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Province of the EASTERN CAPE EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 11

NOVEMBER 2025

GEOGRAPHY P1

MARKS: 150

TIME: 3 hours

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This question paper consists of 16 pages.

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INSTRUCTIONS AND INFORMATION

1. This question paper consists of TWO SECTIONS:

   SECTION A:
   QUESTION 1: The Atmosphere (60)
   QUESTION 2: Geomorphology (60)

   SECTION B:
   QUESTION 3: Geographical Skills and Techniques (30)

2. Answer all THREE questions.
3. ALL diagrams are included in the QUESTION PAPER.
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 the ANSWER BOOK.
8. Draw fully labelled diagrams when instructed to do so.
9. Answer in FULL SENTENCES, except when you have to state, name, identify or list.
10. Units of measurement MUST be indicated in your final answer, e.g. 1 010 hPa, 9 °C and 25 m.
11. You may use a non-programmable calculator.
12. You may use a magnifying glass.
13. Write neatly and legibly.

SPECIFIC INSTRUCTIONS AND INFORMATION FOR SECTION B

14. A 1 : 50 000 topographical map (EXTRACT from 2930 AC and AD HOWICK) and 1 : 10 000 (EXTRACT from 2930AC 25 HOWICK ortho-rectified image) an orthophoto map of a part of the mapped area are provided.
15. The area demarcated in RED/BLACK on the topographic map represents the area covered by the orthophoto map.
16. Show ALL calculations. Marks will be allocated for this.
17. You must hand in the topographic and the orthophoto map to the invigilator at the end of this examination session.

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SECTION A: CLIMATE AND WEATHER AND GEOMORPHOLOGY

QUESTION 1: THE ATMOSPHERE

1.1 Complete the statements in COLUMN A with the options in COLUMN B. Write only **Y** or **Z** next to the question numbers (1.1.1 to 1.1.8) in the ANSWER BOOK, example 1.1.9 Z.

	COLUMN A		COLUMN B
1.1.1	Incoming solar energy reaching a given area	**Y** **Z**	terrestrial radiation insolation
1.1.2	The manner in which heat is evened out between the polar areas and the equator	**Y** **Z**	albedo energy balance
1.1.3	The earth turns around its imaginary axis once every 24 hours.	**Y** **Z**	rotation revolution
1.1.4	The time of the year when midday sun is directly overhead at one of the tropics	**Y** **Z**	equinox solstice
1.1.5	Circular pattern on a global scale	**Y** **Z**	primary circulation global air circulation
1.1.6	Difference in air pressure causing air to move from high pressure to low pressure	**Y** **Z**	pressure gradient Coriolis force
1.1.7	Zones of high pressure and low-pressure areas found at different latitudes	**Y** **Z**	pressure belts polar front
1.1.8	The cell of air circulation that occurs between 30º – 60º North and South	**Y** **Z**	Ferrell cell polar cell

