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GRADE 12

GEOGRAPHY P1

NOVEMBER 2019

MARKS: 225

TIME: 3 hours

This question paper consists of 16 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 the 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 when you have to state, name, identify or list.
11. Write neatly and legibly.

SECTION A: CLIMATE, WEATHER AND GEOMORPHOLOGY**QUESTION 1**

- 1.1 Give ONE term for each of the following descriptions by choosing a term from the list below. Write only the term next to the question numbers (1.1.1 to 1.1.7) in the ANSWER BOOK, e.g. 1.1.8 climate.

radiation fog; katabatic; temperature inversion; anabatic;
smog; thermal belt; frost; aspect

- 1.1.1 Zone where a warm air mass is trapped between colder air masses
- 1.1.2 A mixture of smoke and fog
- 1.1.3 The direction in which the slope faces in relation to the sun's rays
- 1.1.4 Forms when calm conditions and clear skies occur in a valley
- 1.1.5 Forms on the valley floor when the air temperature is below freezing point
- 1.1.6 Type of wind that results from air sinking down the valley slope at night
- 1.1.7 Type of wind that results from air moving up the valley slope during the day (7 x 1) (7)

- 1.2 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 numbers (1.2.1 to 1.2.8) in the ANSWER BOOK, e.g. 1.2.9 D.

- 1.2.1 The cross-profile of a river shows the shape of the river valley from ...
- A source to mouth.
B concave to convex.
C bank to bank.
D width to depth.
- 1.2.2 The shape of the valley in the upper course of a river is ...
- A V-shaped.
B wide.
C gentle.
D U-shaped.

- 1.2.3 Deposition is the dominant process in the ... of the river.
- A upper course
 - B middle course
 - C lower course
 - D young course
- 1.2.4 The volume of water in the middle course of the river is likely to increase because of ...
- A lateral erosion.
 - B tributaries joining the river.
 - C downward erosion.
 - D no tributaries joining the river.
- 1.2.5 Rapids are most likely to develop in the ...
- A lower course.
 - B middle course and lower course.
 - C upper course.
 - D upper course and lower course.
- 1.2.6 The stream flow (discharge) of a river in the upper course is generally a ... flow.
- A layered
 - B laminar
 - C smooth
 - D turbulent
- 1.2.7 An oxbow lake can be formed from a ... in the lower course of the river.
- A slip-off slope
 - B cut-off slope
 - C meander loop
 - D meander scar
- 1.2.8 The processes that a river undergoes from the upper course to the lower course are ...
- A erosion, transportation and deposition.
 - B transportation, erosion and deposition.
 - C erosion, deposition and transportation.
 - D deposition, erosion and transportation.
- (8 x 1) (8)

- 1.3 FIGURE 1.3 is based on a case study of a tropical cyclone that recently affected Southern Africa.
- 1.3.1 Refer to the article. With what can you compare this intense tropical cyclone? (1 x 1) (1)
- 1.3.2 Name ONE condition that was necessary for the formation of tropical cyclone Idai. (1 x 1) (1)
- 1.3.3 Refer to the image and determine the expected wind speed with which tropical cyclone Idai will reach the coast of Mozambique. (1 x 1) (1)
- 1.3.4 Why will the wind speed decrease as you move further from the eye? (1 x 2) (2)
- 1.3.5 Explain how the dangerous semi-circle of tropical cyclone Idai originated (developed). (1 x 2) (2)
- 1.3.6 In a paragraph of approximately EIGHT lines, suggest the negative impact that high wind speeds will have on the coastal areas of Mozambique. (4 x 2) (8)
- 1.4 Study FIGURE 1.4 based on South African berg winds.
- 1.4.1 Name the season in which South African berg winds develop. (1 x 1) (1)
- 1.4.2 Give TWO pieces of evidence in FIGURE 1.4 to support your answer to QUESTION 1.4.1. (2 x 1) (2)
- 1.4.3 (a) Why are berg winds described as being dry? (1 x 2) (2)
- (b) What causes the South African berg wind to be a warm offshore wind? (1 x 2) (2)
- (c) How does a steep pressure gradient influence South African berg winds? (2 x 2) (4)
- 1.4.4 Why are emergency services (fire brigades, ambulances and traffic police) placed on high alert (standby) when berg wind conditions occur? (2 x 2) (4)

1.5 Study FIGURE 1.5 based on river capture (stream piracy).

- 1.5.1 Define the term *river capture*. (1 x 1) (1)
- 1.5.2 Describe the erosion associated with the process of river capture in sketch **A**. (1 x 1) (1)
- 1.5.3 Identify features **L** and **M** that result from river capture. (2 x 1) (2)
- 1.5.4 Match the terms *captor stream* and *misfit stream* to streams **J** and **K** in diagram **B**. (2 x 1) (2)
- 1.5.5 (a) What is a *watershed*? (1 x 1) (1)
- (b) How can the process of river capture cause the watershed to change its position? (1 x 2) (2)
- (c) What effect will river capture have on the volume of water in stream **K**? (1 x 2) (2)
- 1.5.6 What can the local farming community around stream **J** do to continue with their daily activities after river capture has taken place? (2 x 2) (4)

