education
MPUMALANGA PROVINCE
REPUBLIC OF SOUTH AFRICA

Steve Tshwete 3

GRADE 11

GEOGRAPHY

CONTROLLED TEST NO 1

11 MARCH 2024

MARKS: 60

This paper consists of 7 pages.

INSTRUCTIONS AND INFORMATION

1. The question paper consists of five sub-questions questions.
2. All diagrams are included in the QUESTION PAPER.
3. Where possible, illustrate your answers with labelled diagrams.
4. Leave a line between subsections of questions answered.
5. Start EACH question at the top of a new page of a NEW page.
6. Number the questions correctly according to the numbering system used in this question paper.
7. Do NOT write in the margins of the ANSWER BOOK.

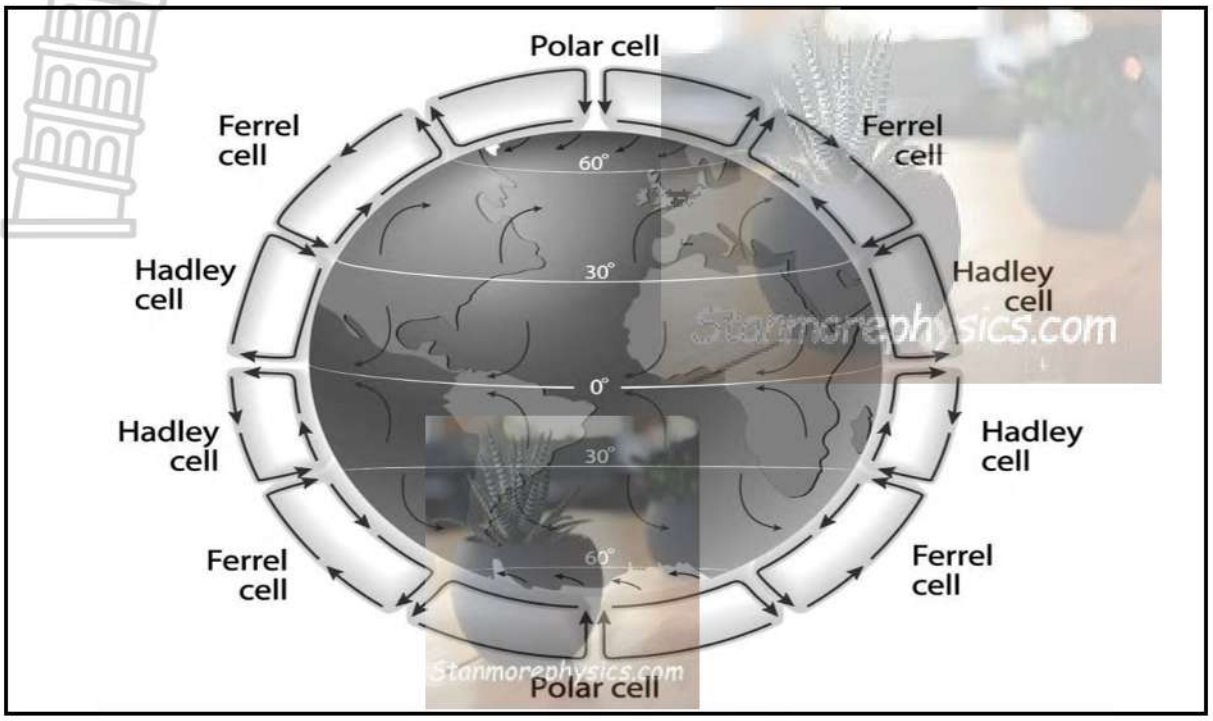
QUESTION 1

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

COLUMN A		COLUMN B	
1.1.1	Winds that form in the mid-latitude / Ferrel Cell	A	Air pressure gradient
1.1.2	Vertical loss of heat	B	Adiabatic / lapse rate
1.1.3	Convergence zone of north- eastern and south-eastern trade winds	C	Air mass
1.1.4	The force which develops due to differences in air pressure	D	Earth's radiation
1.1.5	Very strong winds blowing 10 km above the earth's surface	E	ITCZ
1.1.6	Decrease in temperature caused by a change in air pressure	F	Westerlies
1.1.7	The zone where westerly winds and polar easterlies meet	G	Solar radiation
1.1.8	Large body of air with uniform properties	H	Jet stream
		I	Polar front