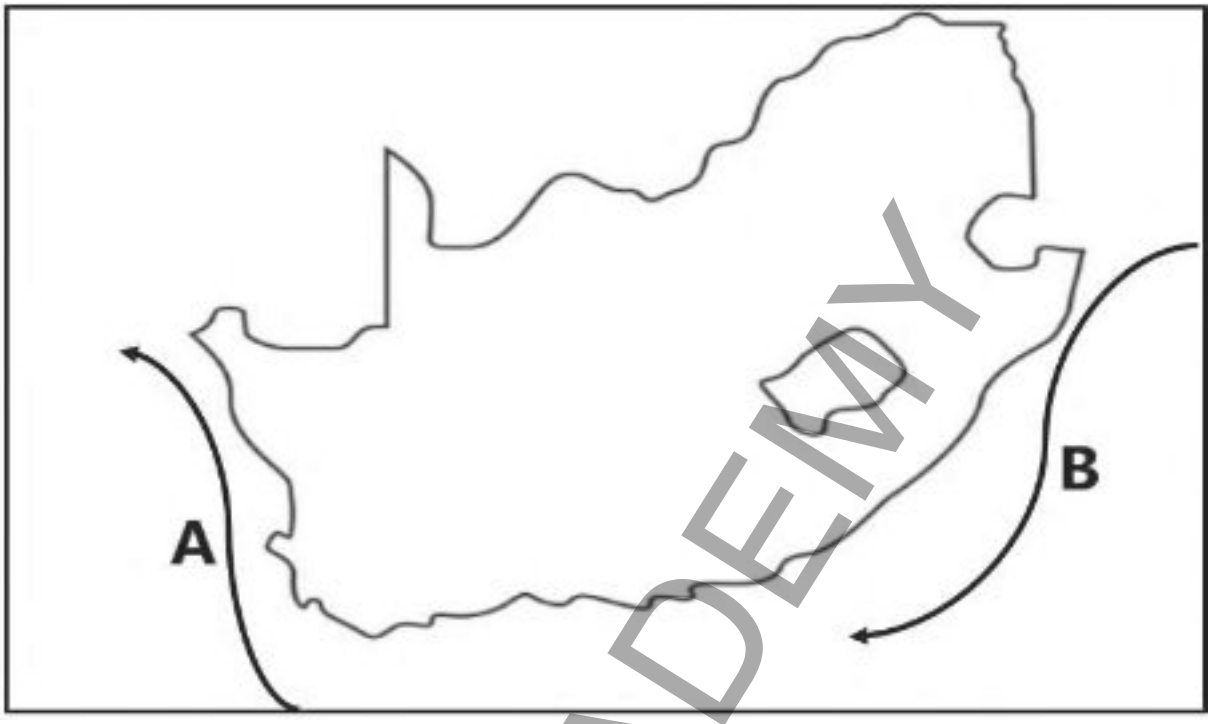
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1.2 Refer to the sketch below and answer the questions that follow. Choose the answer and write only the letters (A–D) next to the question numbers (1.2.1 to 1.2.7) in the ANSWER BOOK, for example 1.2.8 C.



[Source: Examiner's own sketch]

1.2.1 … are large movements of water that occur in all the oceans of the world.

A Ocean currents
B Tides
C Streams
D Waves

1.2.2 The ocean on the West Coast of South Africa is called the …

A Atlantic Ocean.
B Indian Ocean.
C Pacific Ocean.
D Benguela Ocean.

1.2.3 The exchange of heat between the ocean and the atmosphere mainly occurs through …

A ocean salanity.
B wind and evaporation.
C sea floor spreading.
D tidal action.

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1.2.4 The … is the ocean current that flows along **B**.

A Canary Current
B Mozambique Current
C Benguela Current
D Kuroshio Current

1.2.5 The ocean currents play a combined role in redistributing heat energy by …

A increasing temperature.
B decreasing temperature.
C moderating temperatures.
D increasing rainfall.

1.2.6 The cold Benguela Current transfers … air from the poles to the … zone.

A warm; coastal
B cold; temperate
C warm; desert
D cold; coastal

1.2.7 Warm ocean currents move from the … to the …

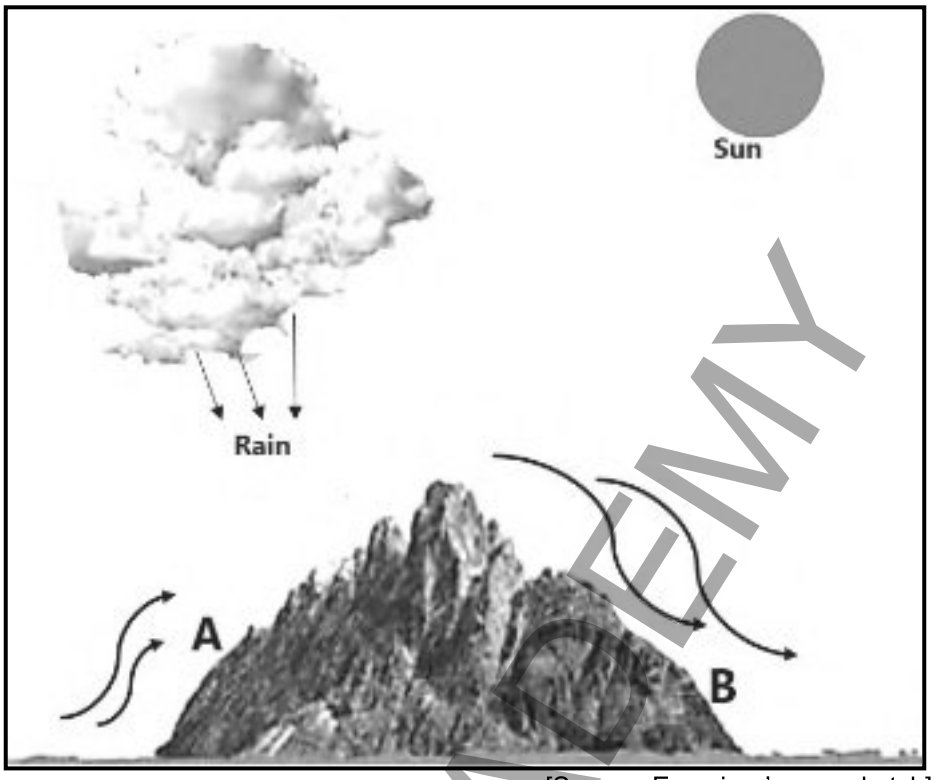
A poles; equator.
B west; poles.
C equator; poles.
D east; equator. (7 x 1) (7)