1.6 Refer to FIGURE 1.6 showing catchment and river management.

- 1.6.1 What is the main source of waste water? (1 x 1) (1)
- 1.6.2 Discuss how the removal of the natural vegetation for human activities increased the eroded soil and sediments in the river. (1 x 2) (2)
- 1.6.3 Explain how run-off from both settlements and cultivated land decreases the quality of water of a river. (2 x 2) (4)
- 1.6.4 In a paragraph of approximately EIGHT lines, discuss why sustainable river management is important for all sectors of the economy. (4 x 2) (8)

[75]

QUESTION 2

2.1 Various options are provided as possible answers to the following questions based on the cross-section of the mid-latitude cyclone in FIGURE 2.1. Choose the answer and write down only the letter (A–D) next to the question numbers (2.1.1 to 2.1.8), e.g. 2.1.9 D.

2.1.1 The general direction of movement of the mid-latitude cyclone in the Southern Hemisphere is ... -wards.

- A north
- B west
- C east
- D south

2.1.2 Identify cloud **A** that is associated with the warm front:

- A Stratus
- B Cumulus
- C Nimbostratus
- D Cumulonimbus

2.1.3 The area at **B** is referred to as the ...

- A warm sector.
- B cold sector.
- C polar front.
- D apex.

2.1.4 The type of cloud at **C** is ...

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

2.1.5 The gradient at **D** can be described as ...

- A steep.
- B gentle.
- C weak.
- D vertical.

2.1.6 The ... front is found at **D**.

- A polar
- B cold
- C occlusion
- D warm

2.1.7 The more active and faster moving front is the ...

- A polar front.
- B cold front.
- C warm front.
- D moisture front.

2.1.8 The type of rainfall at **E** is/are ...

- A light showers.
- B frontal rain.
- C orographic rain.
- D convectional rain.

(8 x 1) (8)

2.2 Give ONE term for each of the following descriptions by choosing a term from the list below. Write only the term next to the question numbers (2.2.1 to 2.2.7) in the ANSWER BOOK, e.g. 2.2.8 turbulent flow.

water table; river source;	confluence; interfluvium;	river mouth; surface run-off;	drainage basin; ground water
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2.2.1 Point where the river enters the sea

2.2.2 Water that has infiltrated the soil

2.2.3 Area drained by a main river and its tributaries

2.2.4 Point where a river originates

2.2.5 The upper level of the saturated zone

2.2.6 Water flowing overland after it has rained

2.2.7 Point where a tributary meets the main river

(7 x 1) (7)

- 2.3 Study FIGURE 2.3 showing a synoptic weather map.
- 2.3.1 What are the lines representing air pressure on the map called? (1 x 1) (1)
- 2.3.2 Give TWO pieces of evidence that the season depicted is summer. (2 x 1) (2)
- 2.3.3 State the general movement of air pressure cell **A**. (1 x 1) (1)
- 2.3.4 Refer to air pressure cell **B**.
- (a) Name this pressure cell. (1 x 1) (1)
- (b) Explain how air pressure cell **B** influences the summer rainfall pattern in the interior of South Africa. (2 x 2) (4)
- 2.3.5 Refer to the weather station model at **C**.
- (a) Give evidence from weather station model **C** that suggests that there is little possibility of rain. (1 x 2) (2)
- (b) Account for the air temperature and wind direction recorded at weather station **C**. (2 x 2) (4)
- 2.4 Refer to FIGURE 2.4 based on the differences between rural and urban climates.
- 2.4.1 Will **A** or **B** generally experience lower wind speeds? (1 x 1) (1)
- 2.4.2 What evidence in the photograph indicates that **A** experiences higher evaporation rates than **B**? (1 x 2) (2)
- 2.4.3 Why does **B** experience more frequent rainfall than **A**? (1 x 2) (2)
- 2.4.4 Explain how the geometric shape of the buildings in the city causes a greater absorption of heat. (1 x 2) (2)
- 2.4.5 In a paragraph of approximately EIGHT lines, discuss how artificial surfaces and urban activities contribute to higher temperature recordings in **B**. (4 x 2) (8)

