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GAUTENG DEPARTMENT OF EDUCATION

PREPARATORY EXAMINATION

2016

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GEOGRAPHY

FIRST PAPER

TIME: 3 hours

MARKS: 225

14 pages + an addendum of 10 pages

P.T.O.

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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 between sub-sections of questions answered.
5. Start the answer to each question at the top of a NEW page.
6. Number the answers correctly according to the numbering system used in this question paper. Number the 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

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

QUESTION 1

Refer to FIGURE 1.1 showing the micro-climate in a valley. Various options are provided as possible answers to the statements provided. Read the statement and choose only the letter (A – D) and write the letter next to the question number (1.1.1 – 1.1.7) in the ANSWER BOOK, for example 1.1.8 D.

1.1.1 A local wind which blows down the slopes of the valley during the night is called a / an ... wind.

A föhn
B anabatic
C katabatic
D berg

1.1.2 The cold air sinks to the valley bottom as the air is ...

A heavy and dense.
B light and dense.
C heavy and less dense.
D light and less dense.

1.1.3 The … is a zone along the middle slope of a valley where night-time temperatures remain relatively mild.

A valley floor
B thermal belt
C shadow zone
D frost pocket

1.1.4 The air at point **A** is cooled by ...

A anabatic winds.
B terrestrial radiation.
C katabatic winds.
D temperature inversions.

1.1.5 In the morning, the earth's surface heats up and the valleys are cleared of fog through …

A evaporation.
B condensation.
C precipitation.
D wind.

1.1.6 The layer of warm air results in a … inversion.

A continental
B thermal
C radiation
D valley

1.1.7 The south-facing slopes (Point **C**) in the southern hemisphere are cooler as the sun's rays strike them at a / an … angle.

A oblique
B acute
C perpendicular
D obtuse (7x1) (7)

1.2 Complete the statements below by selecting the correct option from within the brackets to make each of the statements TRUE. Write only the word(s) next to the question number (1.2.1 – 1.2.8) in the ANSWER BOOK, for example 1.2.9 perennial river.

1.2.1 The point where two rivers join is known as the (confluence / tributary).

1.2.2 (Exotic / Periodic) rivers are rivers that only receive groundwater in the rainy season.

1.2.3 The higher lying area between two streams of the same river system is a / an (interfluve / watershed).

1.2.4 The total length of streams in a stream network compared to the area of the drainage basin is referred to as the (stream order / drainage density).

1.2.5 Streams that flow outwards from a raised central point are classified as a (trellis / radial) drainage pattern.

1.2.6 A fluvial feature that develops from the process of stream piracy along a captured river is a (misfit stream / incised meander).

1.2.7 The (rectangular / trellis) pattern occurs where the underlying rock structures consist of jointed, igneous rocks.

1.2.8 Vegetation found along the catchment area of a drainage basin would (increase / decrease) the velocity of run-off. (8x1) (8)

1.3 Refer to FIGURE 1.3 showing a satellite image of a tropical cyclone.

1.3.1 In which hemisphere has the tropical cyclone in the image occurred? (1x1) (1)

1.3.2 Give ONE reason for your answer to Question 1.3.1. (1x1) (1)

1.3.3 Name area **A** on the satellite image. (1x1) (1)

1.3.4 Account for the clear skies that are experienced at area **A**. (1x2) (2)

1.3.5 Explain TWO conditions necessary for the formation of tropical cyclones. (2x2) (4)

1.3.6 Write a paragraph of approximately EIGHT lines to explain why the tropical cyclone causes a greater negative social impact in developing countries than in developed countries. (4x2) (8)

1.4 FIGURE 1.4 shows disturbances associated with cyclonic circulation.

1.4.1 Name the pressure cell **A**. (1x1) (1)

1.4.2 State the origin of pressure cell **A**. (1x1) (1)

1.4.3 State the circulation pattern associated with pressure cell **A**. (1x1) (1)

1.4.4 State TWO factors, visible in FIGURE 1.4, suggesting favourable conditions for the development of berg winds at Port Elizabeth. (2x2) (4)

1.4.5 Why are berg winds associated with increased temperatures along the coast? (1x2) (2)

1.4.6 What impact do these increased temperatures have on the farming communities? (2x2) (4)

1.5 FIGURE 1.5 is a sketch of fluvial landforms.

1.5.1 Name the fluvial landform at **A**. (1x1) (1)

1.5.2 Why is fluvial landform **A** commonly associated with the lower course of a river? (1x1) (1)

1.5.3 Explain how the underlying rock structure influences the formation of fluvial landform **A**. (2x2) (4)

1.5.4 Draw a labelled diagram showing a cross-section of the fluvial feature mentioned in Question 1.5.1. (2x2) (4)

1.5.5 Discuss TWO disadvantages of using area **B** for farming. (2x2) (4)

1.6 Study FIGURE 1.6 which shows the human impact on stream flow.

1.6.1 Define the term *stream flow*. (1x1) (1)

1.6.2 Name a human activity that increases stream flow in the river found in FIGURE 1.6. (1x1) (1)

1.6.3 Explain how urban settlement **A** influences stream flow. (1x2) (2)

1.6.4 What impact does the increased stream flow have on

(a) the rate of erosion? (1x2) (2)