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1.3 Refer to the sketch below and answer the questions that follow.



[Source: Examiner's own sketch]

1.3.1 Does the wet adiabatic lapse rate occur at **A** or **B**? (1 x 1) (1)

1.3.2 Classify any TWO natural disasters that Föhn winds and other similar kinds of winds can cause. (2 x 1) (2)

1.3.3 Why is the Föhn wind an example of a regional wind? (1 x 2) (2)

1.3.4 Explain why no rain occurs on the leeward side of the mountain. (1 x 2) (2)

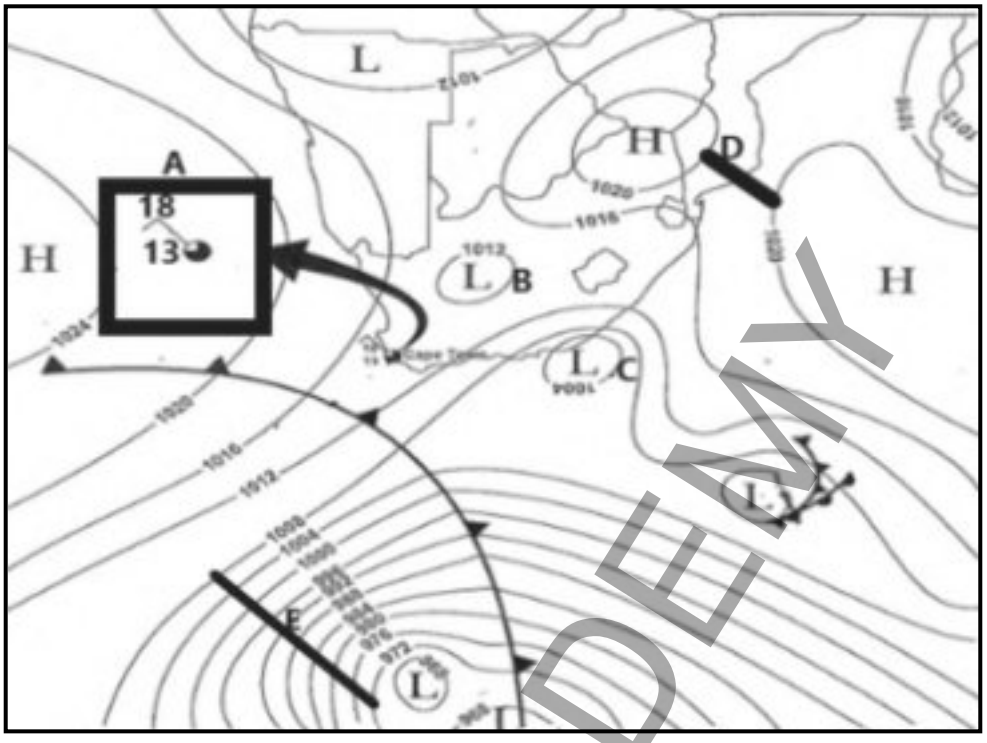
1.3.5 Suggest measures to reduce fires caused by Föhn winds. (4 x 2) (8)

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1.4 Refer to the synoptic weather map of Southern Africa.



