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GRADE 12

GEOGRAPHY P1

FEBRUARY/MARCH 2018

MARKS: 225

TIME: 3 hours

This question paper consists of 14 pages and a 10-page annexure.

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 ANNEXURE.
4. Leave a line between 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. Number the answers in the centre of the line.
8. Do NOT write in the margins of the ANSWER BOOK.
9. Draw fully labelled diagrams when instructed to do so.
10. Answer in FULL SENTENCES, except where you have to state, name, identify or list.
11. Write neatly and legibly.

SECTION A: CLIMATE, WEATHER AND GEOMORPHOLOGY

Answer at least ONE question in this section. If you answer ONE question in SECTION A, you must answer TWO questions in SECTION B.

QUESTION 1

- 1.1 Study FIGURE 1.1 which is an extract from a synoptic weather map of South Africa.
- 1.1.1 Over which ocean will pressure system **A** be found?
 - 1.1.2 Indicate the weather feature that is experienced by the elongated isobars of pressure cell **A**.
 - 1.1.3 State the air pressure in area **C**.
 - 1.1.4 Name the high-pressure system at **C**.
 - 1.1.5 Is the weather associated with pressure cell **A** stable or unstable?
 - 1.1.6 Describe the circulation of air at weather system **D** as it rises.
 - 1.1.7 What is the air temperature at weather station **F**?
 - 1.1.8 Does this synoptic weather map depict summer or winter conditions? (8 x 1) (8)
- 1.2 Study the drainage basin in FIGURE 1.2 and match the letters **A** to **H** to EACH description below.
- 1.2.1 High-lying area that separates two drainage basins
 - 1.2.2 The upper reaches or source of a river
 - 1.2.3 A second-order stream
 - 1.2.4 Where two or more streams join, it forms a confluence
 - 1.2.5 A tributary is a single stream that joins a main river
 - 1.2.6 The mouth of a river forms where it enters the sea
 - 1.2.7 Water that seeps underground and forms the base flow of a river (7 x 1) (7)

- 1.3 Refer to FIGURE 1.3 showing the path of a tropical cyclone.
- 1.3.1 In which general direction do tropical cyclones move? (1 x 1) (1)
- 1.3.2 What evidence suggests that this tropical cyclone is found in the Southern Hemisphere? (2 x 1) (2)
- 1.3.3 What causes the dangerous quadrant/semicircle to form? (1 x 2) (2)
- 1.3.4 Give ONE reason for the possible re-curvature (change of direction) of the tropical cyclone. (1 x 2) (2)
- 1.3.5 In a paragraph of approximately EIGHT lines, outline the associated weather with the dangerous quadrant/semicircle and its likely impact on coastal areas. (4 x 2) (8)
- 1.4 FIGURE 1.4 shows a katabatic wind within a valley.
- 1.4.1 Does this wind occur during the day or at night? (1 x 1) (1)
- 1.4.2 What role does terrestrial radiation play in the formation of katabatic winds? (1 x 2) (2)
- 1.4.3 Why are katabatic winds associated with temperature inversions? (2 x 2) (4)
- 1.4.4 Account for the position of radiation fog in the valley. (2 x 2) (4)
- 1.4.5 With reference to the photograph in FIGURE 1.4, explain why a developer is more likely to build a holiday resort halfway up the valley slope. (2 x 2) (4)
- 1.5 Refer to FIGURE 1.5 which shows a floodplain after rejuvenation.
- 1.5.1 What is a *floodplain*? (1 x 1) (1)
- 1.5.2 What evidence suggests that rejuvenation has taken place? (1 x 1) (1)
- 1.5.3 In which course of the river is the floodplain located in the sketch? (1 x 1) (1)
- 1.5.4 Floodplains are generally suitable for the cultivation of crops.
- (a) Why are floodplains suitable areas for the cultivation of crops? (2 x 2) (4)
- (b) Explain, in a paragraph of approximately EIGHT lines, the negative impact of rejuvenation on farming activities in the illustrated landscape. (4 x 2) (8)

- 1.6 Study FIGURE 1.6 which shows the longitudinal profile of a graded river.
- 1.6.1 What is meant by the term *base level* of a river? (1 x 1) (1)
- 1.6.2 Why is the sea regarded as a permanent base level? (1 x 2) (2)
- 1.6.3 What evidence in FIGURE 1.6 indicates that this river is graded? (1 x 2) (2)
- 1.6.4 Why will a drop in sea level change the grading of the river? (2 x 2) (4)
- 1.6.5 Draw a simple longitudinal profile to show the impact of the drop in sea level, mentioned in QUESTION 1.6.4, on the shape of the longitudinal profile. (1 x 2) (2)
- 1.6.6 Explain how the interaction between erosion and deposition in the upper and lower courses of a river help to maintain a graded profile. (2 x 2) (4)
- [75]**