2.5 Refer to FIGURE 2.5 showing river profiles.

- | | | | |
|-------|--|---------|-----|
| 2.5.1 | Define the term <i>longitudinal profile</i> . | (1 x 1) | (1) |
| 2.5.2 | Describe the shape of longitudinal profile A . | (1 x 2) | (2) |
| 2.5.3 | Identify an ultimate (permanent) and temporary base level of erosion in the diagram. | (2 x 1) | (2) |
| 2.5.4 | How will the deposition of sediments influence the capacity of the dam? | (1 x 2) | (2) |
| 2.5.5 | Describe the difference in grade between the new longitudinal profile and the original longitudinal profile. | (2 x 2) | (4) |
| 2.5.6 | Explain the impact of the presence of the dam on erosion and deposition processes. | (2 x 2) | (4) |

2.6 Study FIGURE 2.6 based on fluvial landforms in the lower course of the river.

- | | | | |
|-------|---|---------|-----|
| 2.6.1 | Name fluvial feature A . | (1 x 1) | (1) |
| 2.6.2 | Give a reason for the formation of feature A . | (1 x 2) | (2) |
| 2.6.3 | Explain why the undercut slope at B is steep. | (1 x 2) | (2) |
| 2.6.4 | Feature C is a natural levee. Why is this fluvial landform commonly found in the lower course of the river? | (1 x 2) | (2) |
| 2.6.5 | In a paragraph of approximately EIGHT lines, explain the positive and negative impact of levees on farming on the floodplain. | (4 x 2) | (8) |
- [75]**

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

QUESTION 3

- 3.1 Choose a term from COLUMN B that matches the description in COLUMN A. Write only the letter (A–I) next to the question numbers (3.1.1 to 3.1.8) in the ANSWER BOOK, e.g. 3.1.9 J.

COLUMN A		COLUMN B	
3.1.1	Ranking of urban settlements from smallest to largest	A	sphere of influence
		B	high-order goods
3.1.2	Settlement that provides goods and services to the surrounding rural population	C	urban hierarchy
		D	low-order goods
3.1.3	Area from where urban settlements draw their customers	E	central place
		F	low-order centres
3.1.4	Minimum number of customers needed to make a business profitable	G	high-order centres
		H	threshold population
3.1.5	The maximum distance that people travel to buy goods and services	I	range
3.1.6	Type of goods that are purchased frequently		
3.1.7	Few services and functions are available		
3.1.8	Goods and services that are not purchased regularly		

(8 x 1)

(8)

- 3.2 Refer to economic sectors. Match the statements below with the primary, secondary or tertiary economic sectors. Write only the sector next to the question numbers (3.2.1 to 3.2.7) in the ANSWER BOOK.
- 3.2.1 Mining is an example of this economic sector
- 3.2.2 This sector is concerned with the provision of services
- 3.2.3 The extraction of raw materials from the Earth's surface
- 3.2.4 Concerned with the processing of raw materials
- 3.2.5 The provision of electricity is an example of this sector
- 3.2.6 The manufacture of textiles, footwear and clothing
- 3.2.7 Contributes the least to the GDP of South Africa (7 x 1) (7)
- 3.3 Read the extract from the State of the Nation Address (SONA) in FIGURE 3.3 about rural settlement issues: land reform.
- 3.3.1 What is *land reform*? (1 x 1) (1)
- 3.3.2 Refer to land reform policy.
- (a) Name TWO land reform programs referred to in the extract. (2 x 1) (2)
- (b) Explain the difference between the land reform programmes named in QUESTION 3.3.2(a). (2 x 2) (4)
- 3.3.3 Give TWO solutions in the extract that refers to the success of land reform for emerging farmers. (2 x 1) (2)
- 3.3.4 How will the action of 'expropriation of land without compensation' help accelerate (speed up) the process of land reform? (1 x 2) (2)
- 3.3.5 Discuss how the implementation of land reform can affect South Africa's agricultural production. (2 x 2) (4)

3.4 FIGURE 3.4 is based on urbanisation.

- 3.4.1 Distinguish between the terms *urbanisation* and *urban expansion*. (2 x 1) (2)
- 3.4.2 State the trend in urbanisation from 1970 to 2020. (1 x 1) (1)
- 3.4.3 Why does urbanisation give rise to urban expansion? (2 x 2) (4)
- 3.4.4 In a paragraph of approximately EIGHT lines, account for the urban problems that result from rapid urbanisation in cities in developing countries. (4 x 2) (8)

3.5 Refer to the cartoon in FIGURE 3.5 based on the importance of food security.

- 3.5.1 What is *food security*? (1 x 1) (1)
- 3.5.2 Why does the use of the words 'great news' not align (fit in) with the message of the cartoon? (1 x 2) (2)
- 3.5.3 Even if there was food security, why would it not help the people in the cartoon? (2 x 2) (4)
- 3.5.4 In a paragraph of approximately EIGHT lines, discuss ways to improve food security in South Africa. (4 x 2) (8)

