

EXAMINATION		NATIONAL SENIOR CERTIFICATE
GRADE		12
DATE		MAY/JUNE 2026
SUBJECT		GEOGRAPHY
PAPER		1
MARK TOTAL		150
DURATION (HOURS)		3
NUMBER OF PAGES		19



SOUTH AFRICAN COMPREHENSIVE ASSESSMENT INSTITUTE
SUID-AFRIKAANSE KOMPREENSIEWE ASSESSERINGSINSTITUUT



INSTRUCTIONS AND INFORMATION

1. This question paper consists of **THREE** questions.

SECTION A:

QUESTION 1: CLIMATE AND WEATHER (60 MARKS)

QUESTION 2: GEOMORPHOLOGY (60 MARKS)

SECTION B:

QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES (30 MARKS)

2. Answer **ALL THREE** questions.
3. Leave a line between subsections of questions answered.
4. Start **EACH** question at the top of a **NEW** page.
5. Number the answers correctly according to the numbering system used in this question paper.
6. Answer questions in **FULL SENTENCES**, except where you have to state, name, identify or list. Write in full sentences when answering paragraph questions.
7. Units of measurement **MUST** be indicated in your final answer, e.g. 1040 hPa, 35 °C, 60 km.
8. No scale rulers are allowed.
9. You may use a non-programmable calculator.
10. Write neatly and legibly, in **BLUE** ink only.
11. Draw diagrams and label them fully if asked to do so.

SECTION B: ADDITIONAL INSTRUCTIONS AND INFORMATION

12. Extracts from a 1:50 000 topographical map **3219CA CITRUSDAL** and a 1:10 000 orthophoto map **3219 CA 6 CITRUSDAL** that form of a part of the mapped area are provided.
13. The position of features on the topographical map are indicated by alphabetical letters such as **G, H, J ...** etc. and numbers **1, 2, 3 ...** etc. on the orthophoto map if applicable.
14. Show **ALL** calculations. Marks are allocated for the calculations/steps and **NOT** full marks for the correct answer only. The correct substitution should be indicated for the stated formula.
15. Return the topographical map and orthophoto map to the invigilator at the end of the examination session.

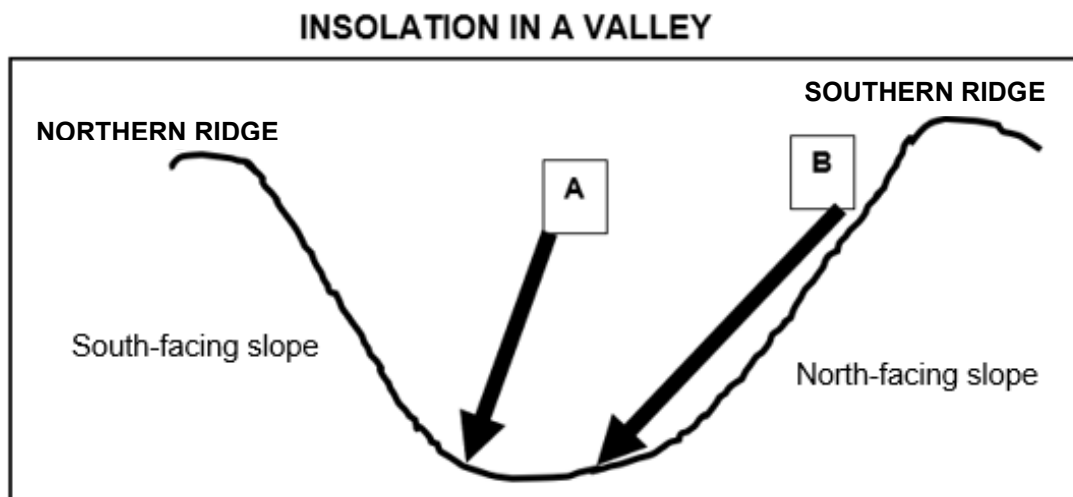


SECTION A

QUESTION 1: CLIMATE AND WEATHER

1.1 Four options are provided as possible answers to the following questions. Choose the correct answer and write only the correct letter (A–D) next to the question numbers (1.1.1 to 1.1.8) in the ANSWER BOOK, for example 1.1.9. A.

Refer to the sketch below to answer QUESTIONS 1.1.1 to 1.1.3.



[Source: Examiner]

1.1.1 The insolation at **A** in the sketch represents ... heating a ... surface area in the valley.

- i summer
- ii winter
- iii smaller
- iv larger

- A i and ii
- B i and iii
- C ii and iii
- D ii and iv

1.1.2 An area that does not receive any direct sunlight is called a/the ...

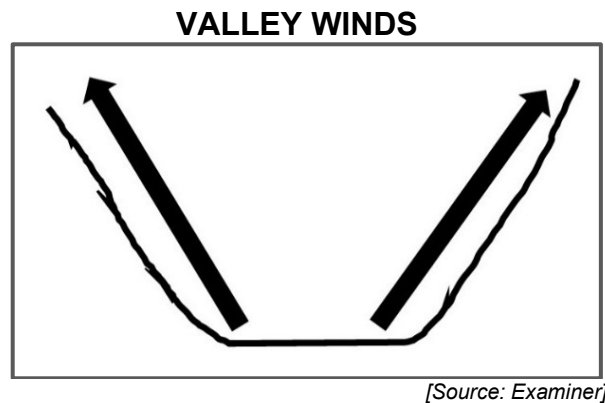
- A aspect.
- B angle of insolation.
- C slope aspect.
- D shadow zone.



