



education

Department:
Education
PROVINCE OF KWAZULU-NATAL

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

GEOGRAPHY P1

COMMON TEST

JUNE 2020

MARKS: 225

TIME: 3 hours

**This question paper consists of 13 pages and
a 9 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. 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. Do NOT write in the margins of your ANSWER BOOK.
8. Where possible, illustrate your answers with labelled diagrams.
9. Write clearly and legibly.

SECTION A: WEATHER, CLIMATE AND GEOMORPHOLOGY**QUESTION 1****PRESSURE CELLS INFLUENCING SOUTH AFRICA'S CLIMATE**

1.1 Refer to FIGURE 1.1 showing pressure cells influencing South Africa's climate. Various options are provided as possible answers to the following questions. Choose the correct answer (A–D) and write the letter next to the question number (1.1.1–1.1.7) in the ANSWER BOOK, for example 1.1.9 D.

1.1.1 Pressure cell **A** is the ...

- A South Indian Anticyclone.
- B South Atlantic Anticyclone.
- C Mid-latitude Cyclone.
- D Kalahari Anticyclone.

1.1.2 Pressure cells **A**, **B** and **C** are associated with ... and ... air movements.

- A subsiding; surface divergent
- B subsiding; surface convergent
- C rising; surface divergent
- D rising; surface convergent

1.1.3 FIGURE 1.1 represents typical ... conditions.

- A summer
- B autumn
- C winter
- D spring

1.1.4 Pressure cell **B** is responsible for ... conditions over the interior in winter.

- A dry
- B moist
- C unstable
- D cloudy

1.1.5 Pressure cell **C** is responsible for the influx of ... air over the interior of the country.

- A warm, dry
- B warm, moist
- C cold, dry
- D cold, moist

1.1.6 Pressure cell **E** plays an important role in the development of ...

- A line thunderstorms
- B valley winds
- C mountain winds
- D berg winds

1.1.7 Pressure cell **D** is responsible for ... in the Western Cape during winter.

- A radiation fog
- B snow falls
- C frost pockets
- D dry conditions

(7 x 1) (7)

VALLEY CLIMATES

1.2 Study FIGURE 1.2 on valley climates in the southern hemisphere and answer the following questions. Write only the correct answer next to the question number. e.g. 1.1.9 winter

1.2.1 Name the valley wind blowing at **A**.

1.2.2 Which force is responsible for this movement of air?

1.2.3 When does this illustrated air movement (**A**) take place?

1.2.4 Which part of the valley slope is the warmest?

1.2.5 State the type of precipitation forming when the valley temperature cools below dew point.

1.2.6 Name the climatological feature that traps pollution in the valley.

1.2.7 State the precipitation that forms in the area **C** when the temperature drops below 0°C.

1.2.8 Which slope (**D/E**) is most suitable for forestry?

(8 x 1) (8)

MID-LATITUDE CYCLONE

- 1.3 Refer to the case study and satellite image of the mid-latitude cyclone in FIGURE 1.3.
- 1.3.1 Define the term *mid-latitude cyclone*. (1 x 1) (1)
- 1.3.2 According to president Cyril Ramaphosa, what is the link between cold fronts and the spread of COVID-19? (1 x 2) (2)
- 1.3.3 Why are satellite images of mid-latitudes cyclone useful? (1 x 2) (2)
- 1.3.4 Why does the cold front travel from the Western Cape to the Eastern Cape? (1 x 2) (2)
- 1.3.5 Draw a fully labelled cross-section of the mature stage a mid-latitude cyclone in the Southern Hemisphere. (4 x 1) (4)
- 1.3.6 Discuss any TWO sustainable strategies that South African citizens can implement to protect themselves as “the massive cold fronts sweep into our country from the South Atlantic Ocean”. (2 x 2) (4)