(8 x 1) (8)

FIGURE 1.2: TRI-CELLULAR AIR CIRCULATION



[Source: slideplayer.net]

1.2 Refer to FIGURE 1.2 on tri-cellular air circulation. Match the descriptions below with one of the POLAR, HADLEY or FERREL cells. Choose the answer and write only the cell next to the question numbers (1.2.1 to 1.2.7) in the ANSWER BOOK, for example 1.2.8 POLAR. You may choose the same cell more than once.

1.2.1 Circulates air between 60° – 90° latitudes

1.2.2 Air rises near the equator and diverges polewards

1.2.3 Air circulation is in the mid-latitudes

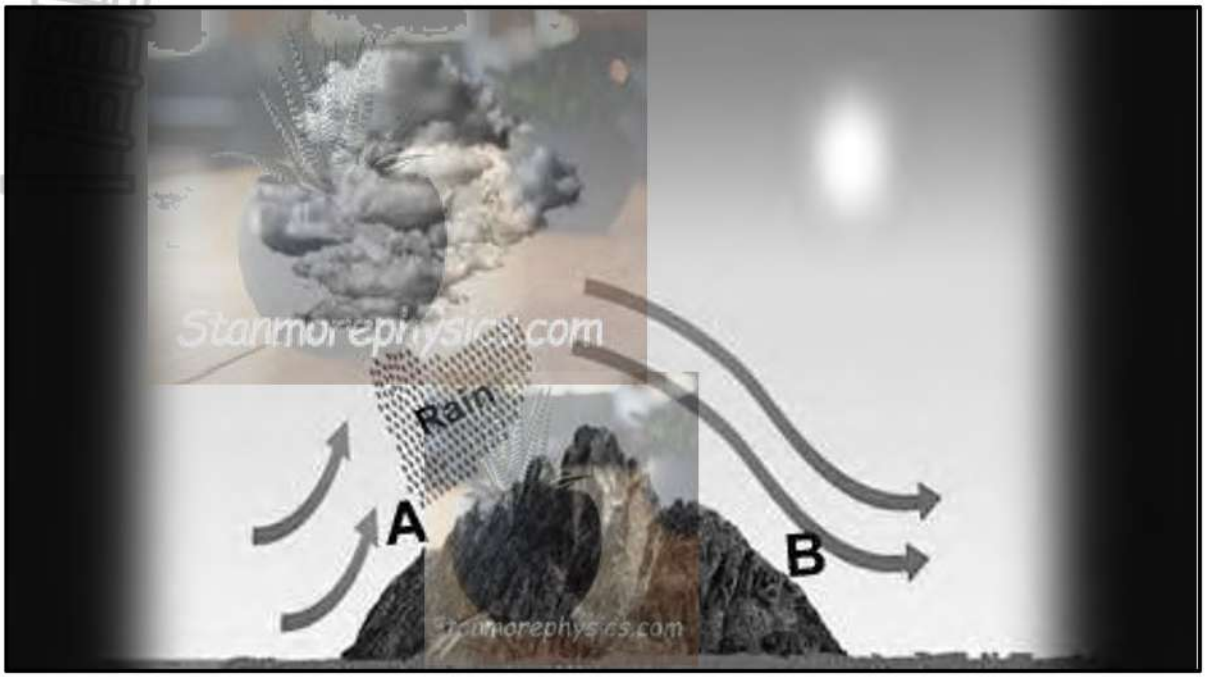
1.2.4 Associated with tropical air mass circulation

1.2.5 Cold easterly winds originate in this cell

1.2.6 This cell generates the westerly wind belt

1.2.7 Trade winds originate in this cell (7 x 1) (7)

FIGUUR 1.3: FÖHN WIND



[Source: ownyourweather.com]