1.1.3 The sketch represents a valley in the hemisphere.

- A Eastern
- B Northern
- C Western
- D Southern

Refer to the sketch below to answer QUESTIONS 1.1.4 and 1.1.5.



1.1.4 The sketch represents air movement during the ...

- A day.
- B night.
- C summer.
- D winter.

1.1.5 The winds blow up the valley slopes due to ...

- A terrestrial radiation.
- B heating of the valley floor by sunlight.
- C a high pressure on the valley floor.
- D the top of the valley being colder than the valley floor.

1.1.6 A thermal belt does NOT usually form in a valley during ...

- A the night.
- B winter.
- C summer.
- D cloudless conditions.



1.1.7 For a frost pocket to form in a valley the temperature at the bottom of the valley must be ...

- A 5 °C or higher.
- B above 0 °C.
- C very high.
- D below 0 °C.

1.1.8 Radiation fog forms when ... takes place.

- A condensation
- B sublimation
- C terrestrial radiation
- D insolation

(8x1)(8)



- 1.2 Choose the correct description in **COLUMN B** that matches the term/concept in **COLUMN A**. Write only the letter (A–H) next to the question numbers (1.2.1 to 1.2.7) in the ANSWER BOOK, for example 1.2.8 J.

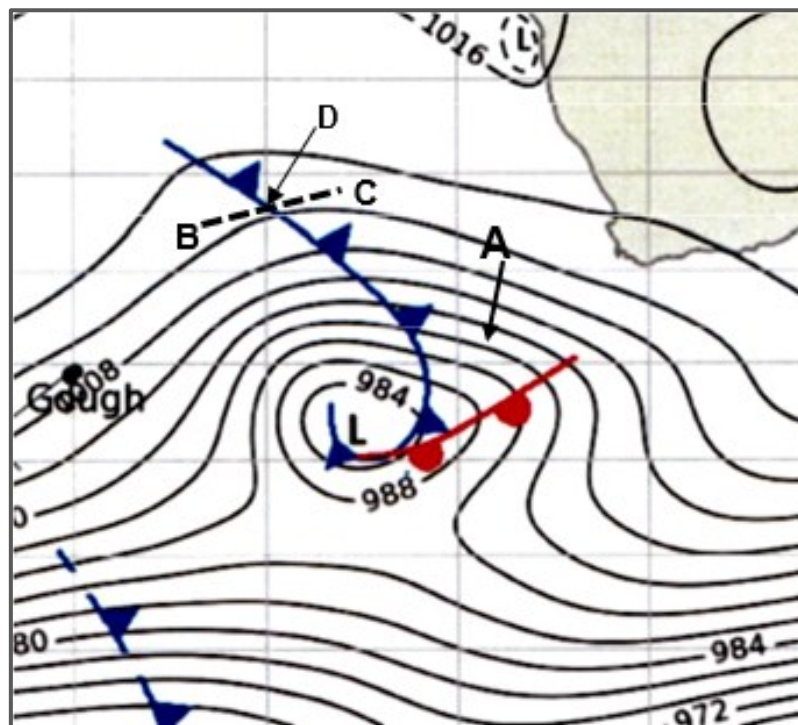
COLUMN A		COLUMN B	
1.2.1	Urban heat island	A	The number of hygroscopic nuclei present.
1.2.2	A factor affecting temperature in a city	B	Pollution trapped by an overlying high-pressure cell.
1.2.3	Concrete surfaces	C	Smoke mixed with fog.
1.2.4	A factor affecting humidity	D	Cool air moves in towards the city during the night.
1.2.5	Pollution dome	E	Large surface areas of high-rise buildings.
1.2.6	Smog	F	Decreases the temperature.
1.2.7	Light reflective surfaces	G	The temperature decreases from the city centre towards the outskirts.
		H	Absorbs more heat than vegetation.

(7x1)(7)



1.3 An extract from a synoptic weather map showing a mid-latitude cyclone.

SYNOPTIC WEATHER MAP FOR 21 MAY 2021



[Source: <https://www.weathersa.co.za/Documents>]