URBAN HEAT ISLAND

- 1.4 Refer to FIGURE 1.4 illustrating a roof garden as a solution to the urban heat island effect.
- 1.4.1 What is an urban heat island? (1 x 1) (1)
- 1.4.2 With reference to the photograph, mention TWO aspects of the urban morphology that contributes to the development of an urban heat island. (2 x 1) (2)
- 1.4.3 This roof garden will be advantaged by the higher rainfall received in urban areas. Discuss why urban areas receive a higher rainfall than the surrounding rural areas. (2 x 2) (4)
- 1.4.4 Roof gardens reduce the intensity of the urban heat island effect, and promote a more sustainable urban environment. In a paragraph of approximately EIGHT lines justify the statement. (4 x 2) (8)

DRAINAGE PATTERN

- 1.5 Refer to FIGURE 1.5 showing two drainage patterns.
- 1.5.1 What is a drainage pattern? (1 x 1) (1)
- 1.5.2 (a) Name drainage patterns **A** and **B**. (2 x 1) (2)
- (b) Give evidence from the diagrams to support your choices in QUESTION 1.5.2 (a). (2 x 1) (2)
- 1.5.3 Compare the underlying rock structures of drainage patterns **A** and **B**. (2 x 2) (4)
- 1.5.4 Briefly explain why the main stream in drainage pattern **B** has 90° bends in it, and why tributaries join the main stream at 90° angles. (2 x 2) (4)
- 1.5.5 Suggest ONE reason why drainage pattern **A** is the most effective for farming purposes. (1 x 2) (2)

RIVER CAPTURE

- 1.6 Refer to FIGURE 1.6 illustrating river capture.
- 1.6.1 Define *river capture*? (1 x 1) (1)
- 1.6.2 (a) Which river in FIGURE 1.6 is the captor stream? (1 x 1) (1)
- (b) Give a reason your answer in QUESTION 1.6.2 (a). (1 x 1) (1)
- 1.6.3 Explain the occurrence of river gravels indicated in FIGURE 1.6. (2 x 2) (4)
- 1.6.4 In a paragraph of approximately EIGHT lines explain the impact of river capture on both rivers labelled **C** and **D**. (4 x 2) (8)

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QUESTION 2**SECTION B: CLIMATE AND WEATHER AND GEOMORPHOLOGY.****INVERSION LAYER**

- 2.1 Refer to **FIGURE 2.1 A** and **2.1 B** showing the different positions of the upper air inversion layer over South Africa.
- 2.1.1 Which **FIGURE (2.1 A / 2.1 B)** illustrates summer conditions?
- 2.1.2 The letter **P** in the illustrated sketch represents the (inversion/thermal) layer.
- 2.1.3 The (Kalahari/Indian) high pressure labelled **Q** is responsible for the seasonal change in the position of layer **P**.
- 2.1.4 The wind **R** is (cold and dry/warm and moist).
- 2.1.5 The letter **S** represents the (escarpment/plateau).
- 2.1.6 The air movement in **FIGURE 2.1 B** can result in (floods/drought) in the Gauteng province.
- 2.1.7 During summer the high pressure cell labelled **Q** may be replaced by a (thermal low/coastal low)
- 2.1.8 The wind labelled **R** can result in (orographic/convectional) rainfall along the windward side of the mountain. (8 x 1) (8)

DRAINAGE BASIN

- 2.2 Refer to **FIGURE 2.2** which shows a drainage basin and give **ONE** term for each of the statements below:
- 2.2.1 Water that flows on the surface after it rains.
- 2.2.2 High-lying area that separates two different drainage basins.
- 2.2.3 The upper level of ground water.
- 2.2.4 The starting point of a river.
- 2.2.5 Shows the division between two rivers in the same drainage basin.
- 2.2.6 The point where the river enters the sea.
- 2.2.7 A river that flows only during the rainy season. (7 x 1) (7)