3.6 FIGURE 3.6 is based on strategies for industrial development: Richards Bay.

- 3.6.1 In which province is Richards Bay located? (1 x 1) (1)
- 3.6.2 Give TWO examples of industries in Richards Bay found on the map. (2 x 1) (2)
- 3.6.3 Why is this area a leading manufacturer of heavy machinery? (2 x 2) (4)
- 3.6.4 How would industrial development in Richards Bay be an advantage to the local community? (2 x 2) (4)
- 3.6.5 Explain why Richards Bay would be attractive in terms of its infrastructure for both local and international investors. (2 x 2) (4)

[75]

QUESTION 4

- 4.1 Refer to FIGURE 4.1 showing rural and urban settlements. Match the statements below to settlement type (**A** or **B**). Write only the letter next to the question numbers (4.1.1 to 4.1.7) in the ANSWER BOOK.

4.1.1 Settlement associated with secondary and tertiary activities

4.1.2 Primary activities dominate in this settlement

4.1.3 Known as a unifunctional settlement

4.1.4 This settlement offers multiple functions

4.1.5 The pattern of this settlement is always nucleated

4.1.6 An example of such a settlement is a city

4.1.7 The smallest settlement is called a farmstead (7 x 1) (7)

- 4.2 Choose a term in COLUMN B that matches the description in COLUMN A. Write only the letter (A–I) next to the question numbers (4.2.1 to 4.2.8) in the ANSWER BOOK, e.g. 4.2.9 J.

COLUMN A		COLUMN B	
4.2.1	Exchange of goods and services between countries	A	transportation network
4.2.2	Income generated by a country by means of exports	B	formal
4.2.3	Facilitates the movement of people, goods and information from one place to another	C	home market
4.2.4	Refers to goods that are brought into the country	D	trade
4.2.5	Legally registered businesses	E	beneficiation
4.2.6	Also known as the domestic market	F	GDP
4.2.7	Total value of goods and services produced by a country per year	G	foreign exchange
4.2.8	Value added to a raw material by means of processing	H	GNP
		I	imports

(8 x 1) (8)

4.3 FIGURE 4.3 is an urban profile showing the relationship between land-use zones and building density.

4.3.1 Refer to land-use zone **A**.

- (a) Name the land-use zone. (1 x 1) (1)
- (b) State TWO characteristics of land-use zone **A**. (2 x 1) (2)
- (c) Why is this land-use zone ideal for the location of light industries? (1 x 2) (2)
- (d) Suggest ONE reason for land-use zone **A** having high land values. (1 x 2) (2)

4.3.2 Give TWO pieces of evidence that suggest that land-use zone **B** is a residential zone of high income. (2 x 2) (4)

4.3.3 Explain why land-use zone **B** and land-use zone **C** are not compatible. (2 x 2) (4)

4.4 Study FIGURE 4.4 based on an informal settlement and associated issues.

- 4.4.1 Define the term *informal settlement*. (1 x 1) (1)
- 4.4.2 According to the newspaper article, why is there an increased risk of fires in informal settlements? (2 x 1) (2)
- 4.4.3 Why does the occurrence of destructive fires increase in informal settlements in winter? (2 x 2) (4)
- 4.4.4 In a paragraph of approximately EIGHT lines, explain how the local municipality can reduce fire hazards for people living in informal settlements. (4 x 2) (8)

- 4.5 Refer to FIGURE 4.5, the infographic of South Africa's industrial regions: Port Elizabeth-Uitenhage (Nelson Mandela Metropole).
- 4.5.1 In which province is the Port Elizabeth-Uitenhage industrial region located? (1 x 1) (1)
- 4.5.2 State the main industry in this region. (1 x 1) (1)
- 4.5.3 Give TWO physical (natural) factors in the infographic that contributed to its growth as a manufacturing region. (2 x 1) (2)
- 4.5.4 Why is the large population an advantage to the Port Elizabeth-Uitenhage region? (1 x 2) (2)
- 4.5.5 Explain how the industry in QUESTION 4.5.2 contributed to the economic growth of this region. (2 x 2) (4)
- 4.5.6 Discuss TWO challenges experienced by industries in the Port Elizabeth-Uitenhage region in comparison to industries in the PWV region. (2 x 2) (4)
- 4.6 Refer to FIGURE 4.6, a cartoon based on the informal sector.
- 4.6.1 Define the term *informal sector*. (1 x 1) (1)
- 4.6.2 What evidence in the cartoon indicates that the minister is not in favour of the informal sector? (1 x 1) (1)
- 4.6.3 Suggest a possible reason for the minister not wanting informal street trading taking place. (1 x 2) (2)
- 4.6.4 Give TWO reasons why the informal sector is important for the informal trader. (2 x 2) (4)
- 4.6.5 In a paragraph of approximately EIGHT lines, discuss reasons for the growth of the informal sector in South Africa. (4 x 2) (8)
- TOTAL: 225**
- [75]**