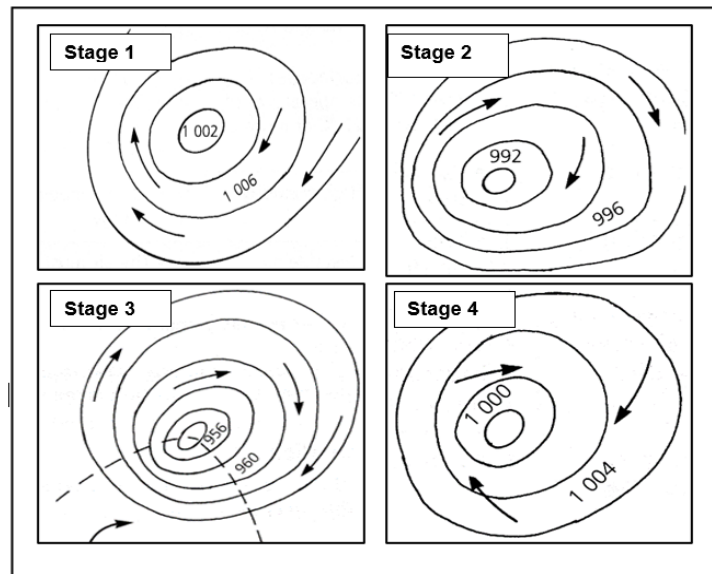
- 1.3.1 State the latitude at which mid-latitude cyclones develop. (1x1)(1)
- 1.3.2 Describe the general direction of movement of mid-latitude cyclone systems. (1x1)(1)
- 1.3.3 Give the reason for the direction of movement (QUESTION 1.3.2). (1x2)(2)
- 1.3.4 a) State the wind direction at **A**. (1x1)(1)
- b) Account for the wind direction at **A** (QUESTION 1.3.4 a)). (1x2)(2)
- 1.3.5 Draw an annotated cross section through the mid-latitude cyclone along the line **B–C**. Indicate the following on your cross section:
- Type of front (1x1)(1)
 - Characteristics of the air masses (2x1)(2)
 - Type of cloud that results in precipitation at **D** (1x1)(1)
- 1.3.6 Explain how the weather conditions associated with the front in QUESTION 1.3.5 can negatively affect the environment in the areas of South Africa that it moves over. (2x2)(4)

(15)



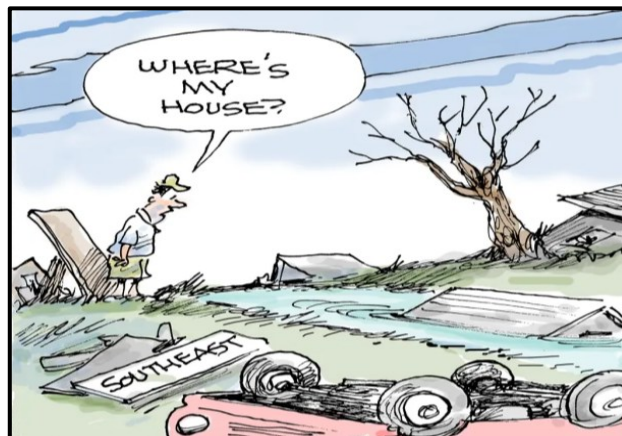
1.4 Refer to the information on tropical cyclones below.

DEVELOPMENT STAGES OF A TROPICAL CYCLONE



[Source: Telematics Grade 12]

CARTOON



[Source: <https://www.baltimoresun.com/2024/10/01/>]

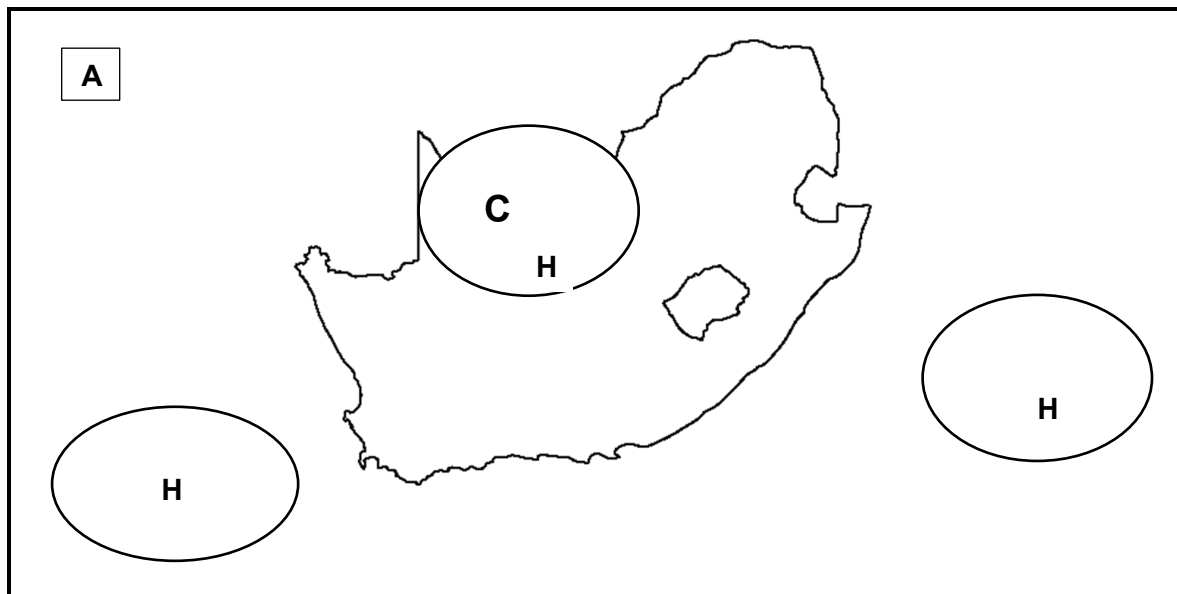
- 1.4.1 Identify the stage of development labelled Stage 1. (1x1)(1)
- 1.4.2 a) In which stage (1, 2, 3 or 4) is the velocity of the wind the highest? (1x1)(1)
- b) Give ONE piece of evidence from the diagram to support your answer to QUESTION 1.4.2 a). (1x2)(2)
- 1.4.3 a) Explain what a *storm surge* is. (1x2)(2)
- b) Describe the damage that was done by the storm surge to the property of the man in the cartoon. (1x1)(1)
- 1.4.4 In a **paragraph of 8 to 10 lines**, discuss the conditions necessary for the formation of a tropical cyclone. (4x2)(8)