1.4.1 Determine the pressure reading at **B**. (1 x 1) (1)

1.4.2 Provide the term given to area **D** on the map. (1 x 1) (1)

1.4.3 Give evidence from the synoptic weather map to prove that feature **C** is a low-pressure cell. (2 x 1) (2)

1.4.4 The synoptic weather map represents winter. Provide evidence from the map. (2 x 2) (4)

1.4.5 Determine the weather conditions experienced at **A** by focusing on:

(a) Cloud cover

(b) Wind direction

(c) Dew point temperature (3 x 1) (3)

1.4.6 Comment on the pressure gradient at **E** and the resultant wind speed. (2 x 2) (4)

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1.5 Read the extract below on the effects of drought and desertification in Harry Gwala District Municipality.

DROUGHT AND DESERTIFICATION

Drought and desertification in the Harry Gwala District Municipality, KwaZulu-Natal, impact communities through reduced water availability, diminished crop production and loss of agricultural land. This is leading to food insecurity and potential migration to urban areas. These events also cause increased run-away fires, high erosion and loss of species and habitat.

1.5.1 What is *desertification*? (1 x 2) (2)

1.5.2 Quote, from the extract, environmental impacts caused by the events of drought and desertification. (3 x 1) (3)

1.5.3 Outline the natural causes of desertification. (2 x 2) (4)

1.5.4 Recommend THREE management strategies to reduce desertification. (3 x 2) (6)

[60]

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QUESTION 2: GEOMORPHOLOGY

2.1 Complete the statements in COLUMN A with the options in COLUMN B. Write only **Y** or **Z** next to the question numbers (2.1.1 to 2.1.8) in the ANSWER BOOK, for example 2.1.9 Z.

	COLUMN A		COLUMN B
2.1.1	Cuestas is found in topography associated with …	**Y** **Z**	horizontal layers inclined layers
2.1.2	The landform where the layers dip at 25º to 45º	**Y** **Z**	homoclinal ridge hogsback
2.1.3	Breaking down of rocks due to extreme temperatures	**Y** **Z**	mechanical weathering chemical weathering
2.1.4	Top soil becomes saturated and slides on the frozen ground beneath it	**Y** **Z**	solifluction soil creep
2.1.5	The scarp slope faces towards the centre of the dome and the dip slope faces towards the outwards	**Y** **Z**	cuesta basin cuesta dome
2.1.6	Mushroom shaped intrusion of magma	**Y** **Z**	laccolith lopolith
2.1.7	Vertical intrusion along sedimentary rocks	**Y** **Z**	dykes sills
2.1.8	The factor that distinguishes cuestas from homoclinal ridges is the …	**Y** **Z**	angle of the dip slope type of resistant rock

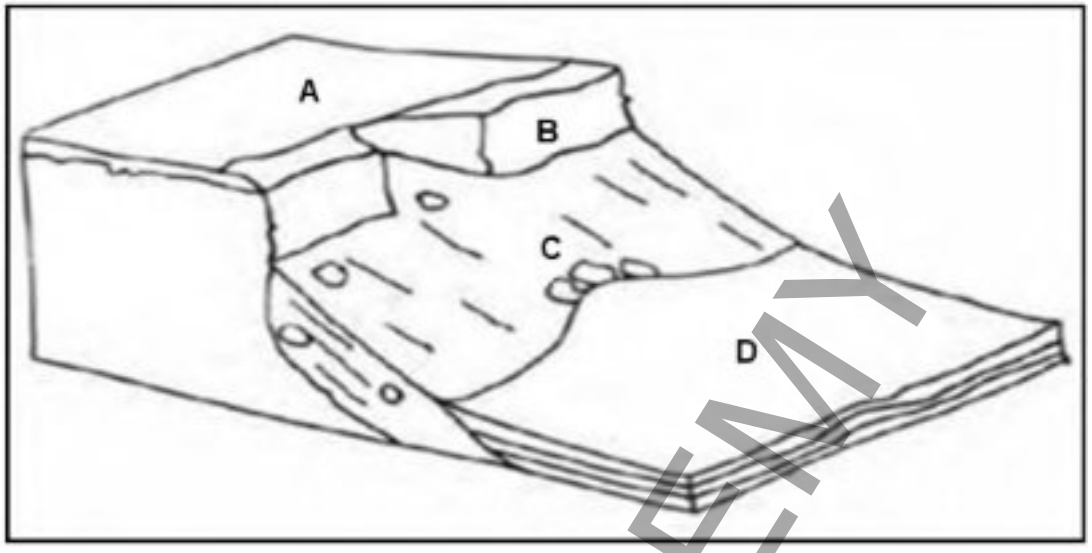
(8 x 1) (8)

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2.2 Refer to the sketch below showing slope elements and answer the questions that follow. Write only the letter (A–D) next to the question numbers (2.2.1 to 2.2.7) in the ANSWER BOOK, for example 2.2.8 C.