(b) drainage density? (1x2) (2)

1.6.5 Write a paragraph of approximately EIGHT lines to analyse the need to reduce the impact of human activities on stream flow. (4x2) (8)

[75]

QUESTION 2

2.1 Refer to FIGURE 2.1 showing pressure cells. Complete the statements below by selecting the correct option from within the brackets to make each of the statements TRUE. Write only the word(s) next to the question number (2.1.1 – 2.1.7) in the ANSWER BOOK, for example 2.1.8 tropical cyclone.

2.1.1 The movement of air in cell **A** in the southern hemisphere is (clockwise / anti-clockwise).

2.1.2 Lines drawn on maps joining places of equal pressure are referred to as (isobars / isohyets).

2.1.3 Pressure cell **B** can also be called a / an (cyclone / anti-cyclone).

2.1.4 The pressure reading at **C** is (1024 / 1026) hPa / mb.

2.1.5 Pressure cell (**A** / **B**) is associated with dry and stable conditions.

2.1.6 The air movement around pressure cell **B** spirals (inwards / outwards).

2.1.7 The circulation of air around pressure cell **A** indicates that this movement is on / in the (surface / upper atmosphere). (7x1) (7)

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

COLUMN A		COLUMN B	
2.2.1	High lying area which separates two drainage basins	A	antecedent stream
2.2.2	Stream that is older than the structure over which it flows	B	dendritic pattern
2.2.3	Stream with tributaries that are found in a random pattern with no joins to the main river	C	superimposed stream
2.2.4	Stream in which volume decreases after river capture	D	watershed
2.2.5	Stream pattern which develops in areas of alternating layers of hard and soft rock	E	run-off
2.2.6	Stream that is younger than the structure over which it flows	F	deranged stream
2.2.7	Total area of the land surface from which a river receives its water	G	trellis pattern
2.2.8	Resembles (looks like) a tree with several branches	H	misfit stream
		I	drainage basin
			(8x1)

(8)

2.3 Study FIGURE 2.3 which shows a stage of development of a mid-latitude cyclone.

2.3.1 State the stage of development of the mid-latitude cyclone shown in the cross-section. (1x1) (1)

2.3.2 State the movement of the warm air during the stage mentioned in Question 2.3.1. (1x1) (1)

2.3.3 Give a reason for the movement of warm air mentioned in Question 2.3.2. (1x2) (2)

2.3.4 Account for the weather conditions, visible in FIGURE 2.3, being experienced in the stage of development of the mid-latitude cyclone mentioned in Question 2.3.1. (3x2) (6)

2.3.5 Draw a synoptic representation of the stage of development of the mid-latitude cyclone shown in FIGURE 2.3. (2x2) (4)

2.4 FIGURE 2.4 shows the urban plume of an urban heat island.

2.4.1 Describe the concept illustrated in FIGURE 2.4. (1x1) (1)

2.4.2 Does FIGURE 2.4 illustrate a day or night situation? (1x1) (1)

2.4.3 Give a reason for your answer to Question 2.4.2. (1x2) (2)

2.4.4 Will the pollution levels be higher at **A** or **B**? (1x2) (2)

2.4.5 Suggest a reason for the difference in pollution levels at **A** and **B**. (1x2) (2)

2.4.6 Write a paragraph of approximately EIGHT lines in which you evaluate reasons for the slow rate at which temperatures in the CBD is reduced. (4x2) (8)

2.5 Refer to FIGURE 2.5 which shows a drainage basin from source to mouth and its corresponding cross profiles.

2.5.1 Identify the type of longitudinal profile labelled **A**. (1x1) (1)

2.5.2 Give evidence from FIGURE 2.5 to support your answer to Question 2.5.1. (1x1) (1)

2.5.3 Is the channel flow, generally associated with the longitudinal profile identified in Question 2.5.1, laminar or turbulent? (1x1) (1)

2.5.4 Describe the valley shape illustrated by **B** and **C**. (2x2) (4)

2.5.5 Account for the difference in the valley shapes at **B** and **C**. (2x2) (4)

2.5.6 Describe the process involved in how a graded river reaches and maintains the type of longitudinal profile labelled **A**. (2x2) (4)