TROPICAL CYCLONE

- 2.3 Study FIGURE 2.3 which shows a satellite image, path and an article on tropical cyclone Harold.
- 2.3.1 Define the term *Tropical Cyclone*. (1 x 1) (1)
- 2.3.2 How many tropical cyclones occurred in the present cyclone season in this region? (1 x 1) (1)
- 2.3.3 What you understand by a *category 5 storm*? (1 x 1) (1)
- 2.3.4 With reference to the satellite image of Tropical cyclone Harold, state why it is in its mature stage of development. (1 x 1) (1)
- 2.3.5 State the general direction in which Tropical cyclone Harold tracked. (1 x 1) (1)
- 2.3.6 Explain why the intensity of Tropical cyclone Harold decreased from 3 to 7 of April 2020. (1 x 2) (2)
- 2.3.7 With reference to the prevailing COVID 19 pandemic, suggest in a paragraph of approximately EIGHT lines, how island countries, that experience frequent tropical cyclones, can prepare to reduce the further loss of lives caused by pandemics. (4 x 2) (8)

MOISTURE FRONT

- 2.4 Refer to FIGURE 2.4 showing the development of line thunderstorms.
- 2.4.1 What is a moisture front? (1 x 1) (1)
- 2.4.2 Name high pressure cell (**H**) visible on the synoptic weather map that played a role in the development of the moisture front. (1 x 1) (1)
- 2.4.3 During which season does line thunderstorms usually develop in South Africa? (1 x 1) (1)
- 2.4.4 (a) Mention the difference in moisture content at **X** and **Y**. (2 x 1) (2)
- (b) Briefly explain why there is a difference in moisture content at **X** and **Y**. (2 x 2) (4)
- 2.4.5 Explain why line thunderstorm develop east of (at **Y**) the moisture front. (2 x 2) (4)
- 2.4.6 Predict ONE negative impact of line thunderstorms on farming activities on the South African interior. (1 x 2) (2)

2.5 RIVER REJUVENATION

Refer to FIGURE 2.5 illustrating the process of river rejuvenation.

- 2.5.1 Define the term river rejuvenation. (1 x 1) (1)
- 2.5.2 Identify TWO features of river rejuvenation visible in FIGURE 2.5. (2 x 1) (2)
- 2.5.3 Provide ONE possible reason why river rejuvenation takes place. (1 x 2) (2)
- 2.5.4 (a) Draw a labelled longitudinal profile of the river in FIGURE 2.5 from **X** to **Y**. (2 x 2) (4)
- (b) Would you consider the longitudinal profile that you have drawn as graded or ungraded? (1 x 2) (2)
- (c) Give ONE reason for your answer to QUESTION 2.5.4 (b). (1 x 2) (2)
- 2.5.5 Predict ONE change in any one of the river features downstream of the knickpoint as a result of rejuvenation. (1 x 2) (2)

HUMAN IMPACT ON DRAINAGE BASIN

- 2.6 Read the case study on catchment management shown in FIGURE 2.6.
- 2.6.1 Define the term *catchment management*. (1 x 1) (1)
- 2.6.2 Is Pongolapoort/Jozini Dam a temporary or permanent base level? (1 x 1) (1)
- 2.6.3 State ONE reason mentioned in the case study for the Department of Water Affairs decision to construct Pongolapoort Dam. (1 x 1) (1)
- 2.6.4 Discuss how the local community and farmers of Pongola benefitted from the construction of the Pongolapoort Dam. (2 x 2) (4)
- 2.6.5 In a paragraph of EIGHT lines, discuss the negative environmental and socio-economic impacts associated with altering the natural hydrology (water system) and flow patterns of the Pongola river. (4 x 2) (8)

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SECTION B: SETTLEMENT GEOGRAPHY**QUESTION 3**

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

COLUMN A	COLUMN B
3.1.1 The relationship between the settlement and its surrounding environment	A Isolated farmstead B Site
3.1.2 This site is chosen in an attempt to avoid water because of the danger of flooding	C Wet-point settlement D Dry-point settlement
3.1.3 The precise terrain on which a settlement is located	E Village
3.1.4 A settlement that consists of the main house and the out buildings	F Situation G Specialised settlement
3.1.5 People can share ideas, machinery, tools and services in this rural settlement	H Hamlet
3.1.6 A settlement that provides urban services to the surrounding rural area	I Central place
3.1.7 A settlement where houses are around one dominant water resource	
3.1.8 A settlement that has one dominant function	