[Source: lotusarise.com]

2.2.1 Weathered material from the cliff and crest accumulates here.

2.2.2 Also known as the free face.

2.2.3 Covered with sediments from the talus slope.

2.2.4 It has a convex slope.

2.2.5 The cliff retreats backward due to erosion.

2.2.6 The dominant geomorphological processes taking place here are weathering and soil creep.

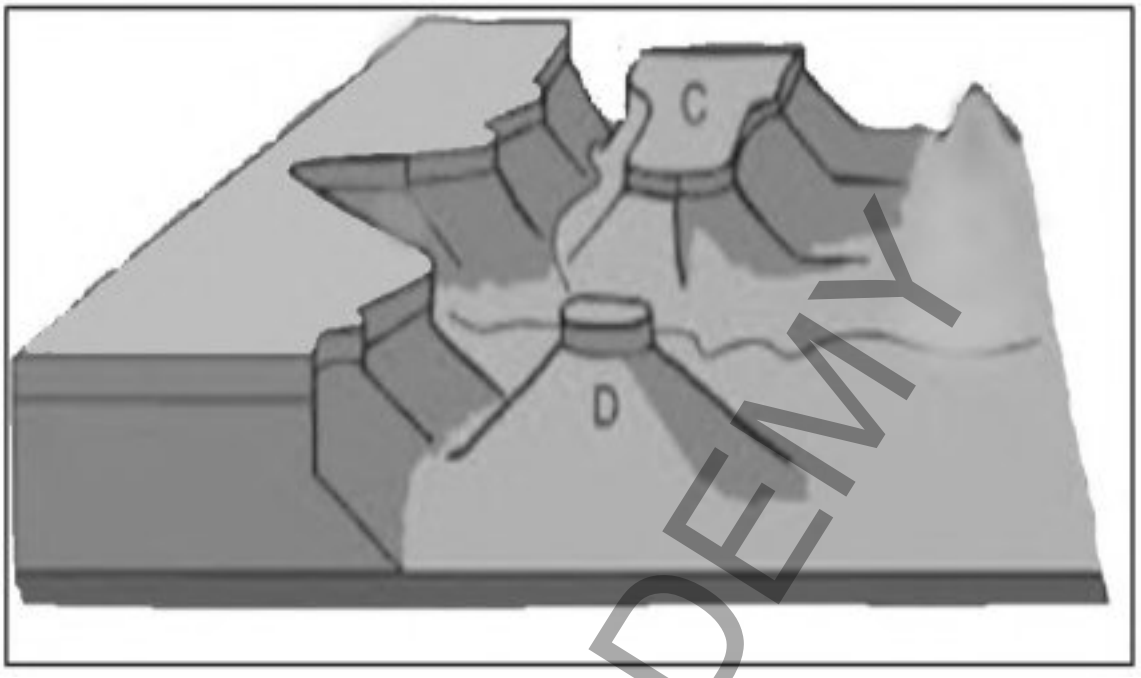
2.2.7 Vegetation grows better on this slope. (7 x 1) (7)

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2.3 Refer to the sketch below showing topography associated with horizontally layered rocks.



[Adapted from lotusarise.com]

2.3.1 The process that is responsible for the widening of the valleys is (scarp retreat / tectonic forces). (1 x 1) (1)

2.3.2 Comment on the general climate of this area. (1 x 2) (2)

2.3.3 Identify the landforms labelled **C** and **D**. (2 x 1) (2)

2.3.4 Distinguish between landforms **C** and **D**. (2 x 2) (4)

2.3.5 Briefly discuss the impact of the utilisation of this landscape by humans. (3 x 2) (6)

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2.4 Refer to the sketch below showing tors.



