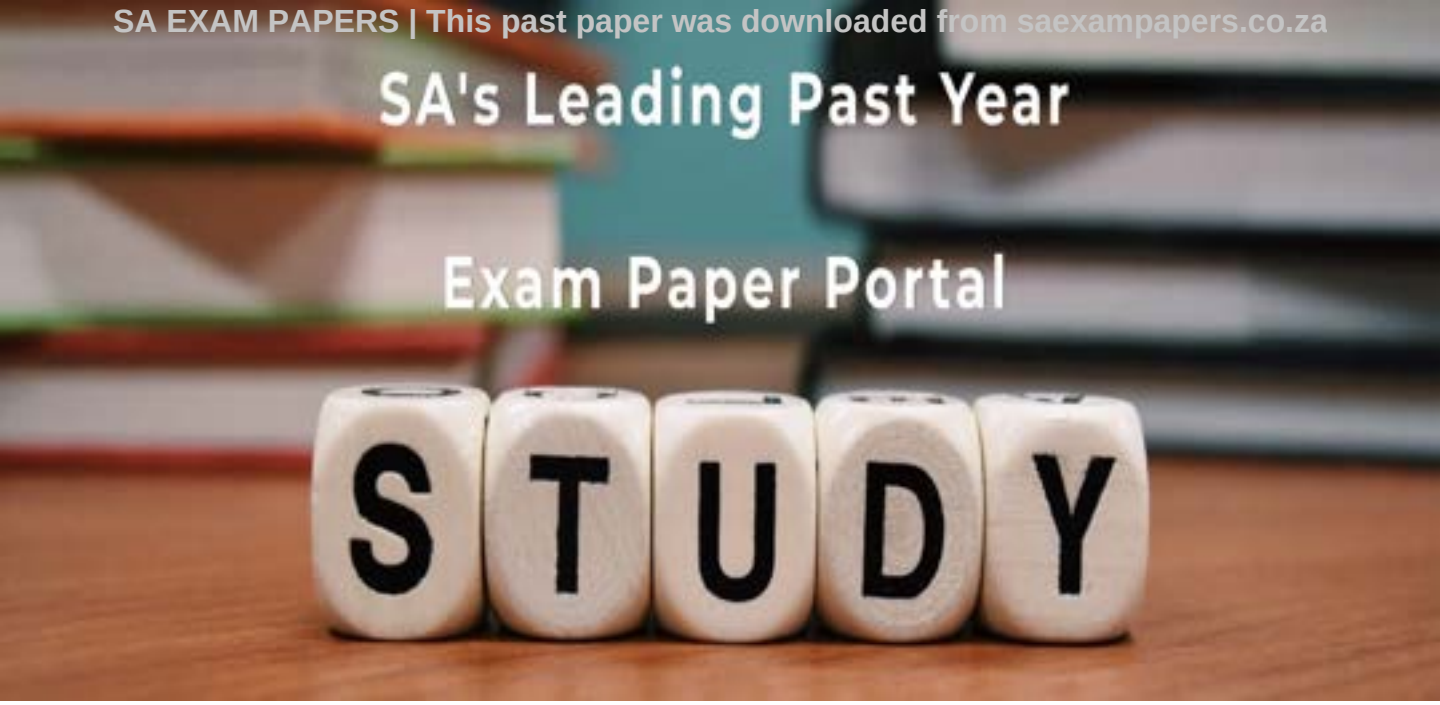


KWAZULU-NATAL PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

GEOGRAPHY

COMMON TEST

JUNE 2024

MARKS: 150

TIME: 3 hours

This question paper consists of 17 pages.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of THREE questions:

   SECTION A

   QUESTION: 1 CLIMATE and WEATHER & GEOMORPHOLOGY (60 MARKS)

   QUESTION: 2 RURAL AND URBAN SETTLEMENTS (60 MARKS)

   SECTION B

   QUESTION: 3 MAP SKILLS AND CALCULATIONS (30 MARKS)