(8 x 1) (8)

- 3.2 Choose the term from the textbox that matches the statements below. Write only the question number (3.2.1–3.2.7) in the ANSWER BOOK and the correct term next to it.

sphere of influence; urban growth; convenience goods; urban expansion; threshold population; high order goods; range of goods; urban growth

- 3.2.1 Increase in actual numbers of people living in cities due to urbanisation and natural causes.
- 3.2.2 Goods such as furniture, jewellery and motor cars which need large pool of customers
- 3.2.3 Surrounding area served by a settlement.
- 3.2.4 Customers travel a short distance to obtain these goods
- 3.2.5 Increase in the actual physical size of an urban area
- 3.2.6 The minimum number of customers required for a business to make a profit
- 3.2.7 The maximum distance that customers are prepared to travel to obtain a particular service. (7 x 1) (7)

RURAL SETTLEMENT SHAPES

- 3.3 Refer to FIGURE 3.3 showing the shapes of TWO rural settlements
- 3.3.1 Explain the term *settlement shape*. (1 x 1) (1)
- 3.3.2 (a) Identify the shapes of settlement **A** and settlement **B**. (2 x 1) (2)
- (b) For both settlements, give a possible reason, visible in the photographs, for the different shapes they have assumed. (2 x 1) (2)
- 3.3.3 Settlements **A** and **B** have a settlement pattern in common. Give ONE reason for this statement. (1 x 2) (2)
- 3.3.4 Describe the situation of settlement **A**. (2 x 2) (4)
- 3.3.5 Discuss TWO economic advantages for farmers who settled in settlement **B**. (2 x 2) (4)

LAND REFORM

- 3.4 Study FIGURE 3.4, a cartoon showing a discussion between inhabitants of a rural area and a developer.
- 3.4.1 What is the main purpose of land reform? (1 x 1) (1)
- 3.4.2 Name the land reform policy which allows the government to buy unoccupied land and share it equally amongst rural people. (1 x 1) (1)
- 3.4.3 Suggest ONE possible socio-economic conditions of the inhabitants in this rural area. (1 x 1) (1)
- 3.4.4 Why are the people of the area reluctant to help the developer increase the productivity of the land? (1 x 2) (2)
- 3.4.5 Give ONE possible reason why the developer says that land is a key to fight poverty. (1 x 2) (2)
- 3.4.6 In a paragraph of approximately EIGHT lines, outline measures that the government could implement to make land reform policies more effective. (4 x 2) (8)

URBAN PROFILE AND STREET PATTERNS

- 3.5 FIGURE 3.5 shows the relationship between an urban profile and street patterns.
- 3.5.1 (a) What is an *urban profile*? (1 x 1) (1)
- (b) Describe the shape of the urban profile. (1 x 1) (1)
- (c) Give ONE reason why tall buildings with a high building density are found in the CBD. (1 x 1) (1)
- 3.5.2 (a) Why is the grid iron street pattern typically found in the CBD? (1 x 2) (2)
- (b) Mention ONE disadvantage of the grid iron street pattern found in the CBD. (1 x 2) (2)
- 3.5.3 In a paragraph of approximately EIGHT lines, describe, and evaluate the reasons for the change in street pattern from the CBD to the outskirts of the city. (4 x 2) (8)

URBAN ISSUES

3.6 Refer to FIGURE 3.6 a cartoon that illustrates urban issues.

3.6.1 Define the term *urbanisation*. (1 x 1) (1)

3.6.2 What message is being conveyed in the cartoon? (1 x 2) (2)

3.6.3 Discuss any TWO urban issues shown in the cartoon. (2 x 2) (4)

3.6.4 Explain the impact the urban issues identified in QUESTION
3.6.3 will have on the health of urban dwellers. (2 x 2) (4)

3.6.5 Outline any TWO strategies that city planners can implement
to encourage businesses to relocate in areas away from the CBD. (2 x 2) (4)

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TOTAL MARKS: 225