[Source: internetgeography.net]

2.4.1 What are *tors*? (1 x 2) (2)

2.4.2 Mention ONE igneous intrusion from which tors develop. (1 x 1) (1)

2.4.3 Describe the characteristics of the rocks mentioned in QUESTION 2.4.2. (2 x 2) (4)

2.4.4 In a paragraph of approximately EIGHT lines, explain how tors develop. (4 x 2) (8)

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2.5 Refer to the photograph and extract below showing mass movement.

HEAVY RAINS TRIGGER LANDSLIDES IN PORT ST. JOHNS, EC

FRIDAY 24 MARCH 2023 – 10:30 am



Heavy rainfall in Port St. Johns has recently triggered landslides and widespread flooding, causing significant damage to homes, roads and infrastructure. Mayor Nomvuzo Mlobile Cingos says she 'is expecting disaster management teams to arrive in the next few hours'. Gift of the Givers has also volunteered to help those affected by floods.

[Adapted from www.enca.com]

2.5.1	What is *mass movement*?	(1 x 2)	(2)
2.5.2	According to the extract, mention the factor that has triggered mass movement.	(1 x 1)	(1)
2.5.3	Give evidence from the photograph, that landslides have taken place.	(2 x 1)	(2)
2.5.4	Explain the negative impact that these landslides have on people.	(2 x 2)	(4)
2.5.5	Suggest THREE strategies that can be put in place to minimise the impact of landslides.	(3 x 2)	(6)
			[60]
		TOTAL SECTION A:	**120**

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SECTION B

QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES

GENERAL INFORMATION ON HOWICK



Co-ordinates: 20º28' S: 30º14'E

Howick is a town located in the Umngeni Local Municipality of KwaZulu-Natal Province, South Africa. The town is 1 050 m above sea level, and about 88 kilometres from the port city of Durban. It experiences warm summers and cool dry winters.

[Adapted from https://en.wikipedia.org/wik/Howick. South Africa]

The following English terms and their Afrikaans translations are shown on the topographic and orthophoto map:

ENGLISH	AFRIKAANS
Waterfall	Waterval
Nature reserve	Natuurreservaat
Show grounds	Skougronde
River	Rivier
Golf Course	Gholfbaan
Parks	Parke

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3.1 MAPWORK SKILLS AND CALCULATIONS

3.1.1 The orthophoto map is an example of a … photograph.

A high angle oblique
B low angle oblique
C horizontal aerial
D vertical aerial (1)

3.1.2 The scale of the orthophoto map is … times … than the scale of the topographical map.

(i) five
(ii) ten
(ii) smaller
(iv) larger

A (i) and (iii)
B (i) and (iv)
C (ii) and (iii)
D (iii) and (iv) (1)

3.1.3 On the orthophoto map, the distance from point **10** to point **11** is … km.

A 0,8
B 0,16
C 1,6
D 8 (1)

3.1.4 … is the photo number for the orthophoto map.

A 29
B 30
C 25
D AC (1)

3.1.5 Determine the grid reference/co-ordinates for the feature at point **H** on the topographic map. Write down ONLY the information that is not available in this question.

A _____ ° 25' 32,4" S (1 x 1) (1)

B 30º ____' ____"E (2 x 1) (2)

Refer to the topographic map to answer the following question.

3.1.6 Calculate the magnetic declination of the given map for the present year.

Use the following information:
Difference in years = 13 years
Mean annual change = 2' (3 x 1) (3)

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3.2 MAP INTERPRETATION

3.2.1 (a) State the general flow direction of river **G** (block **B2**). (1 x 1) (1)

(b) Give evidence from the topographic map to support the answer in QUESTION 3.2.1(a). (1 x 2) (2)

3.2.2 Give the climatological reason for the numerous dams (perennial water) on the topographic map. (1 x 2) (2)

3.2.3 (a) Is Howick Falls at point **F** (Block **E2**) on the topographic map intervisible with the caravan park in point **I** (Block **E2**)? (1 x 1) (1)

(b) Provide a reason for the answer in QUESTION 3.2.3(a). (1 x 2) (2)

Refer to the orthophoto map.