2.6 Refer to FIGURE 2.6 which shows the process of river capture.

2.6.1 Define the term *river capture.* (1x1) (1)

2.6.2 State TWO possible factors that could have led to river capture. (2x1) (2)

2.6.3 Name the features labelled **E** and **F** that form after river capture has taken place. (2x1) (2)

2.6.4 Describe ONE physical impact of river capture on the drainage basin of River **B**. (1x2) (2)

2.6.5 In a paragraph of approximately EIGHT lines, predict the impact of this process on the local rural farming community in the lower reaches of the remaining portion of River **A**. (4x2) (8)

[75]

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

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

QUESTION 3

3.1 Choose the correct word from the list below to complete FIGURE 3.1. Only write down the numbers 3.1.1 – 3.1.7 below one another in the ANSWER BOOK and the correct word next to it.

hamlet; conurbation; town; dispersed; multifunctional; megalopolis; clustered; unifunctional

(7x1) (7)

3.2 Refer to FIGURE 3.2 and match each of the diagrams (**A – I**) to the statements below. Write only the letter (A – I) of your choice next to the question number (3.2.1 – 3.2.8) in your ANSWER BOOK.

3.2.1 quaternary activity

3.2.2 retail

3.2.3 heavy industry

3.2.4 raw material orientated industry

3.2.5 market orientated industry

3.2.6 international trade

3.2.7 road transport

3.2.8 telecommunications (8x1) (8)

3.3 Refer to FIGURE 3.3 showing a map extract of the Western Cape indicating types of urban settlements.

3.3.1 (a) Define the term *sphere of influence*. (1x1) (1)

(b) Indicate which place, Paarl or Cape Town, will have a greater sphere of influence. (1x1) (1)

(c) Give a reason for your answer to QUESTION 3.3.1(b). (1x2) (2)

3.3.2 State the relationship between the sphere of influence of a settlement and its threshold population. (1x2) (2)

3.3.3 Why would a person wanting to buy high-order goods rather travel to Cape Town than to Hermanus? (1x2) (2)

3.3.4 Hermanus is referred to as a *specialised town*.

(a) What type of specialised town will Hermanus likely be? (1x2) (2)

(b) Despite being a small settlement, Hermanus will have a large sphere of influence. Explain why this is the case. (2x2) (4)

3.4 Refer to FIGURE 3.4, a photo of the urban profile of a land-use zone in an urban area.

3.4.1 Define the term *urban profile*. (1x1) (1)

3.4.2 Identify the land-use zone illustrated by FIGURE 3.4. (1x1) (1)

3.4.3 Give a reason for this land-use zone being characterised by tall buildings. (1x2) (2)

3.4.4 Describe the impact that rural-urban migration would have had on this land-use zone. (2x2) (4)

3.4.5 In a paragraph of approximately EIGHT lines, suggest measures that an urban and regional planner could implement to solve some of the problems to the issue mentioned in Question 3.4.4. (4x2) (8)

3.5 Refer to FIGURE 3.5 and answer the following questions.

3.5.1 Identify the main cash crop product that was exported the most in 2010. (1x1) (1)

3.5.2 How much maize, in US$, was exported in 2010? (1x1) (1)

3.5.3 How would the current drought conditions in South Africa impact on maize exports in 2016? (1x2) (2)

3.5.4 Why is maize farming of such great importance to all South Africans? (2x2) (4)

3.5.5 The current drought conditions had a negative impact on food security in South Africa. Explain why this is the case. (2x2) (4)

3.5.6 Make ONE recommendation to the government on how food security can be maintained in South Africa during drought conditions. (1x2) (2)

3.6 The Maputo Development Corridor SDI was developed along the N4 National Road to link the PWV industrial region with the port of Maputo in Mozambique.

3.6.1 Write out the abbreviation *SDI* in full. (1x1) (1)

3.6.2 Mention TWO countries that will benefit the most from the Maputo Development Corridor. (2x1) (2)

3.6.3 Why did the Maputo Development Corridor increase the export ability of the PWV industrial region? (1x1) (1)

3.6.4 Give TWO reasons why SDIs were developed in South Africa. (2x2) (4)

3.6.5 In a paragraph of approximately EIGHT lines, assess the socio-economic advantages of the Maputo Development Corridor for people living along the N4 National Road. (4x2) (8)

[75]

QUESTION 4

4.1 Choose the correct answer from the words in brackets to make the following statements TRUE. Write only the word(s) next to the question number in your ANSWER BOOK, e.g. 4.1.9 south.

4.1.1 The process by which an increasing percentage of a country's population is concentrated in cities is called (counter-urbanisation / urbanisation).