(15)



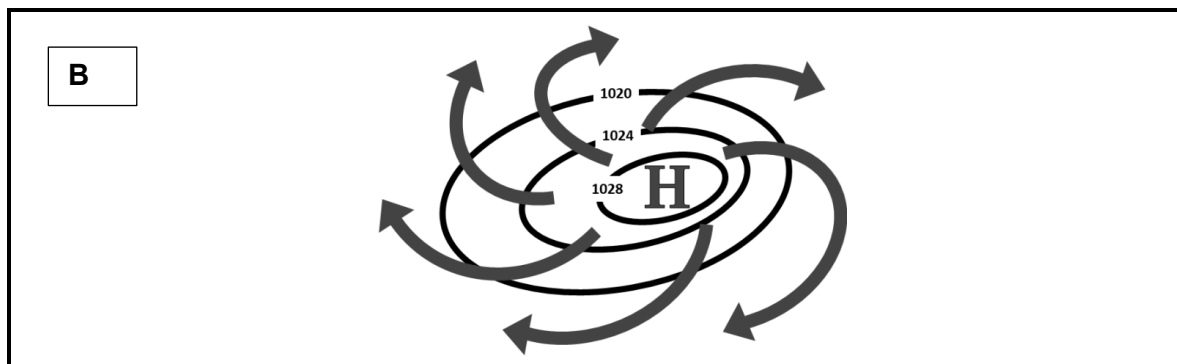
1.5 Refer to the diagrams on anticyclonic circulation below.

SIMPLIFIED SKETCH MAP OF THE POSITION OF THE HIGH-PRESSURE CELLS OVER SOUTH AFRICA



[Source: Examiner's sketch]

DIAGRAM OF AIR CIRCULATION AROUND A HIGH-PRESSURE CELL



[Source: <https://meteorology101.com/pressure-systems/>]

- 1.5.1 Name the pressure cell at **C** on the sketch map marked **A**. (1x1)(1)
- 1.5.2 Choose the correct word between brackets:
The air at **C** is (ascending/descending) causing it to (warm up/cool down). (2x1)(2)
- 1.5.3 Why is the diagram **B** not a representation of the pressure cell at **C**? (1x2)(2)
- 1.5.4 Explain how the pressure cell at **C** affects the weather over the interior of South Africa in winter. (2x2)(4)
- 1.5.5 Discuss THREE measures that farmers can take to reduce the effects mentioned in QUESTION 1.5.4. (3x2)(6)

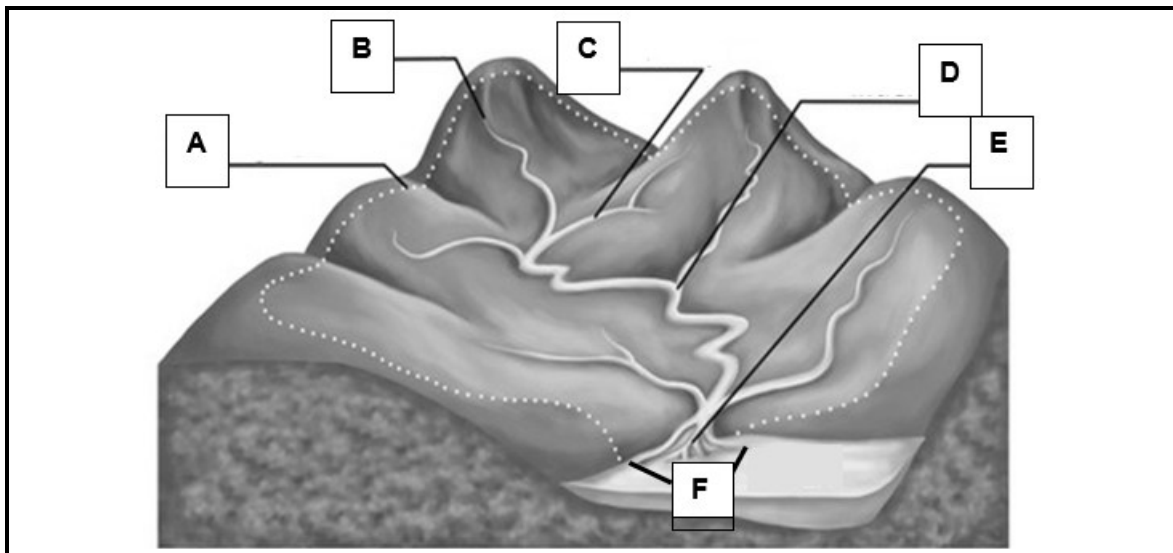
(15)

