Province of the
EASTERN CAPE
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 12

JUNE 2018

GEOGRAPHY P1

MARKS: **225**

TIME: **3 hours**

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This question paper consists of 12 pages and an 8-page annexure.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of THREE questions.
2. Answer all THREE questions of 75 marks each.
3. All diagrams are included in the ANNEXURE.
4. Number the answers correctly according to the numbering system used in this question paper.
5. Leave a line between subsections of questions answered.
6. Start EACH question on a NEW page.
7. Do NOT write in the margins of the ANSWER BOOK.
8. Illustrate your answers with labelled diagrams, when instructed to do so.
9. Mark allocation is as follows: (2 x 1) (2) means that TWO facts are required for ONE mark each
   (2 x 2) (4) means that TWO facts are required for TWO marks each
10. If words/action verbs like **Name**, **Identify**, **Provide** and **Classify** are used in a question, ONE WORD ANSWERS are acceptable.
    If words/action verbs like **Discuss**, **Define**, **Explain**, **Comment**, **Evaluate**, **Justify**, **Suggest** and **Substantiate** are used in a question, FULL SENTENCES or PHRASES are required.
    All paragraph questions must be answered in FULL sentences.
11. Write neatly and legibly.

SECTION A: PHYSICAL GEOGRAPHY – CLIMATE, WEATHER AND GEOMORPHOLOGY

QUESTION 1

1.1 Choose a term in COLUMN B that matches the climatological description in COLUMN A. Write only the letter (A–I) next to the question number (1.1.1–1.1.8) in the ANSWER BOOK, for example 1.1.9 J.

COLUMN A		COLUMN B	
1.1.1	Wind from the land moving towards the sea	A	coastal low
1.1.2	Develops over the central interior of southern Africa in summer	B	offshore wind
1.1.3	Gusty, strong winds along the entire cold front	C	cut off low
1.1.4	Wind from the sea moving towards the land	D	heat low
1.1.5	Warm moist air moves into the interior from the northeast and it converges with cold, dry air from the southwest	E	moisture front
1.1.6	They are usually found ahead of an approaching cold front	F	line thunderstorm
1.1.7	An outward bulge of isobars in a low pressure system towards a high pressure system	G	line squall
1.1.8	Moist air from over the ocean to be drawn onto land and leads to rainfall for several days	H	trough
		I	onshore wind

(8 x 1) (8)

1.2 Refer to FIGURE 1.2 on different drainage patterns and match EACH of the descriptions below with ONE of the drainage patterns. You may choose the same drainage pattern more than once.

1.2.1 Forms in areas that are geologically young

1.2.2 Mainstream often flows through gaps

1.2.3 The central point could be a lake or pan

1.2.4 It forms in areas where domes and volcanoes occur

1.2.5 Found in fold mountain regions and areas of inclined strata

1.2.6 Associated with horizontal sedimentary and massive igneous rocks

1.2.7 It occurs in areas of major faults (7 x 1) (7)

1.3 FIGURE 1.3 represents the occluded stage of a mid-latitude cyclone.

1.3.1 Give evidence from the diagram to prove that this is the occluded stage of a mid-latitude cyclone. (2 x 1) (2)

1.3.2 Describe ANY TWO expected weather conditions associated with the occluded stage of the mid-latitude cyclone. (2 x 1) (2)

1.3.3 Line **A**–**B** indicates a cold front occlusion.

(a) Account for the formation of a cold front occlusion. (2 x 2) (4)

(b) Draw a simple, labelled cross-section from **A** to **B**, that will represent a cold front occlusion. (3 x 1) (3)

(c) Comment on how visibility will be influenced, as the cold front occlusion passes over the area indicated by **X**. (2 x 2) (4)

1.4 Study FIGURE 1.4, which shows the influence of slope aspect in a valley.

1.4.1 Define the term *microclimate*. (1 x 1) (1)

1.4.2 What is the *shadow zone*? (1 x 1) (1)

1.4.3 Is this sketch typical of a valley climate in the northern or southern hemisphere? (1 x 1) (1)

1.4.4 Give evidence from the sketch to support your answer to QUESTION 1.4.3. (1 x 2) (2)

1.4.5 Describe the type of vegetation that would grow in the shadow zone. (1 x 2) (2)

1.4.6 In a paragraph of approximately EIGHT lines, explain the formation of the different weather phenomena that occurs in valleys, during the night. (4 x 2) (8)

1.5 Refer to the photograph (FIGURE 1.5) of a periodic/seasonal river in South Africa.

1.5.1 What is a *periodic/seasonal river*? (1 x 1) (1)

1.5.2 Account for the position of the water table in this river, in relation to the earth's surface during the dry season. (1 x 1) (1)

1.5.3 Name the type of stream flow in the photograph. (1 x 1) (1)

1.5.4 State TWO physical factors evident in the photograph that will influence the stream flow of this river. (2 x 2) (4)

