4 x 2) (8)

1.5 Study FIGURE 1.5 which illustrates two different drainage patterns.

1.5.1 Identify the drainage patterns depicted in FIGURE 1.5 **A** and **B**. (2 x 1) (2)

1.5.2 Describe ONE difference in the tributaries of drainage pattern **A** and **B**. (2 x 1) (2)

1.5.3 Give a reason for drainage basin **A** having a lower drainage density. (1 x 2) (2)

1.5.4 Identify the stream order of the main stream at **X** in DIAGRAM **A**. (1 x 2) (2)

1.5.5 The streams within a drainage basin develop their patterns depending on the underlying rock structure, slope of the land and the precipitation in the area. Discuss these THREE components relating to the drainage pattern in FIGURE 1.5 **B**. (3 x 2) (6)

1.6 Refer to FIGURE 1.6 showing the process of river capture.

1.6.1 Define the term *river capture.* (1 x 1) (1)

1.6.2 Name the process that occurred at **A** that caused river capture to take place. (1 x 1) (1)

1.6.3 Suggest a reason for river **C** eroding through the watershed. (1 x 2) (2)

1.6.4 Explain why the river confluence at **D** will increase the chances of flooding. (2 x 2) (4)

1.6.5 In a paragraph of approximately EIGHT lines, explain why the settlement at **E** is prone to regular flooding and suggest sustainable methods that the municipality can implement to reduce the impact of flooding on the settlement. (4 x 2) (8)

[75]

QUESTION 2

2.1 The following statements are based on anti-cyclones. Choose the correct word(s) given in brackets. Write only the correct word(s) next to the question number (2.1.1 – 2.1.8) to make the statements correct, e.g. 2.1.9 middle.

2.1.1 A dominant Kalahari anti-cyclone is associated with (summer / winter) in South Africa.

2.1.2 The air circulation in the anti-cyclonic cells in the southern hemisphere is (clockwise / anti-clockwise).

2.1.3 The anti-cyclonic cells are characterised by (descending / ascending) air.

2.1.4 The anti-cyclonic cells move (southwards / northwards) in summer.

2.1.5 The (Kalahari / South Indian) anti-cyclone moves away from the coast during summer.

2.1.6 The influence of the Kalahari anti-cyclone is (weaker / stronger) during summer.

2.1.7 South Africa is situated in the (tropical / sub-tropical) anti-cyclonic zone.

2.1.8 Anticyclones are associated with (stable / unstable) weather. (8 x 1) (8)

2.2 Refer to FIGURE 2.2, which shows antecedent and superimposed drainage patterns. Indicate whether each of the statements below refers to DIAGRAM **A** OR DIAGRAM **B**. Write only **A** or **B** next to the question number (2.2.1 – 2.2.7) e.g. 2.2.8 A.

2.2.1 Diagram … illustrates an antecedent drainage pattern.

2.2.2 The diagram that illustrates a superimposed drainage pattern is …

2.2.3 Drainage pattern … developed where weathering and erosion removed the softer rock layers.

2.2.4 Diagram … represents a drainage pattern where the river is older than the surrounding landscape.

2.2.5 In diagram … the river eroded through resistant rocks.

2.2.6 Drainage pattern … developed before the existing geology.

2.2.7 The river in diagram … developed its course before the escarpment was elevated. (7 x 1) (7)

2.3 FIGURE 2.3 is a diagram of a tropical cyclone.

2.3.1 What does the name Catherine reveal about the number of cyclones that occurred in this season? (1 x 1) (1)

2.3.2 This tropical cyclone occurred in the southern hemisphere. Substantiate this statement with evidence from FIGURE 2.3. (2 x 2) (4)

2.3.3 Draw a labelled, free-hand cross-section indicating the air movement, cloud formation and rainfall in the tropical cyclone. (4 x 1) (4)

2.3.4 Will the dangerous semi-circle in the Southern Hemisphere develop at **C** or **D** as indicated in FIGURE 2.3? (1 x 1) (1)

2.3.5 Explain which weather conditions can be expected in the dangerous semi-circle. (3 x 2) (6)

2.4 Refer to FIGURE 2.4, based on urban and rural climates.

2.4.1 Hygroscopic nuclei occur over urban and rural areas. What are *hygroscopic nuclei*? (1 x 1) (1)

2.4.2 Identify ONE activity from FIGURE 2.4 that causes hygroscopic nuclei to develop. (1 x 1) (1)

2.4.3 Why does the urban area experience a warmer micro-climate as compared to the rural area? (2 x 2) (4)

2.4.4 Describe in a paragraph of approximately EIGHT lines how temperature and hygroscopic nuclei influence the amount and occurrence of precipitation over urban areas. (4 x 2) (8)

2.5 FIGURE 2.5 shows the Orange River catchment area.

2.5.1 Define the term *catchment area.* (1 x 1) (1)

2.5.2 How does the catchment area suggest that the Orange River is an exotic river? (1 x 1) (1)

2.5.3 The water in the Vaal Dam is highly polluted. Why will the pollution of the Vaal Dam have an influence on the settlement at **A**? (1 x 2) (2)