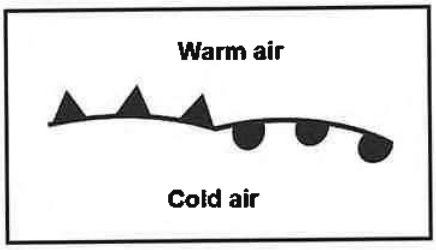
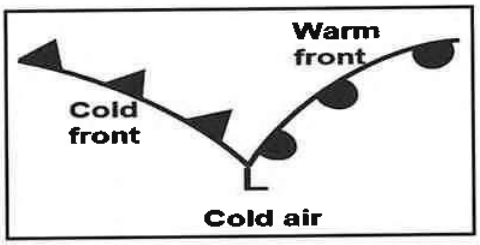
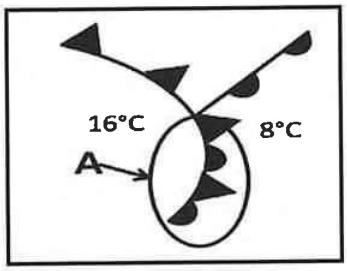
2. Answer ALL THREE questions in the answer book provided.
3. ALL diagrams are included in the ANNEXURE.
4. Leave a line open between subsections of questions answered.
5. Start EACH question at the top of a NEW page.
6. Number your answers correctly according to the numbering system used in this question 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.
10. You may use a magnifying glass.
11. The unit of measurement must be given in the final answer, where applicable, e.g. 10km, 4°C, east.

SPECIFIC INSTUCTIONS AND INFORMATION FOR SECTION B

12. A 1 : 50 00 topographic map 3126DD QUEENSTOWN and a 1 : 10 000 orthophoto map 3126DD NOOITGEDACHT are provided.
13. The area demarcated in RED/BLACK on the topographic map represents the area covered by the orthophoto map.
14. Marks will be allocated for steps in calcuations.
15. you must hand in the topographic and orthophoto map to the invigilator at the end of this examination session

QUESTION 1: CLIMATE and WEATHER & GEOMORPHOLOGY

1.1 Choose the word/term from COLUMN B that completes the statement in COLUMN A. Write only Y or Z next to the question numbers (1.1.1 to 1.1.7) in the ANSWER BOOK, e.g. 1.1.8 Z.

	COLUMN A	COLUMN B
1.1.1	A … *front* is an area where cold polar air mass meets warm tropical air masses leading to the development of mid latitude cyclones.	**Y** moisture **Z** polar
1.1.2	Mid-latitude cyclones occur throughout the year but affects South Africa mostly in …	**Y** summer. **Z** winter.
1.1.3	The wind that drives the mid-latitude cyclone is referred to as the …	**Y** westerlies. **Z** easterlies.
1.1.4	The various stages of development of a mid-latitude cyclone are referred to as …	**Y** cyclosis. **Z** cyclogenesis.
1.1.5	The wave stage below develops because of… 	**Y** frictional drag. **Z** wind shear
1.1.6	The mid latitude-cyclone below is in the … stage. 	**Y** mature **Z** occlusion
1.1.7	A characteristic of the occlusion stage at **A**, shown below, is when the …  (i) warm air has been uplifted. (ii) wind is veering. (iii) cold air has been uplifted. (iv) cold front catches up with the warm front.	**Y** (ii) and (iii) **Z** (i) and (iv)

(7 x 1) (7)

1.2 Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A-D) next to the question numbers (1.2.1 to 1.2.8) in your ANSWER BOOK. e.g. 1.2.9 D.

1.2.1 This type of river is associated with high rainfall areas:

A Perennial
B Periodic
C Exotic
D Episodic

1.2.2 ... rivers are found mostly in the western half of South Africa.

A Perennial
B Periodic
C Exotic
D Episodic

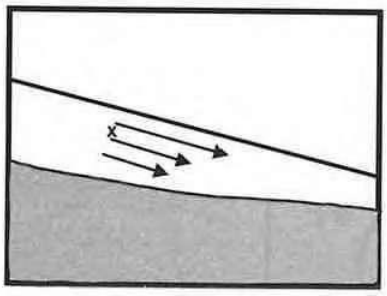
1.2.3 ... rivers originate in a high-rainfall region and flow through a dry region.