TOTAL QUESTION 1: [60]

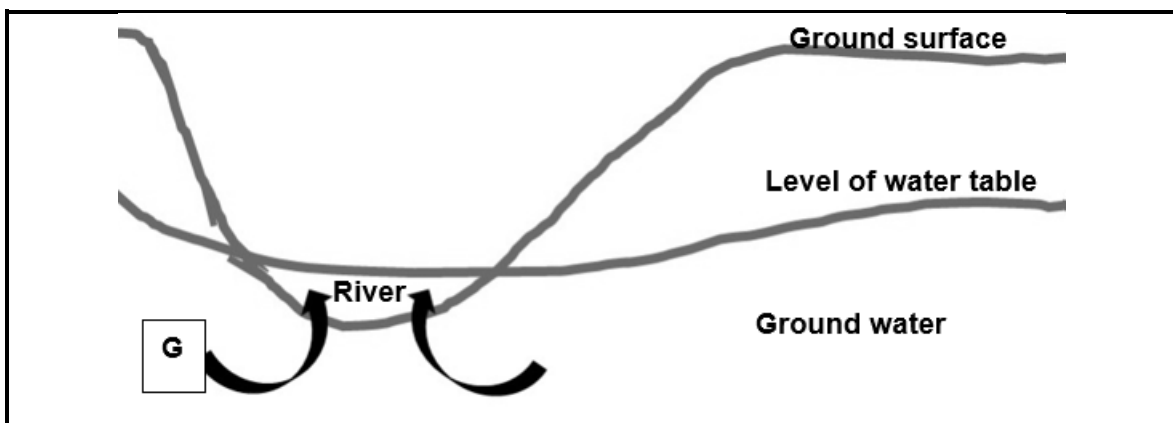


QUESTION 2: GEOMORPHOLOGY

- 2.1 Refer to the diagrams below. Choose the correct word from the box that best fits the letter on the diagrams. Write only the word next to the letter and the question numbers (2.1.1 to 2.1.7) in the ANSWER BOOK, for example 2.1.8 J: River.



[Source: <https://www.shutterstock.com/search/drainage-basin>]



[Source: Examiners own sketch]

Source; mouth; water table; base flow; zone of saturation; confluence;
drainage basin; interfluvium; tributary; watershed; delta

2.1.1 A:

2.1.2 B:

2.1.3 C:

2.1.4 D:

2.1.5 E:

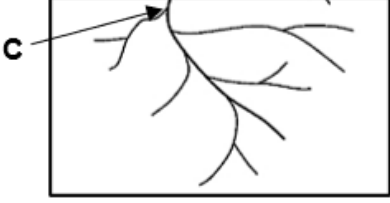
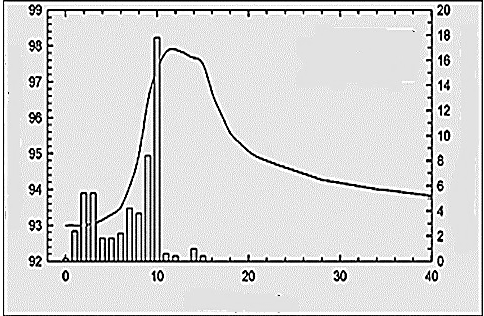
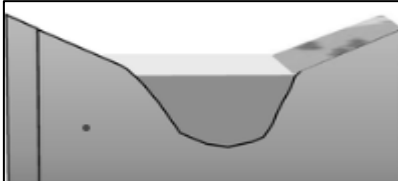
2.1.6 F:

2.1.7 G:

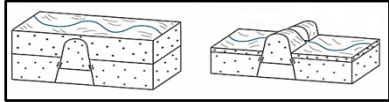
(7x1)(7)



- 2.2 Choose the correct option from **COLUMN B** that matches the statement/diagram in **COLUMN A**. Write only the letter (**X** or **Y**) next to the question numbers (2.2.1 to 2.2.8) in the ANSWER BOOK, for example 1.1.9 Y.