1.5.5 In a paragraph of approximately EIGHT lines, evaluate the impact that periodic rivers will have on farming communities. (4 x 2) (8)

1.6 Refer to FIGURE 1.6 showing a braided stream.

1.6.1 What is a *braided stream*? (1 x 1) (1)

1.6.2 In which course of the river does a braided stream form? (1 x 1) (1)

1.6.3 Describe the gradient in this course (your answer to QUESTION 1.6.2) of the river. (1 x 1) (1)

1.6.4 Explain the impact of the sand islands on the streams in this channel. (1 x 2) (2)

1.6.5 Discuss the formation of braided streams. (3 x 2) (6)

1.6.6 Evaluate the impact that braided streams will have on infrastructure. (2 x 2) (4)

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QUESTION 2

2.1 Choose the correct word(s) from those given in brackets. Write only the word(s) next to the question number (2.1.1–2.1.7) in the ANSWER BOOK.

2.1.1 Tropical cyclones develop between the (30° to 60°/5° to 25°) latitudes.

2.1.2 The diameter of a tropical cyclone reaches (30–65 km/300–500 km) in the immature stage.

2.1.3 The movement of tropical cyclones generally occurs from (east to west/west to east).

2.1.4 Tropical cyclones are associated with (anti-clockwise/clockwise) air circulation in the northern hemisphere.

2.1.5 The pressure at the centre of a tropical cyclone is far below 1 000 mb in the (mature/dissipating) stage.

2.1.6 Upper air (convergence/divergence) causes moist air to be drawn into the system at the surface during the formation of a tropical cyclone.

2.1.7 The difference in (temperature/pressure) causes tropical cyclones to follow erratic (unpredictable) paths. (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 D.

2.2.1 This is the process whereby a river regains energy and begins to erode vertically:

A Stream piracy
B Knickpoint
C Rejuvenation
D Base level

2.2.2 The river that has captured the water of another river through headward erosion is called the ... stream.

A captured
B captor
C beheaded
D antecedent

2.2.3 A temporary base level of erosion occurs when a river flows into/over the ...

A sea.
B waterfall.
C upper course.
D lower course.

2.2.4 A dry river valley that is found immediately below the elbow of capture is referred to as the ...

A knickpoint.
B river gravel.
C valley within a valley.
D wind gap.

2.2.5 An ungraded river profile ...

A is the lowest level by which a river can erode.
B is even with no obstacles.
C is removing rapids by downward erosion.
D is uneven and has many obstacles.

2.2.6 A ... profile shows the side view of a river, from the source to the mouth.

A cross
B longitudinal
C river
D graded

2.2.7 The upper course of a river is characterised by ...

A turbulent flow and lateral erosion.
B laminar flow and vertical erosion.
C V-shaped valleys.
D wide valleys.

2.2.8 High drainage density is influenced by ...

A steep slopes.
B porous rocks.
C dry soils.
D little vegetation cover. (8 x 1) (8)

2.3 FIGURE 2.3 shows the position of the Kalahari/Continental high-pressure cell in winter and summer.

2.3.1 Which sketch, **A** or **B**, represents the position of the Kalahari/Continental high-pressure cell in winter? (1 x 1) (1)

2.3.2 Give ONE reason to support your answer to QUESTION 2.3.1. (1 x 1) (1)

2.3.3 Refer to the inversion layers at **A** and **B.**

(a) Explain how the inversion layer over South Africa developed. (1 x 1) (1)

(b) Comment on the influence of the ITCZ on the position of the inversion layer during the seasons represented by **A** and **B**. (3 x 2) (6)

(c) The varied positions of the inversion layer at **A** and **B** have different impacts on farming activities over the interior of South Africa. Substantiate this statement. (3 x 2) (6)

2.4 FIGURE 2.4 is a representation of a city's climate.

2.4.1 Define a *heat island*. (1 x 1) (1)

2.4.2 List from the sketch urban activities that contribute to higher temperatures in cities. (2 x 1) (2)

2.4.3 What effect will increased temperatures have on urban inhabitants? (2 x 2) (4)

2.4.4 In a paragraph of approximately EIGHT lines, explain how the greenbelt and rivers reduce the heat island effect. (4 x 2) (8)

2.5 Study FIGURE 2.5 which illustrates a drainage basin.

2.5.1 Clearly distinguish between a *drainage basin* and a *catchment area* as shown in FIGURE 2.5. (2 x 1) (2)

2.5.2 Name the TWO sources of water for this drainage basin. (2 x 1) (2)

2.5.3 State TWO factors evident on the sketch that may influence the infiltration in this drainage basin. (2 x 1) (2)

2.5.4 The following questions refer to the watershed.

(a) What is a *watershed*? (1 x 1) (1)