3.2.4 The landform at point **8** is a ridge.

(a) Define the term *ridge*. (1 x 2) (2)

(b) Outline the significance of a ridge. (1 x 2) (2)

3.3 GEOGRAPHIC INFORMATION SYSTEMS (GIS)

3.3.1 The data layers evident at point **9** on the orthophoto map are:

(i) Transport
(ii) Drainage
(iii) Relief/Topography
(iv) Infrastructure

A (i) and (ii)
B (ii) and (iii)
C (iii) and (iv)
D (ii) and (iii) (1 x 1) (1)

3.3.2 Is the topographic or orthophoto map a primary source? (1 x 1) (1)

3.3.3 Give a reason for the answer in QUESTION 3.3.2. (1 x 2) (2)

3.3.4 Explain the difference between *spatial resolution* and *spectral resolution*. (2 + 2) (4)

[30]

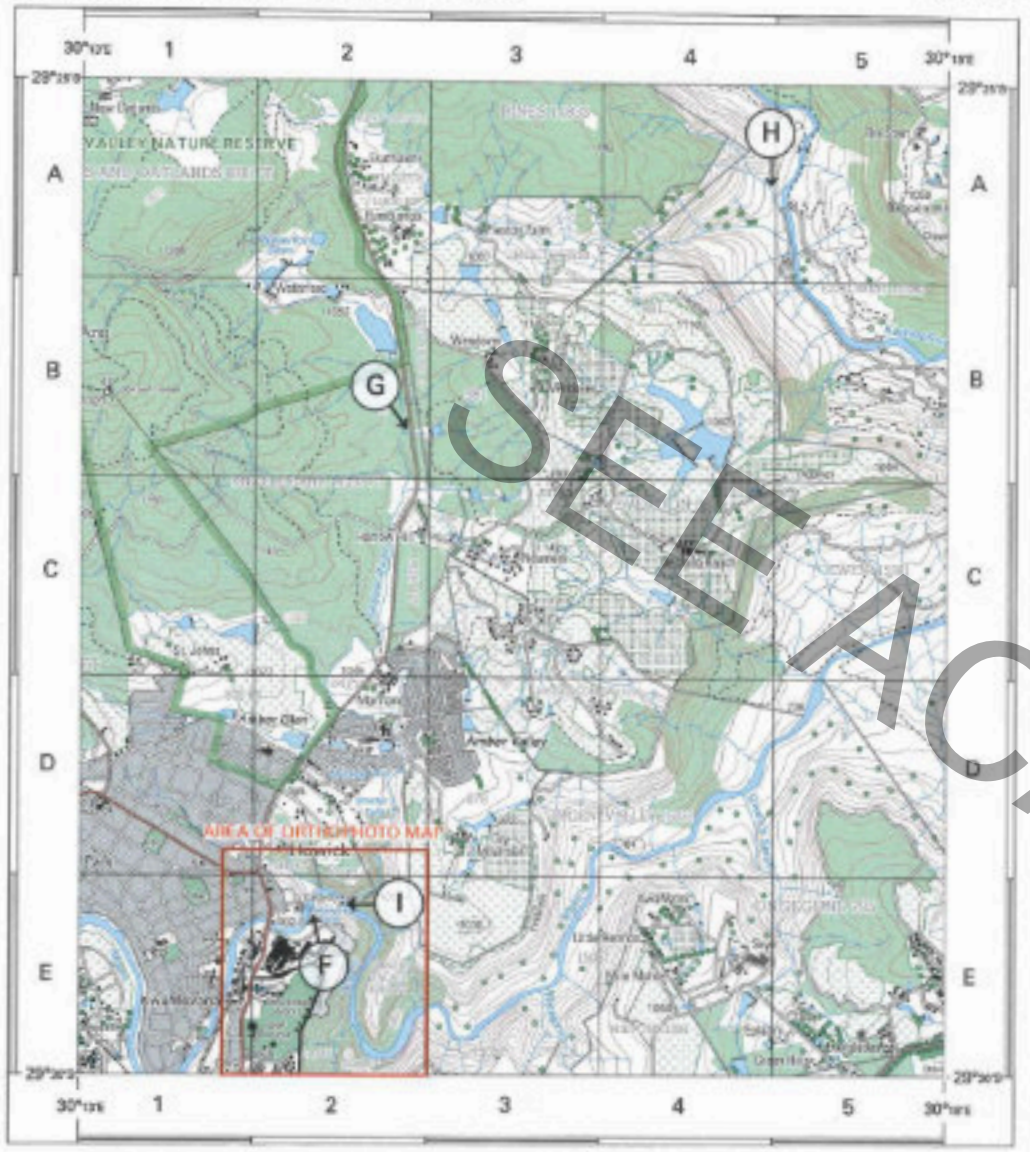
TOTAL SECTION B: 30
GRAND TOTAL: 150

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EXTRACT FROM 2930AC & AD HOWICK