COLUMN A		COLUMN B	
2.2.1	A permanent river flows throughout the year because ...	X	the riverbed intersects the wet season and dry season water table.
		Y	it receives rainfall all year round.
2.2.2	An area with dense vegetation will have a ... drainage density.	X	high
		Y	low
2.2.3	The stream order at C in the drainage basin below is ...  <i>[Source: https://courses.lumenlearning.com]</i>	X	3
		Y	4
2.2.4	The flow hydrograph below is used to ...  <i>[Source adapted from: https://www.researchgate.net/figure]</i>	X	determine the influence of the annual rainfall in a drainage basin on the flow of the river.
		Y	determine the time that it would take for the river to reach its maximum discharge.
2.2.5	The cross section below represents the ... course of a river.  <i>[Source: https://www.researchgate.net/figure]</i>	X	middle
		Y	lower

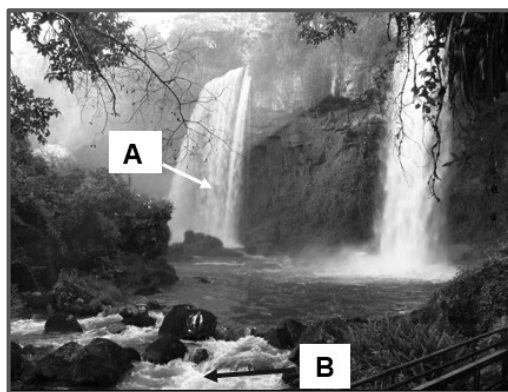


2.2.6	An example of a temporary base level is ...	X	a dam.
		Y	the ocean.
2.2.7	A terraced river valley is typical of a/an ...	X	ungraded river.
		Y	rejuvenated landscape.
2.2.8	The diagram below represents a ... drainage pattern. 	X	superimposed
		Y	antecedent

[Source: <https://elearning.reb.rw/course/view>]

(8x1)(8)

2.3 The photograph below illustrates a fluvial landform in a river.



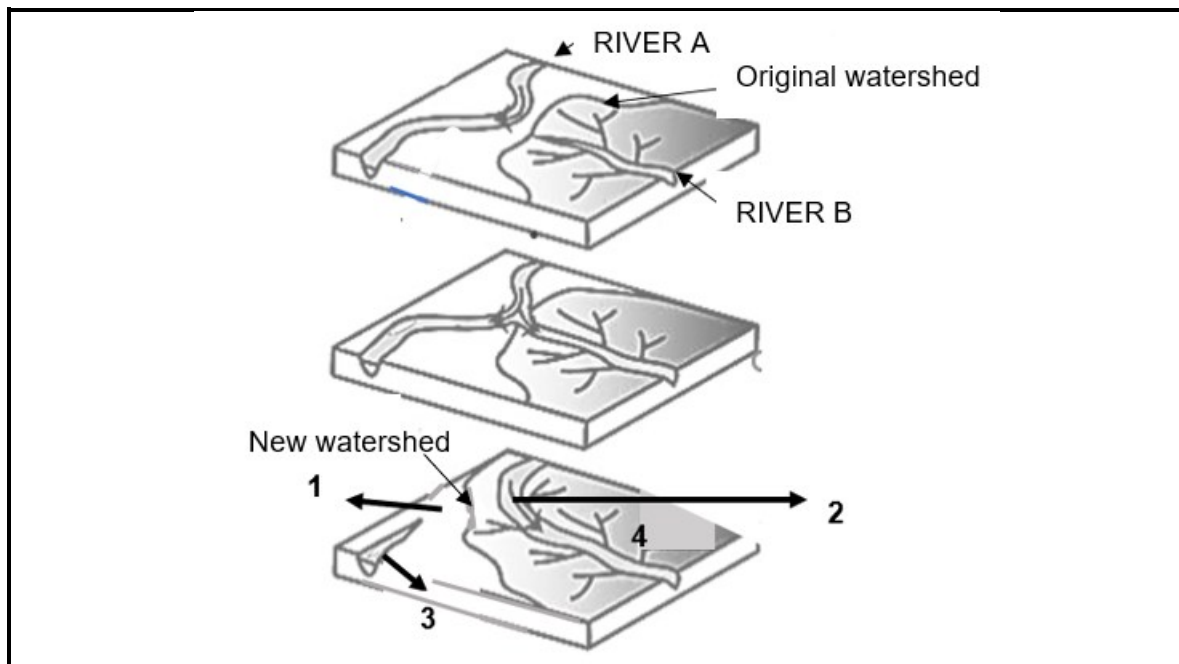
[Source: <https://education.nationalgeographic.org/resource/waterfall/>]

- 2.3.1 Identify the fluvial landform at **A**. (1x1)(1)
- 2.3.2 In which stage (course) of the river is landform **A** usually found? (1x1)(1)
- 2.3.3 a) Choose the correct word between brackets:
The flow characteristic at **B** is (laminar/turbulent). (1x1)(1)
- b) Explain the reason for this flow characteristic (QUESTION 2.3.3 a). (1x2)(2)
- 2.3.4 State TWO characteristics of the shape of a river valley in this stage (course) (QUESTION 2.3.2). (2x1)(2)
- 2.3.5 Explain how the gradient of the river in this stage (course) (QUESTION 2.3.2) impacts the velocity of the river. (2x2)(4)
- 2.3.6 Discuss the processes that cause the landform at **A** to change position over time. (2x2)(4)

(15)



2.4 The diagrams illustrate river capture.



[Source adapted from: <https://taylorperron.org/research/river-networks/>]

2.4.1 Identify the drainage pattern of the river system **B** on the sketch map. (1x1)(1)

2.4.2 Describe the characteristics of the underlying rocks associated with this drainage pattern (QUESTION 2.4.1). (1x2)(2)