A Perennial
B Periodic
C Exotic
D Episodic

1.2.4 ... rivers only cut through the water table in the dry season.

A Perennial
B Periodic
C Exotic
D Episodic

1.2.5 **X** illustrates a ... flow.



A base
B turbulent
C sheet
D laminar

1.2.6 The ability of rock to allow water to pass through:

A Evaporation
B Permeability
C Porosity
D Precipitation

1.2.7 TWO factors that will result in a lower rate infiltration

(i) Drizzle
(ii) Thunderstorms
(iii) Steep gradient
(iv) Gentle gradient

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

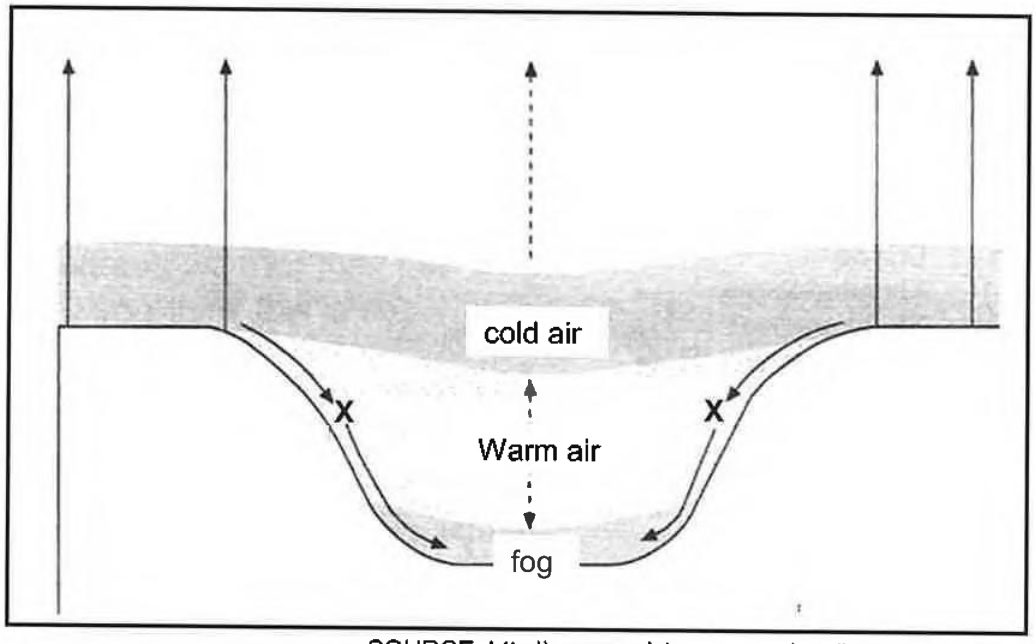
1.2.8 A lower rate of infiltration will result in a:

(i) higher stream order
(ii) higher drainage density
(iii) higher water table
(iv) higher soil moister content

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

(8 x 1) (8)

1.3 Study the sketch on the formation of fog in a valley.



SOURCE: http:\\www.revisiongeography.climate.co.za

1.3.1 Name the type of fog that has formed in this valley. (1 x 1) (1)

1.3.2 Provide ONE atmospheric condition that will be conducive to the formation of the type of fog mentioned in QUESTION 1.3.1. (1 x 1) (1)