4.1.2 The pace at which urbanisation is taking place is known as (urban expansion / rate of urbanisation).

4.1.3 An increase in the total number of people living in urban areas is called (level of urbanisation / urban expansion).

4.1.4 The formless expansion of urban areas into the surrounding areas is called (urban sprawl / urban expansion).

4.1.5 The movement of people from rural areas to cities is called (rural depopulation / rural-urban migration).

4.1.6 The physical increase in size of urban areas is known as (urban expansion / urban growth).

4.1.7 Developed countries have a (high / low) rate of urbanisation.

4.1.8 Developing countries have a (high / low) level of urbanisation. (8x1) (8)

4.2 Various options are provided as possible answers to the statements provided. Choose the correct answer to complete the following statements. Write only the letter (A – D) next to the question number (4.2.1 – 4.2.7) in the ANSWER BOOK, for example 4.2.8 A.

4.2.1 The sector that provides raw materials or resources for processing is the … sector.

A primary
B secondary
C tertiary
D quaternary

4.2.2 The transporting of goods for manufacturing falls under the … sector.

A primary
B secondary
C tertiary
D quaternary

4.2.3 To change a product from its natural form to the final consumer product falls under the … sector.

A primary
B secondary
C tertiary
D quaternary

4.2.4 The processing of information is designated to the … sector.

A primary
B secondary
C tertiary
D quaternary

4.2.5 The ... economic sector is not directly linked to a natural resource or a market.

A primary
B secondary
C tertiary
D quaternary

4.2.6 The hawker selling cell-phone appliances on the corner of the street falls under the … sector.

A primary
B secondary
C tertiary
D quaternary

4.2.7 In a developed country the … sector contributes the least to the GDP of that country.

A primary
B secondary
C tertiary
D quaternary (7x1) (7)

4.3 Refer to FIGURE 4.3 showing existing land-use in urban centres.

4.3.1 What is meant by the term *land-use*? (1x1) (1)

4.3.2 Which land-use covers the largest urban space? (1x1) (1)

4.3.3 (a) Give the geographical term used to describe parks / open spaces / cemeteries. (1x1) (1)

(b) Suggest TWO reasons why it is important to maintain the land-use zone mentioned in Question 4.3.3(a). (2x2) (4)

4.3.4 (a) What will happen to the size of vacant land in urban centres in the near future? (1x2) (2)

(b) Give ONE reason to support your answer to Question 4.3.4(a). (1x2) (2)

4.3.5 Even though the industrial area covers a small percentage of urban land-use, it contributes largely to pollution in urban centres. What measures could the local municipality put in place to decrease pollution caused in these industrial areas? (2x2) (4)

4.4 Study FIGURE 4.4 which shows an image of informal housing.

4.4.1 Identify the type of settlement where the house depicted in FIGURE 4.4 is found. (1x1) (1)

4.4.2 Give TWO points of evidence from FIGURE 4.4 to support your answer to Question 4.4.1. (2x1) (2)

4.4.3 Describe why the type of settlement mentioned in Question 4.4.1 is vulnerable to hazards like fire? (2x2) (4)

4.4.4 In a paragraph of not more than EIGHT lines, explain why the type of settlement mentioned in Question 4.4.1 is growing at a fast rate, despite local municipalities discouraging its development. (4x2) (8)

4.5 Read FIGURE 4.5 which is an article on mining in South Africa.

4.5.1 State the main reason why South African mining is in a crisis mode. (1x1) (1)

4.5.2 Give a reason for the proposed job cuts mentioned in the article. (1x1) (1)

4.5.3 Explain why the proposed job cuts are angering labour unions. (2x2) (4)

4.5.4 Propose ONE possible measure that Anglo-American can introduce to improve relations with labour unions. (1x2) (2)

4.5.5 Outline how the decreased income from mining will impact on the GDP and economy of South Africa. (2x2) (4)

4.5.6 Apart from labour issues, there are many physical problems that must be overcome in underground mines. Mention ONE of these physical problems. (1x2) (2)

4.6 The PWV industrial region contributes the most to South Africa's GDP.

4.6.1 What does the term *GDP* mean? (1x1) (1)

4.6.2 In which province is the PWV industrial region located (1x1) (1)

4.6.3 Suggest TWO factors that favoured the development of metal processing industries in the PWV industrial region. (2x2) (4)

4.6.4 Mention ONE contribution of the PWV industrial region to the economic development of the province in which it is located. (1x2) (2)

4.6.5 In a paragraph of approximately EIGHT lines, discuss any FOUR factors which limit industrial expansion in this industrial area. (4x2) (8)

[75]

TOTAL: 225

END