2.4.3 Provide labels for the features of river capture labelled:

i) **1**

ii) **2**

(2x1)(2)

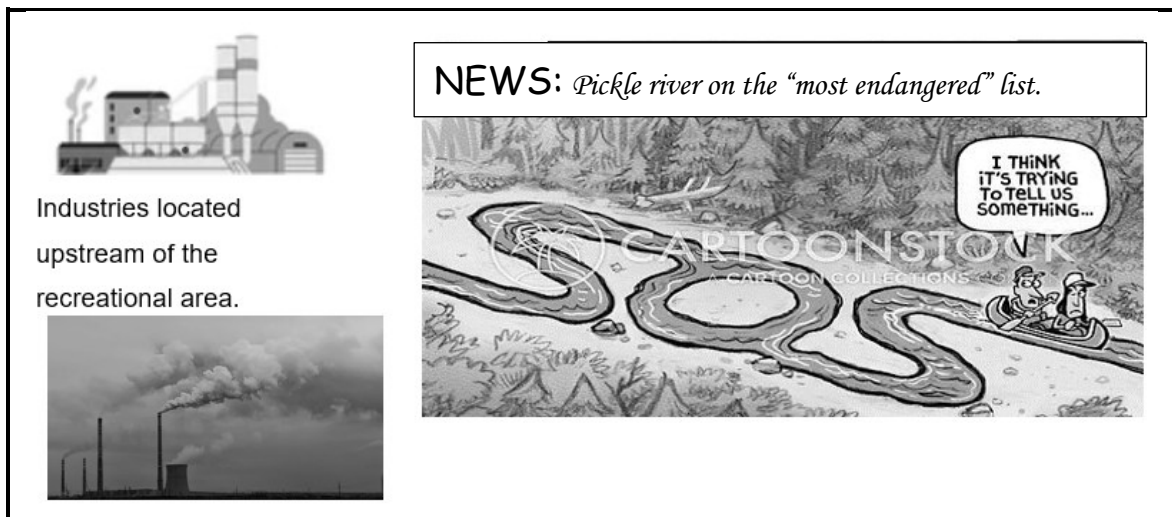
2.4.4 Discuss the effect of river capture on the volume of the river at **3**. (2x2)(4)

2.4.5 Explain how river capture affects the farming activities on the banks of the river at **4**. (3x2)(6)

(15)



2.5 Refer to the cartoon below on catchment and river management.



[Source: https://www.cartoonstock.com/directory/r/river_management.asp and also: Google images/industries]

- 2.5.1 What is *river management*? (1x1)(1)
- 2.5.2 Explain what the river is trying to 'tell' the people in the canoe. (1x2)(2)
- 2.5.3 Why is access to clean water considered a basic human right? (1x2)(2)
- 2.5.4 State TWO ways in which the industries upstream impact the river. (2x1)(2)
- 2.5.5 In a **paragraph of 8 to 10 lines**, describe strategies the authorities managing the Pickle River drainage basin can employ to protect the river from pollution by industries. (4x2)(8)

(15)

TOTAL QUESTION 2: [60]

TOTAL SECTION A: [120]



SECTION B

Refer to the 1:50 000 topographical map extract from **3219CA CITRUSDAL** as well as the orthophoto map **3219 CA 6 CITRUSDAL** that represents part of the topographical map area.

QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES

3.1 MAP SKILLS AND CALCULATIONS

3.1.1 The direction from **1** to **2** on the orthophoto map is ...

- A east north-east.
- B west north-west.
- C west south-west.
- D east south-east.

(1x1)(1)

3.1.2 Identify the man-made feature at 32°36'54" S and 19°01'51" E on the topographical map.

- A Buildings
- B Perennial water
- C Cultivated land
- D Orchards and vineyards

(1x1)(1)

3.1.3 Calculate the length of the dam along the arrow at **3** on the orthophoto map in metres. The distance on the orthophoto map is 3,6 cm.

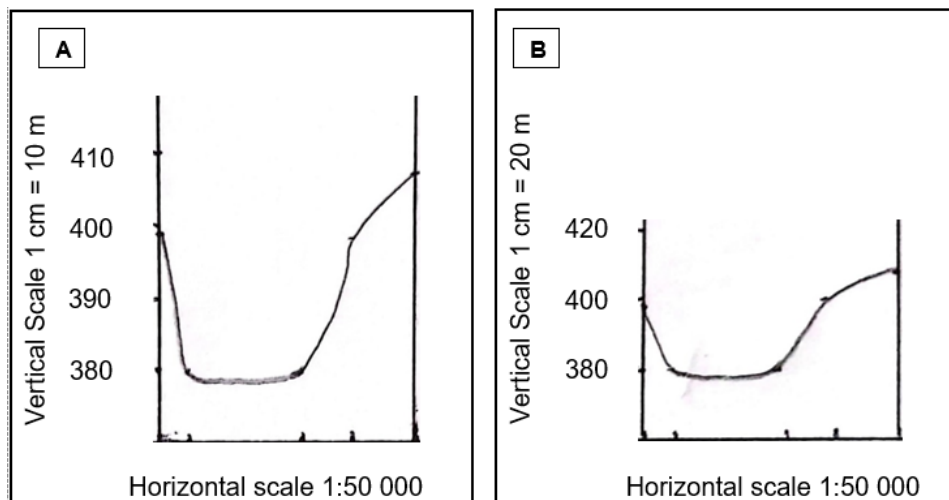
SHOW ALL CALCULATIONS

Formula: Distance = map distance x map scale

(2x1)(2)



3.1.4 Refer to the cross sections from spot height 399 in block **C2** to spot height 408 in block **D2** on the topographical map below.