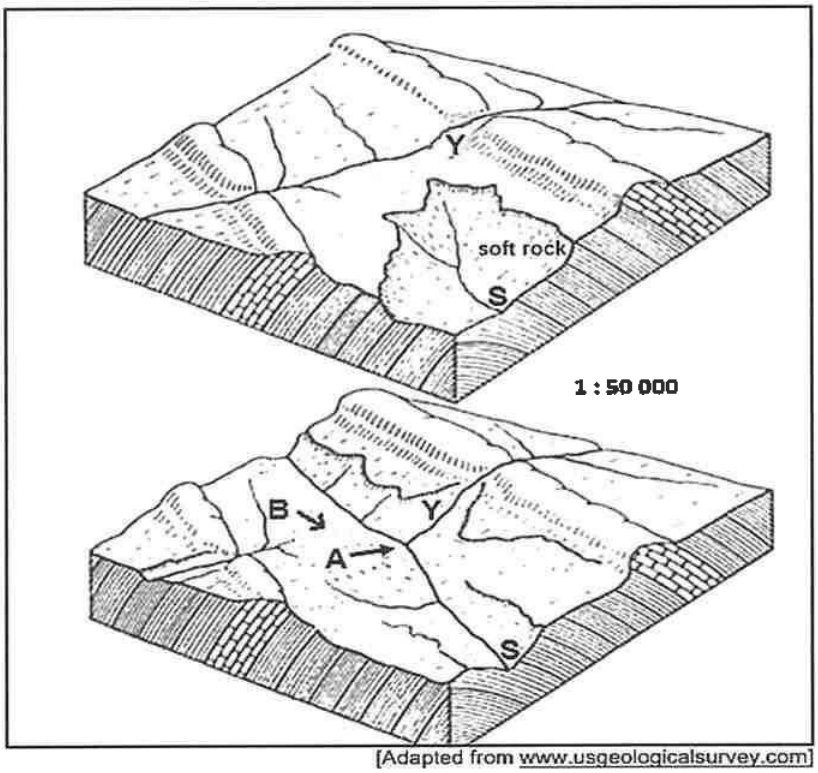
1.3.3 Name wind **X** that occurs mainly at night in the valley. (1 x 1) (1)

1.3.4 Why does the wind mentioned in QUESTION 1.3.3 move downwards? (1 x 2) (2)

1.3.5 Discuss the role that the wind mentioned in QUESTION 1.3.3 would play in the formation of fog. (2 x 2) (4)

1.3.6 Suggest the negative impacts that the presence of fog would have on people living in a valley. (3 x 2) (6)

1.4 Refer to the sketches that indicate the river capture process.



[Adapted from www.usgeologicalsurvey.com]

1.4.1 Match streams labelled **S** and **Y** with:

a) captor stream

b) captured stream (2 x 1) (2)

1.4.2 Name the feature labelled **A** and **B** that result from river capture. (2 x 1) (2)

1.4.3 Describe the erosion process associated with river capture. (1 x 1) (1)

1.4.4 State TWO reasons for the rivers eroding at a faster rate. (2 x 1) (2)

1.4.5 What effect will river capture have on the volume of water and erosive ability of the captor stream? (2 x 2) (4)

1.4.6 Evaluate the effect of river capture on the ecosystem of river **Y**. (2 x 2) (4)

1.5 Refer to the extract on catchment and river management.

A RIVER OF POLLUTION FLOWS THROUGH OUR LAND

The Olifants River is on the Southern Africa's most important river catchments. The river is critical to the economies of both South Africa and Mozambique. The 30 dams along the course supply three provinces with water in times of drought. Ten million people rely on this river for water.

The water from the Olifants River irrigates farms in western Mpumalanga and powers Eskom's coal-fired power stations in the area. The river flow through Limpopo's platinum belt, supplying water to valley that otherwise would be dry, the river cuts through the Drakensburg irrigating farms in the Lowveld, providing water to the Kruger National Park and finally joining the Limpopo River in Mozambique.

The above-mentioned activities have had a negative impact on the quality of water in the river. Management strategies implemented so far have proven to be ineffective, this puts the water of the Olifants River in danger of being declared too contaminated (polluted) to be used, strategies need to be put in place to improve the quality of water in the river in order to ensure a sustainable source of water.

[Adapted from https://mg.co.za/article/2017-04-13-00-ariver-of-sewage-chemicals-metals-flow-through-out-land/]

1.5.1 Define the concept *river management*. (1 x 2) (2)

1.5.2 According to the extract, how many provinces rely on the Olifants River for water? (1 x 1) (1)

1.5.3 Quote TWO pieces of evidence from the extract showing how water from the Olifants River is used (2 x 1) (2)

1.5.4 Suggest a negative impact Eskom's coal-fired power stations would have on the Olifants River. (1 x 2) (2)

1.5.5 In a paragraph of approximately EIGHT lines, explain FOUR strategies that could be implemented so that the Olifants River becomes a sustainable source of water. (4 x 2) (8)