QUESTION 2

- 2.1 FIGURE 2.1 shows a coastal low pressure cell (**L**) associated with travelling disturbances.
- 2.1.1 Use the isobars to prove that **L** is a low-pressure system.
- 2.1.2 Where does low-pressure cell **L** originate?
- 2.1.3 In which direction does low-pressure cell **L** travel between Langebaan and Cape Town?
- 2.1.4 What type of precipitation is associated with low-pressure cell **L** along the West Coast?
- 2.1.5 Name the air temperature associated with the onshore flow of low-pressure cell **L** at Langebaan.
- 2.1.6 How does air rotate around low-pressure cell **L**?
- 2.1.7 With which travelling disturbance is the hot, dry north-easterly wind associated? (7 x 1) (7)

2.2 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 (2.2.1–2.2.8) in the ANSWER BOOK, for example 2.2.9 A.

2.2.1 Water flowing downslope over land is known as ... flow.

- A channel
- B sheet
- C turbulent
- D base

2.2.2 The raised banks of a river due to continuous flooding and deposition is a/an ...

- A delta.
- B alluvial fan.
- C levee.
- D meander scar.

2.2.3 Underground water that feeds into a river is known as ...

- A laminar flow.
- B infiltration.
- C base flow.
- D run-off.

2.2.4 A river that flows all year because the river bed cuts into the water table is a/an ... river.

- A exotic
- B permanent
- C periodic
- D episodic

2.2.5 A ... drainage pattern develops in the valleys between parallel ridges or mountain ranges.

- A trellis
- B rock-controlled
- C rectangular
- D radial

2.2.6 The arrangement of streams in a drainage basin is known as the ...

- A drainage pattern.
- B stream order.
- C stream density.
- D stream profile.

2.2.7 Where water plunges over a vertical cliff, it forms a ...

- A rapid.
- B gorge.
- C waterfall.
- D levee.

2.2.8 Where a stream channel appears to be breaking up into many smaller streams, a ... stream channel pattern develops.

- A meandering
- B rock-controlled
- C braided
- D dendritic

(8 x 1) (8)

2.3 Study FIGURE 2.3, a cross-section of a mid-latitude cyclone.

2.3.1 Name front **A**. (1 x 1) (1)

2.3.2 (a) Name cloud type **B**. (1 x 1) (1)

(b) Account for the type of cloud at **B** which is associated with this weather system. (1 x 2) (2)

2.3.3 Why does the warm front (**D**) seldom influence the weather of South Africa? (1 x 2) (2)

2.3.4 Tabulate TWO differences between a mid-latitude cyclone and a tropical cyclone regarding place of origin and the major wind belt steering it. (2 x 2) (4)

2.3.5 Explain why the next stage of development of this mid-latitude cyclone will be a warm front occlusion. (2 x 2) (4)

2.4 Refer to FIGURE 2.4, based on inland temperature inversion.

2.4.1 What is *temperature inversion*? (1 x 1) (1)

2.4.2 Which season is represented by the position of the inversion layer in sketch **A**? (1 x 1) (1)

2.4.3 Draw a simple cross-section which will show the position of the temperature inversion in sketch **B**. (2 x 1) (2)

2.4.4 Explain why the position of the inversion layer varies between winter and summer. (2 x 2) (4)

2.4.5 In a paragraph of approximately EIGHT lines, evaluate the influence of the position of the inversion layer in sketch **A** on the climate and how it impacts negatively on economic activities in the interior of South Africa. (4 x 2) (8)

2.5 Refer to FIGURE 2.5 on drainage density.

2.5.1 Define the term *drainage density*. (1 x 1) (1)

2.5.2 What evidence indicates that **A** has a higher drainage density than **B**? (1 x 1) (1)

2.5.3 Determine the stream order at point **X**. (1 x 2) (2)

2.5.4 Why will the stream order be higher at point **Y**? (1 x 2) (2)

2.5.5 Explain the influence of vegetation on drainage density. (2 x 2) (4)

2.5.6 As urban development takes place, the drainage density of the surrounding natural environment will increase. Explain why this is the case. (2 x 2) (4)

2.6 Refer to FIGURE 2.6, based on a river system.

2.6.1 Define the term *river system*. (1 x 1) (1)

2.6.2 What purpose does the interfluvium at **A** serve in this river system? (1 x 1) (1)

2.6.3 What evidence suggests that **B** is a dendritic drainage pattern? (1 x 2) (2)

2.6.4 State TWO characteristics of the underlying rocks in area **B**. (2 x 2) (4)

2.6.5 Write a paragraph of approximately EIGHT lines in which you explain why a meandering stream channel pattern is usually found in the lower course of a river system. (4 x 2) (8)
[75]

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

Answer at least ONE question in this section. If you answer ONE question in SECTION B, you must answer TWO questions in SECTION A.