1.3 FIGURE 1.3 is a representation of a Föhn wind.

1.3.1 Why is a Föhn wind an example of a regional wind (1 x 1)(1)

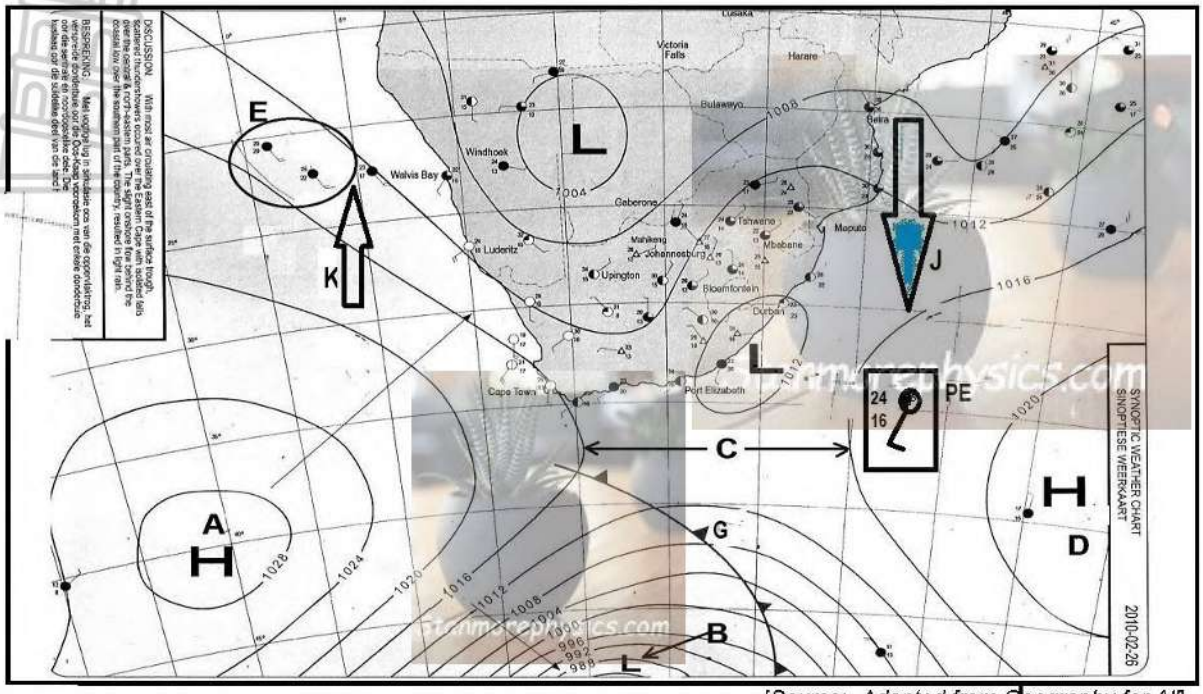
1.3.2 Name the side of the mountain at **A**, in the formation of Föhn winds. (1x1) (1)

1.3.3 Why does rain occur at **A** (1 x 1) (1)

1.3.4 Discuss why the air descending at **B** will be warm and dry. (2 x 2) (4)

1.3.5 In a paragraph of approximately EIGHT lines, explain the impact that the descending air at **B** will have on people living on that side of the mountain. (4 x 2) (8)

1.4 SYNOPTIC WEATHER MAP FEATURES



[Source: *Adapted from Geography for All*]