(b) Explain how the position of a watershed can be altered (changed). (2 x 2) (4)

(c) How can the change in the position of the watershed result in river capture? (2 x 2) (4)

2.6 FIGURE 2.6 is a sketch showing river pollution.

2.6.1 What is *river pollution*? (1 x 1) (1)

2.6.2 Name TWO ways in which the river is being polluted in the sketch. (2 x 1) (2)

2.6.3 Discuss the negative impact that pollution has on our rivers. (2 x 2) (4)

2.6.4 In a paragraph of approximately EIGHT lines, suggest possible ways of managing the problem of river pollution. (4 x 2) (8)

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SECTION B: RURAL AND URBAN SETTLEMENTS

QUESTION 3

3.1 Study FIGURE 3.1 showing settlement patterns. Match the descriptions below to the correct settlement patterns. Write down ONLY the correct settlement pattern next to the question number (3.1.1–3.1.8) in the ANSWER BOOK, for example 3.1.9 Dispersed.

3.1.1 Farmers are independent and can experiment with modern equipment

3.1.2 Basic services such as schooling are far away

3.1.3 These settlements have a long and narrow shape

3.1.4 Safety advantages because of large numbers

3.1.5 These farms require large amounts of capital to be sustained

3.1.6 Farmer has fragmented pieces of land

3.1.7 This settlement pattern is located as close as possible to a factor of importance

3.1.8 Lack of privacy is a disadvantage of this settlement pattern (8 x 1) (8)

3.2 Refer to FIGURE 3.2 on the hierarchy of settlements.

3.2.1 Are higher order services likely to be found near the top, or the bottom of the hierarchy?

3.2.2 Which settlement type offers rural as well as urban functions?

3.2.3 Will highly specialised functions be found in a village or conurbation?

3.2.4 Name the urban place that is bigger than a conurbation.

3.2.5 State the type of settlement that Durban would fall under in this hierarchy.

3.2.6 Is a city or town likely to have a smaller range and more lower-order goods and services?

3.2.7 Name the settlement that would comprise a small group of farmsteads. (7 x 1) (7)

3.3 Refer to the cartoonist's impression of rural-urban migration in FIGURE 3.3.

3.3.1 Define the term *rural-urban migration*. (1 x 1) (1)

3.3.2 Suggest a possible reason from the sketch, why this person has left the rural area. (1 x 1) (1)

3.3.3 Why would you describe the rural area in the sketch as a 'ghost town'? (1 x 1) (1)

3.3.4 Discuss TWO possible ways that this man's positive perception (understanding) of urban life will be shattered. (2 x 2) (4)

3.3.5 In a paragraph of approximately EIGHT lines, explain why it is still important for planners to manage dwindling (decreasing) rural settlements. (4 x 2) (8)

3.4 Read the extract in FIGURE 3.4 based on a rural social justice issue.

3.4.1 Name the resource, from the passage, that rural people have no access to. (1 x 1) (1)

3.4.2 Why is this resource (your answer to QUESTION 3.4.1) considered to be a social justice issue? (1 x 1) (1)

3.4.3 According to the article, what has contributed to the lack of this resource? (answer to QUESTION 3.4.1) (1 x 1) (1)

3.4.4 What is meant by '... ground zero' in the context of the article? (1 x 2) (2)

3.4.5 Why has it not been possible to provide water infrastructure to the rural community of Beaufort West? (2 x 2) (4)

3.4.6 Evaluate the negative impact of the water crisis on employment in rural areas. (3 x 2) (6)

3.5 Refer to FIGURE 3.5 based on urban land-use models.

3.5.1 State the purpose of developing urban land-use models. (1 x 2) (2)

3.5.2 Identify the urban land-use models in sketches **B** and **C**. (2 x 1) (2)

3.5.3 Refer to land-use zone **1**.

(a) Name land-use zone **1**. (1 x 1) (1)

(b) Account for land-use zone **1**'s location in urban land-use models **A** and **B**. (2 x 1) (2)

(c) Why has the location of land-use zone **1** changed in model **C**? (2 x 2) (4)

3.5.4 Suggest TWO possible reasons why all land-use models today must include zones for greenbelts. (2 x 2) (4)

3.6 Read the article in FIGURE 3.6 based on an informal settlement in South Africa.

3.6.1 What is an *informal settlement*? (1 x 1) (1)

3.6.2 State TWO possible reasons why fires would be a common problem in the Richmond Road informal settlement. (2 x 1) (2)

3.6.3 Why would it be difficult for emergency vehicles (police, ambulance, fire brigade) to access the Richmond Road informal settlement during a fire? (2 x 2) (4)

3.6.4 In a paragraph of approximately EIGHT lines, suggest possible short-term and long-term ways that the government can help residents of the Richmond Road informal settlement during the outbreak of fires. (4 x 2) (8)

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TOTAL: 225