2.5.4 Explain how the pollution in the Vaal Dam will negatively affect the health of inhabitants of settlement **A**. (2 x 2) (4)

2.5.5 In a paragraph of approximately EIGHT lines, discuss sustainable management strategies that can be implemented to ensure a healthy catchment area in the Orange River basin. (4 x 2) (8)

2.6 FIGURE 2.6 illustrates the formation and usage of a floodplain and natural levees.

2.6.1 Define the term *natural levee.* (1 x 1) (1)

2.6.2 Will coarse sediment or fine sediment be deposited first when flooding occurs? (1 x 1) (1)

2.6.3 Account for the different layers of silt found on the floodplain. (2 x 2) (4)

2.6.4 Why is the deposition of silt positive for the farming community? (2 x 2) (4)

2.6.5 Although natural levees often prevent flooding, floods still occur in the event of great discharge. Discuss the negative influence of flooding on the farming community. (2 x 2) (4)

[75]

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

QUESTION 3

3.1 Refer to FIGURE 3.1. Match the descriptions below with settlements **A** or **B**. Choose the answer and write only the letter **A** or **B** next to the question number (3.1.1 – 3.1.8) in the ANSWER BOOK, for example 3.1.9 **A**.

3.1.1 The type of settlement that is mainly unifunctional

3.1.2 The settlement where the land value is high

3.1.3 These settlements include hamlets.

3.1.4 This settlement is associated with primary activities.

3.1.5 This settlement will occupy a high position in the urban hierarchical rank order.

3.1.6 The settlement that is associated with secondary and tertiary activities

3.1.7 A metropolis is an example of this type of settlement.

3.1.8 This settlement relies on a central place for tertiary services. (8 x 1) (8)

3.2 Study the map in FIGURE 3.2 which shows the FOUR core industrial areas of South Africa, represented by the letters **A, B, C** and **D.**

3.2.1 Mention the term used to describe an over-concentration of industries in a few core areas.

3.2.2 Name the industrial area **A** that represents the economic hub of South Africa.

3.2.3 In which industrial area is the textile industry the dominant secondary activity in the economy?

3.2.4 What promotes export and industrial development in area **B**?

3.2.5 Which letter on the map represents the industrial region that deals mainly with motor vehicles and related motor vehicle accessories?

3.2.6 Name the industrial area where water availability will most likely be a limiting factor in industrial development.

3.2.7 Name the industrial region where fish and fruit are the raw materials for many secondary industries. (7 x 1) (7)

3.3 Refer to FIGURE 3.3 showing a rural settlement.

3.3.1 Identify the settlement pattern displayed in FIGURE 3.3. (1 x 1) (1)

3.3.2 Mention ONE advantage for farmers living in such a settlement. (Answer to Question 3.3.1). (1 x 2) (2)

3.3.3 State ONE physical factor that could have influenced the site of this settlement. (1 x 2) (2)

3.3.4 Many inhabitants in this valley choose to move to urban areas. Explain ONE economic push factor that will influence their decision. (1 x 2) (2)

3.3.5 Write a paragraph of approximately EIGHT lines in which you suggest sustainable measures to attract tourists to this village to prevent rural depopulation of the farming community. (4 x 2) (8)

3.4 Study FIGURE 3.4 on migration and urbanisation in South Africa.

3.4.1 What percentage of South Africans live in urban areas? (1 x 1) (1)

3.4.2 Calculate the percentage of the population in Gauteng that resides (lives) in rural areas. (1 x 2) (2)

3.4.3 Describe TWO possible economic reasons why Gauteng has the largest number of migrants into the province. (2 x 2) (4)

3.4.4 Explain how rapid urbanisation may lead to housing problems for the migrants. (2 x 2) (4)

3.4.5 Recommend TWO strategies that the government could implement to reduce the housing problems associated with the large influx of migrants into cities. (2 x 2) (4)

3.5 Study the article on mining in FIGURE 3.5.

3.5.1 For what does the abbreviation *GDP* stand? (1 x 1) (1)

3.5.2 What is the contribution of gold mining to the GDP of South Africa? (1 x 1) (1)

3.5.3 Identify TWO national factors in the article that has resulted in the decline of the mining industry's contribution to the GDP. (2 x 1) (2)

3.5.4 Calculate the number of jobs lost in the mining industry between 1994 and 2018. (1 x 2) (2)

3.5.5 Describe how protests influenced the availability of jobs in the mining industry. (2 x 2) (4)

3.5.6 Explain how the decrease in the contribution of the mining industry to GDP will affect economic development in South Africa. (2 x 2) (4)