1.4.1 What are the lines that join places of equal atmospheric pressure called ? (1x1)(1)

1.4.2 Determine the isobaric interval around the meteorological system labelled **L** next to Windhoek (1x2)(2)

1.4.3 Identify the ocean currents labelled **J** and **K** (2x1)(2)

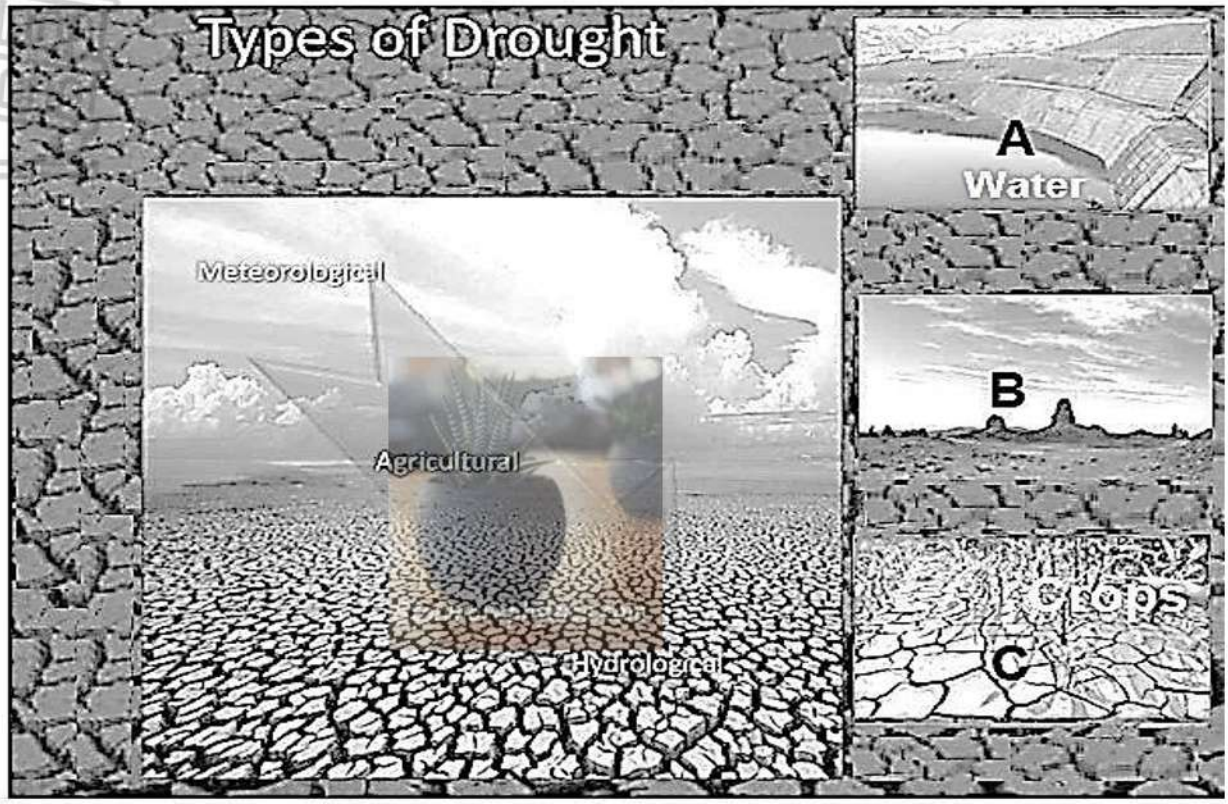
1.4.4 Name the front marked **G** (1x1)(1)

1.4.5 Explain how the ocean current marked J influences the moisture and temperature characteristics of the air on the east coast of South Africa (2x2)(4)

1.4.6 Interprete the weather at Port Elizabeth (enlarged as **PE**) by describing the following weather elements :

(a) Cloud cover
(b) Air temperature
(c) Dew point temperature
(d) Wind direction
(e) Wind speed (5x1)(5)

FIGURE 1.5 TYPES OF DROUGHT



[Source: Adapted from sageography.myschoolstuff.co.za]