QUESTION 3

- 3.1 Refer to FIGURE 3.1 which shows the urban profile of a city.
- 3.1.1 Name land-use zone **A**.
 - 3.1.2 Name land-use zone **F**.
 - 3.1.3 Which land use-zone occupies the most space?
 - 3.1.4 Is industrial area **B** a light or heavy industrial zone?
 - 3.1.5 Which ONE of the two residential areas (**C** or **D**) is most likely the high-income area?
 - 3.1.6 Identify land-use zone **E**.
 - 3.1.7 Which land-use zone has the highest land value? (7 x 1) (7)
- 3.2 Choose the correct word(s) from those given in brackets. Write only the word(s) next to the question number (3.2.1–3.2.8) in the ANSWER BOOK.
- 3.2.1 The extraction of raw materials is a (primary/secondary) economic activity.
 - 3.2.2 The South African economy provides services and human skills as a commodity within the (secondary/tertiary) sector.
 - 3.2.3 The processing of raw materials is found in the (secondary/tertiary) sector.
 - 3.2.4 The (tertiary/quaternary) sector of the South African economy is mainly involved in high-tech research activities.
 - 3.2.5 (Trade quotas/Trade tariffs) are regulations that protect local farmers against cheaper import prices.
 - 3.2.6 (Large-scale/Small-scale) farming is predominantly commercial in nature in South Africa.
 - 3.2.7 (Maize/Wheat) is the biggest large-scale crop grown in South Africa.
 - 3.2.8 South Africa has the world's largest resources of (gold/manganese). (8 x 1) (8)

- 3.3 Before selecting a site for his/her farm, a farmer will take various site and situation factors into account.
- 3.3.1 Clearly distinguish between the terms *site* and *situation*. (2 x 1) (2)
- 3.3.2 Water can be both an attraction and a deterrent (to be avoided) when selecting a site for a farmstead. Explain this statement. (2 x 2) (4)
- 3.3.3 Name and discuss ONE other physical factor that a farmer will consider when selecting a site for a farm. (2 x 2) (4)
- 3.3.4 Discuss the role of market accessibility as a situation factor when selecting a site for a farm. (2 x 2) (4)
- 3.4 Study FIGURE 3.4 which shows the trend of rural population in South Africa from 2004 to 2015.
- 3.4.1 Comment on the trend from 2004 to 2015 in the graph regarding people living in rural areas in South Africa. (1 x 1) (1)
- 3.4.2 What percentage of South Africans lived in rural areas in 2015? (1 x 1) (1)
- 3.4.3 Give a projected percentage for the South African rural population in 2018. (1 x 2) (2)
- 3.4.4 What impact will the trend in QUESTION 3.4.1 have on rural areas in the future? (2 x 2) (4)
- 3.4.5 If the trend in QUESTION 3.4.1 continues, South Africa might head for food insecurity in the near future. In a paragraph of approximately EIGHT lines, outline sustainable measures to ensure continued food security. (4 x 2) (8)
- 3.5 Refer to FIGURE 3.5 showing statistics relating to Western Cape export products.
- 3.5.1 Name ONE product in FIGURE 3.5 representing the primary and secondary economic sectors. (2 x 1) (2)
- 3.5.2 Which primary product shows an increase in value after it has been processed? (1 x 2) (2)
- 3.5.3 Calculate the total revenue from the export of fresh fruit in the Western Cape. (1 x 2) (2)
- 3.5.4 Why is fruit processing such a major industry in the South-western Cape? (2 x 2) (4)
- 3.5.5 Discuss TWO factors that support the export of products from the Western Cape. (2 x 2) (4)

3.6 Study FIGURE 3.6, a photograph of small-scale farming.

- | | | | |
|-------|--|---------|-------------|
| 3.6.1 | Define the term <i>small-scale farming</i> . | (1 x 1) | (1) |
| 3.6.2 | What evidence in the photograph suggests that these are small-scale farmers? | (1 x 1) | (1) |
| 3.6.3 | Why can one say that these small-scale farmers are farming the land intensively? | (1 x 2) | (2) |
| 3.6.4 | The profit margin of the farmers in the photograph in FIGURE 2.6 will be low. Explain this statement. | (2 x 2) | (4) |
| 3.6.5 | In a paragraph of approximately EIGHT lines, outline the problems experienced by small-scale farmers, as seen in the photograph. | (4 x 2) | (8) |
| | | | [75] |

QUESTION 4

- 4.1 Choose a term in COLUMN B that matches the description in COLUMN A. Write only the letter (A–H) next to the question number (4.1.1–4.1.7) in the ANSWER BOOK, for example 4.1.8 J.