[Source: Examiner]

- Which of the cross sections, **A** or **B** has been more exaggerated? (1x2)(2)
 - Explain your answer to QUESTION 3.1.4 a). (1x2)(2)
 - State whether there is inter-visibility between spot height 399 and spot height 408. (1x1)(1)
 - Give a reason for your answer to QUESTION 3.1.4 c). (1x1)(1)
- (10)**

3.2 MAP INTERPRETATION

3.2.1 The most important function of the features at **4** on the orthophoto map is to ...

- make the area look nice.
- act as a wind break.
- demarcate the orchard.
- reduce flooding. (1x1)(1)

3.2.2 The slope of the land in the area is generally ..., promoting...

- steep, runoff.
- steep, infiltration.
- gentle, infiltration.
- gentle, runoff. (1x1)(1)



- 3.2.3 Give TWO pieces of evidence from blocks **D1** and **D2** on the topographical map to prove that Citrusdal is a low rainfall area. (2x1)(2)
- 3.2.4 Name the type of slope at **F** in block **D3** on the topographical map. (1x1)(1)
- 3.2.5 Consider the microclimatic conditions at **G** in block **B2** on the topographical map.
- a) Is **G** on the north-facing or south-facing slope of the valley? (1x1)(1)
 - b) State whether **G** would be a good location for cultivated land. (1x1)(1)
 - c) Explain your answer to QUESTION 3.2.5 b). (2x1)(2)
- 3.2.6 Refer to the demarcated area in block **A4** and **B4** on the topographical map.
- a) Identify the drainage pattern in the demarcated area. (1x1)(1)
 - b) Provide TWO pieces of evidence from the topographical map to support your answer. (2x1)(2)

(12)

3.3 GEOGRAPHIC INFORMATION SYSTEMS

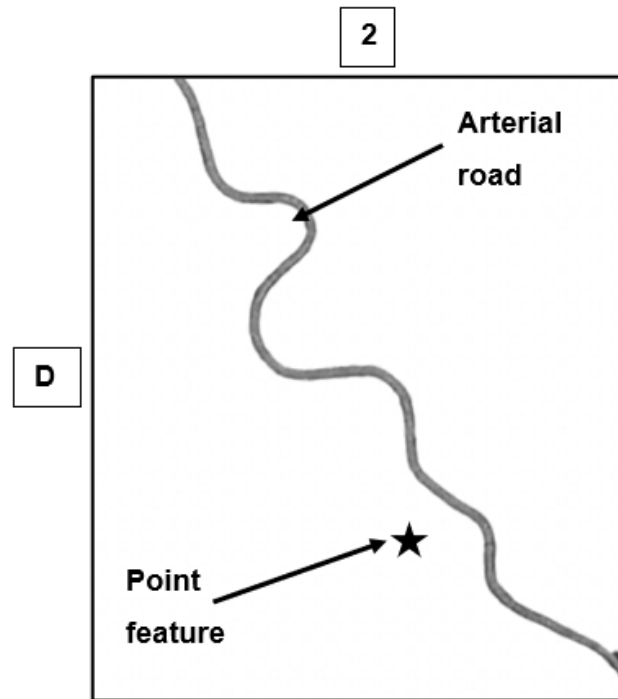
- 3.3.1 The arterial road (R303) on the topographical map forms part of the ... data layer.
- A land-use
 - B topography
 - C drainage
 - D infrastructure (1x1)(1)
- 3.3.2 Choose the correct word between brackets:
Combining together various sources of information from different maps types is called (data layering/data integration). (1x1)(1)
- 3.3.3 a) Define the term *remote sensing*. (1x2)(2)
- b) Which remote sensing hardware would be used to monitor the levels of the dams in block **D1** on the topographical map? (1x1)(1)



3.3.4 The use of map symbols (conventional signs) is an example of data standardisation.

- a) State the colour of the map symbols on the topographical map that are used to represent vegetation. (1x1)(1)

Refer to block **D2** on the topographical map. The insert below represents block **D2**. The arterial road as well as a point feature (★) is indicated on the insert.



- b) Classify the arterial road as point, line or polygon. (1x1)(1)
- c) Identify the point feature that forms part of the drainage layer, represented by the star (★) on the sketch map. (1x1)(1)

(8)

TOTAL QUESTION 3: [30]

TOTAL SECTION B: [30]

GRAND TOTAL: [150]



ROUGH WORK

NOTE: ANY WORK DONE ON THIS PAGE WILL NOT BE MARKED.