1.5 FIGURE 1.5 depicts different types of drought.

1.5.1 Define the term *drought.* (1 x 2) (2)

1.5.2 Classify the types of drought at **A**, **B** and **C**. (3 x 1) (3)

1.5.3 Evaluate the relationship between the types of drought at **B** and **C**. (2 x 2) (4)

1.5.4 Explain the social impact that drought will have on farming communities. (3 x 2) (6)

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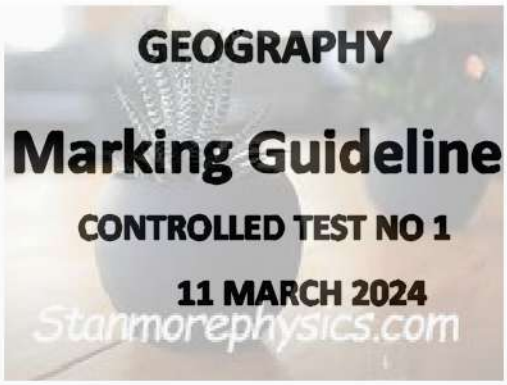

MARKS: 60
This memo consist of 5 pages.

1.1 1.1.1 F (Westerlies) (1)

1.1.2 D (Earth's radiation) (1)

1.1.3 E (ITCZ) (1)

1.1.4 A (Air pressure gradient) (1)

1.1.5 H (Jet stream) (1)

1.1.6 B (Adiabatic) (1)

1.1.7 I (Polar front) (1)

1.1.8 C (Air mass) (1) (8 x 1) (8)

1.2 1.2.1 Polar (1)

1.2.2 Hadley (1)

1.2.3 Ferrel cell (1)

1.2.4 Hadley (1)

1.2.5 Polar (1)

1.2.6 Ferrel (1)

1.2.7 Hadley (1) (7 x 1) (7)

1.3 1.3.1 It affects only smaller areas and only blows at certain times of the year (1)

[**CONCEPT**] (1 x 1) (1)

1.3.2 Windward (1) (1 x 1) (1)

1.3.3 Moist air rising on the windward side of the mountain (1)
Cooling causes water vapour to condense to form clouds (1)
Clouds are evident at **A** (1)
[**ANY ONE**] (1 x 1) (1)

1.3.4 Moisture is released at the windward side (2)
Moisture evaporates as air descents (2)
The temperature increases adiabatically as air descents (2)
[**ANY TWO**] (2 x 2) (4)

1.3.5 There is a possibility of fires that can cause destruction (accept examples) (2)
Vegetation/crops can dry out, affecting agriculture (2) It can cause dehydration of the vulnerable like children and the aged (2)
It can cause snow to melt in certain countries causing avalanches and floods (2)
Due to floods, avalanches can cause widespread destruction and even death (2)
Crops can get washed away (2)
[ANY FOUR] (4 x 2) (8)

1.4

1.4.1 Isobars (1x1)(1)

1.4.2 4 hPa / 4 mb (1x2)(2)

1.4.3 J-(Warm) Mozambique / Agulhas current (1x1)(1)

K-(Cold) Benguela current (1x1)(1)

1.4.4 Cold front (1x1)(1)

1.4.5 The warm ocean current raises the temperature along the East Coast (2) and as a result the air contains more moisture (2)
The air is (relatively) moist / has more moisture content (2) and

high temperature / cold (2) (2x2)(4)

1.4.6 (a) Cloud cover - $\frac{1}{2}$
(b) Air temperature - 24^0C
(c) Dew Point temperature - 16^0C
(d) Wind direction - South west
(e) Wind speed - 10 knots (5x1)(5)

1.5

1.5.1 Drought is a lengthy period with little or no rainfall that impacts on the demands of human activities (1)
(**Concept**) (1 x 2) (2)

1.5.2 A – Hydrological drought (1)
B– Meteorological drought (1)
C – Agricultural drought (1) (3 x 1) (3)

1.5.3 If there is a decrease in rainfall the crop output will also decrease (2) The longer a meteorological drought exists, the less the agricultural output will be (2) (2 x 2) (4)

1.5.4 Water shortages can lead to conflicts between community members (2)
Unproductive land leads to poverty (2)
Rural-urban migration due to food shortages and food insecurity (2)
Multiplier effect of rural-urban migration (2)
Job shortages due to less investment, leads to social evils like drug abuse, gangsterism, prostitution, etc. (2)
(**Any Three**) (3 x 2) (6)