COLUMN A		COLUMN B	
4.1.1	Rural settlements with one main function	A	central place
4.1.2	A settlement that consists of a few buildings occupied by one family	B	nucleated settlement
4.1.3	A settlement pattern where buildings are placed far apart from each other	C	linear
4.1.4	Farm houses located along a road	D	crossroad settlement
4.1.5	A settlement that provides for the urban needs of the surrounding rural community	E	unifunctional
4.1.6	A settlement that develops at a natural passage in a mountain chain	F	dispersed
4.1.7	A settlement pattern influenced by the way in which roads meet	G	isolated farmstead
		H	gap town

(7 x 1)

(7)

- 4.2 Choose the correct word(s) from those given in brackets. Write only the word(s) next to the question number (4.21.1–4.2.8) in the ANSWER BOOK.
- 4.2.1 A concentration of activities, usually industries close to one another, is known as (agglomeration/fair trade).
- 4.2.2 (Food security/Food insecurity) is when people do not fear starvation, because they have access to enough nutritious food, as there is a balance between supply and demand.
- 4.2.3 The total value of goods and services produced in a country in one year is known as the (gross national product/gross domestic product).
- 4.2.4 (IDZs/SDIs) are industrial estates which aim to encourage economic growth by attracting new investment for industrial development and increasing exports.
- 4.2.5 (Deciduous fruit/Sugar cane) is the dominant crop grown in KwaZulu-Natal.
- 4.2.6 (Socio-economic injustice/Land restitution) is when everybody does not have equal access to facilities, resources and services within a particular place.
- 4.2.7 The exchange of goods and services between countries for monetary gain is known as (tariffs/trade).
- 4.2.8 (Industrial centralisation/Industrial decentralisation) is the process when industries are located on the periphery or in rural areas away from the core urban areas. (8 x 1) (8)
- 4.3 Refer to FIGURE 4.3, an article about land reform.
- 4.3.1 Define the term *land reform*. (1 x 1) (1)
- 4.3.2 According to the article, why has the land reform programme failed? (1 x 1) (1)
- 4.3.3 Briefly discuss TWO factors that explain why land reform in South Africa is necessary. (2 x 2) (4)
- 4.3.4 In a paragraph of approximately EIGHT lines, discuss methods that the government can put in place to provide support to the people resettled on the land once land reform has taken place. (4 x 2) (8)

4.4	FIGURE 4.4 shows injustices associated with urbanisation.		
4.4.1	Define the term <i>injustice</i> .	(1 x 1)	(1)
4.4.2	What type of injustice is depicted in the cartoon?	(1 x 1)	(1)
4.4.3	What evidence in the cartoon indicates that the poor are being unfairly treated?	(2 x 1)	(2)
4.4.4	Discuss what is meant by the phrase, 'the POOR ... get their waste products'.	(1 x 2)	(2)
4.4.5	Explain the impact of waste products on the health and environmental well-being of the poor.	(2 x 2)	(4)
4.4.6	Suggest THREE ways in which to resolve the illustrated injustice in urban areas sustainably.	(3 x 2)	(6)
4.5	In terms of the contribution of mining to a country's GDP, South Africa is ranked fifth in the world.		
4.5.1	Why is mining considered to be a primary activity?	(1 x 1)	(1)
4.5.2	Which mineral contributes the most to South Africa's GDP?	(1 x 1)	(1)
4.5.3	Discuss TWO physical factors that promote mining in South Africa.	(2 x 2)	(4)
4.5.4	Suggest ONE way in which South Africa can address labour issues, in order to improve its world ranking.	(1 x 2)	(2)
4.5.5	In a paragraph of approximately EIGHT lines, explain the economic importance of mining for infrastructure and industrial development in South Africa.	(4 x 2)	(8)
4.6	Refer to FIGURE 4.6 showing contributions to South Africa's GDP.		
4.6.1	Which economic activity in FIGURE 4.6 contributed the most to South Africa's GDP?	(1 x 1)	(1)
4.6.2	Which economic sector contributed the most to South Africa's GDP?	(1 x 1)	(1)
4.6.3	Explain the low contribution of the primary economic sector to the South African economy.	(2 x 2)	(4)
4.6.4	Why is it important to strengthen the secondary sector in South Africa?	(2 x 2)	(4)
4.6.5	Account for the low contribution made by electricity, gas and water to the tertiary sector.	(2 x 2)	(4)
			[75]
GRAND TOTAL:			225