TOTAL: [60]

QUESTION 2: RURAL AND URBAN SETTLEMENT

2.1 Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A – D) next to the question Numbers (2.1.1 to 2.1.8) in the ANSWER BOOK, e.g. 2.1.9 A

2.1.1 The exact physical landscape that is occupied by a farm is known as the …

A. site.
B. location.
C. situation.
D. space.

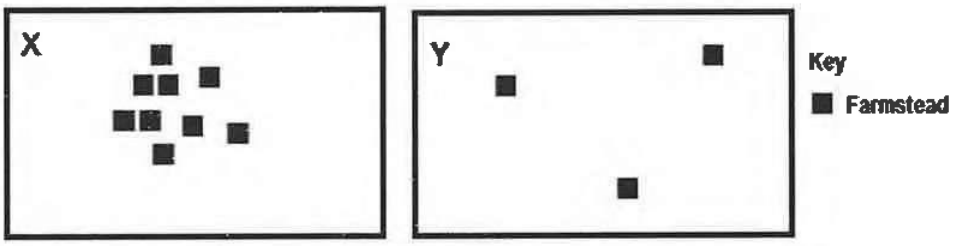
2.1.2 The relative location of one place in relation to another place is referred to as …

A. site.
B. relative distance.
C. exact location.
D. situation.

2.1.3 The choice of site for the location of a farm is influenced by ...

A. population size.
B. relief.
C. finance.
D. markets.

Refer to the patterns of rural settlements (**X** and **Y**) to answer QUESTIONS 2.1.4 to 2.1.6



2.1.4 The social advantage of settlement **Y** is …

A. safety and security.
B. using technology.
C. that a local market is available.
D. lots of privacy.

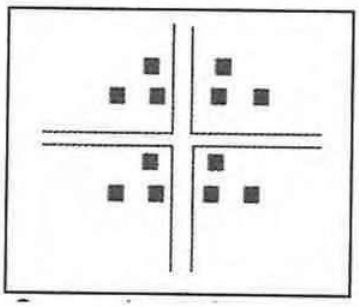
2.1.5 Settlement pattern **X** is classified as a nucleated settlement due to the ...

A. farm plots being close together.
B. distance away from the market.
C. farmstead being close together.
D. availability of flat land.

2.1.6 An economic disadvantage of settlement **X** is ...

A. greater privacy.
B. the potential for small profits.
C. the high cost of buying equipment.
D. independence.

Refer to the sketch below of the shape of a settlement to answer QUESTION 2.1.7 AND 2.1.8.



KEY:

SETTLEMENT

2.1.7 The shape of the settlement is ...

A. linear.
B. dispersed.
C. crossroads.
D. round.

2.1.8 The main reason for the development of the settlement is ...

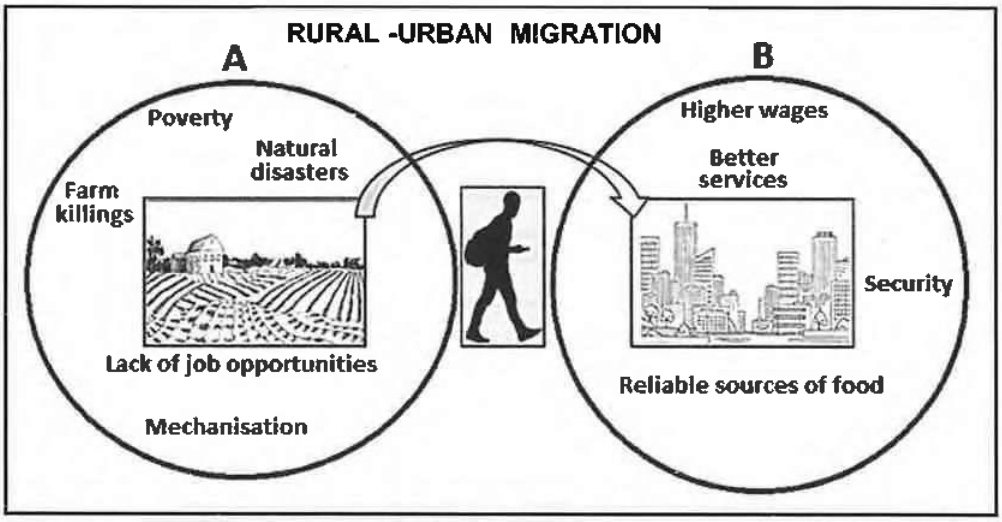
A. access to transport.
B. a gap in the mountain.
C. access to water.
D. a physical barrier. (8 x 1) (8)