3.6 Study the article on the Saldanha Bay IDZ in FIGURE 3.6.

3.6.1 In which South African province is the Saldanha Bay IDZ situated? (1 x 1) (1)

3.6.2 According to the article, what is the main reason for limited economic growth in the region? (1 x 1) (1)

3.6.3 Name TWO types of infrastructure that promote industries at the Saldanha Bay IDZ. (2 x 1) (2)

3.6.4 Explain why government located IDZs away from major metropolitan areas. (2 x 2) (4)

3.6.5 The Saldanha Bay IDZ is situated in close proximity to Parker's Town holiday resort. In a paragraph of approximately EIGHT lines, explain how the Saldanha Bay IDZ will have a positive impact on the economic development of these resort towns. (4 x 2) (8)

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QUESTION 4

4.1 Refer to FIGURE 4.1 which shows urban land use zones. Match the statements below with the labels on the diagram. Write the label next to the question number (4.1.1 – 4.1.7) in the ANSWER BOOK, for example 4.1.8 Greenbelt.

4.1.1 Some buildings in this zone are constructed of discarded / salvaged material.

4.1.2 This is a zone of mixed functions.

4.1.3 The highest land values of the city are found in this zone.

4.1.4 This zone is characterized by neglected buildings.

4.1.5 The highest pollution levels in the city are recorded in this zone.

4.1.6 Graveyards or airports are often situated in these zones.

4.1.7 The zone where people with higher incomes prefer to reside (live).

(7 x 1) (7)

4.2 Choose the term from **COLUMN B** that matches the description in **COLUMN A.** Write only the letter (A – I) next to the question number (4.2.1 – 4.2.8) in the ANSWER BOOK, for example 4.2.9 J.

COLUMN A		COLUMN B	
4.2.1	The economic classification of the agricultural sector	A	Trade
4.2.2	The processing of goods to increase their economic value	B	Gross domestic product
4.2.3	Products that are purchased from other countries	C	Quaternary
4.2.4	The economic sector that includes health, finance and other services	D	Primary
4.2.5	The exchange of goods and services between countries for monetary gain	E	Gross national product
4.2.6	Taxes placed on imported goods	F	Tertiary
4.2.7	The total value of goods and services produced in a country in one calendar year	G	Secondary
4.2.8	The sector associated with research and development	H	Tariffs
		I	Import
			(8 x 1) (8)

4.3 Study FIGURE 4.3, showing urban expansion.

4.3.1 What is meant by *urban expansion*? (1 x 1) (1)

4.3.2 Name the geographical process when people move from area **B** to area **A**. (1 x 1) (1)

4.3.3 Account for the concentration of buildings in the CBD at **A**. (1 x 2) (2)

4.3.4 With regard to property values, explain why the rural residents at **B** would wait for the city to expand. (1 x 2) (2)

4.3.5 Explain TWO problems in the CBD that would result in businesses choosing to move to the outskirts of the city. (2 x 2) (4)

4.3.6 Predict TWO environmental consequences for the rural area that may occur as a result of urban expansion. (2 x 2) (4)

4.4 Study FIGURE 4.4, a cartoon showing traffic congestion.

4.4.1 Define the term *traffic congestion*. (1 x 1) (1)

4.4.2 Mention the type of pollution caused by traffic congestion as shown in the diagram. (1 x 1) (1)

4.4.3 Describe ONE effect that this type of pollution has on the physical health of commuters. (1 x 2) (2)

4.4.4 (a) Describe the action that was taken in an attempt to reduce traffic congestion in this city. (1 x 2) (2)

(b) Comment on the success of the action taken. (Answer to Question 4.4 (a)) (1 x 2) (2)

4.4.5 In a paragraph of approximately EIGHT lines, discuss other solutions that can be implemented to reduce traffic congestion in a city. (4 x 2) (8)

4.5 Study FIGURE 4.5 which is a photograph of an informal business located close to a shopping complex.

4.5.1 Define the concept *informal sector.* (1 x 1) (1)

4.5.2 Suggest ONE reason why people would choose to support these informal traders instead of the nearby formal businesses in the shopping complex. (1 x 2) (2)

4.5.3 Describe TWO risks from FIGURE 4.5 to which the informal traders could be exposed. (2 x 2) (4)

4.5.4 Write a paragraph of approximately EIGHT lines proposing measures that local authorities could implement to improve the working conditions of informal traders. (4 x 2) (8)

4.6 Study the article on food security in South Africa in FIGURE 4.6.

4.6.1 Define the term *food security.* (1 x 1) (1)

4.6.2 According to the article, which TWO environmental factors threaten South Africa's food security? (2 x 1) (2)

4.6.3 Why is maize considered a critical crop in ensuring South Africa's food security? (1 x 2) (2)

4.6.4 Why are the small-scale farmers more susceptible to (affected by) negative environmental conditions? (1 x 2) (2)

4.6.5 Suggest TWO ways in which the South African government can help small-scale maize farmers to increase crop production in order to ensure food security. (2 x 2) (4)

4.6.6 Describe TWO ways in which the increase in crop production will create a positive impact on South Africa's economy. (2 x 2) (4)

[75]

TOTAL: 225

END