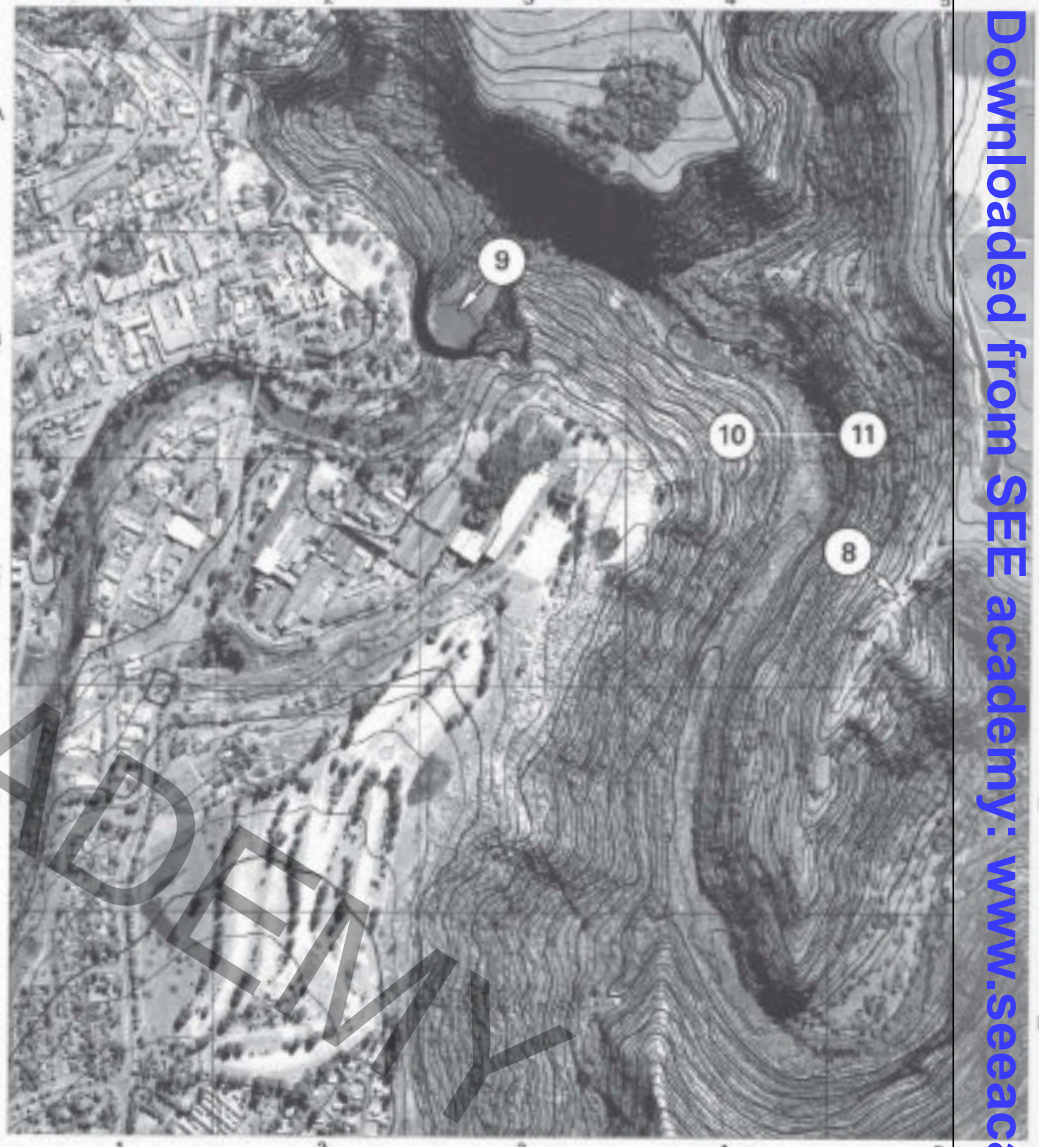
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EXTRACT FROM 2930AC 25 HOWICK ortho - rectified image

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VERKLARING

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