2.2 Choose the word/term from COLUMN B that completes the statement in COLUMN A. Write only **Y** or **Z** next to the question numbers (2.2.1 to 2.2.7) in the ANSWER BOOK, e.g. 2.2.8 **Z**.

	COLUMN A	COLUMN B
2.2.1	The physical growth of the urban areas is referred to as …	**Y** urban expansion **Z** natural growth
2.2.2	The uncontrolled expansion of urban areas is referred to as ...	**Y** urban sprawl **Z** urban growth
2.2.3	The increase in the absolute number of people in urban areas is known as …	**Y** urban decay **Z** urban growth
2.2.4	The process by which an increasing percentage of the population living in urban areas is known as …	**Y** urbanization **Z** rate of urbanization
2.2.5	The multiple nuclei model of land-use has …	**Y** one focal point **Z** many focal points
2.2.6	The minimum number of customers needed to make a business profitable is known as …	**Y** sphere of influence **Z** threshold population
2.2.7	The maximum distance that people are prepared to travel to buy goods or services is known as …	**Y** range **Z** urban field

(7 x 1) (7)

2.3 Refer to the sketch below on rural-urban migration.



[Adapted from file:///vector-farm-field-sketch-engraving-drawing/stockistockcitysketch]

2.3.1 Define the concept *rural-urban migration.* (1 x 2) (2)

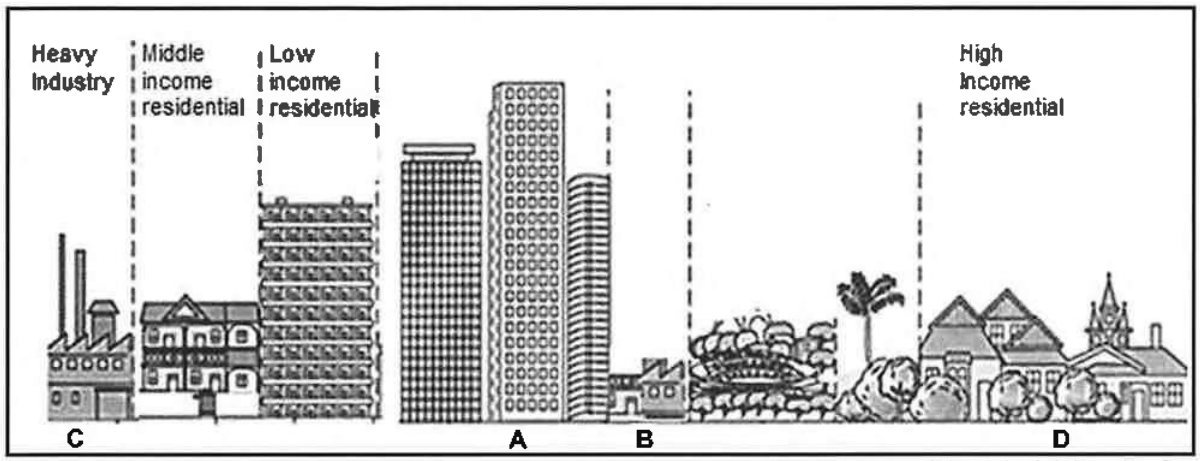
2.3.2 State one environmental push factor in **A** that results in the movement of people from **A** to **B**. (1 x 1) (1)

2.3.3 How does rural-urban migration result in rural depopulation? (1 x 2) (2)

2.3.4 What is the negative social impact of rural-urban migration on settlement **A**? (1 x 2) (2)

2.3.5 In a paragraph of approximately EIGHT lines, discuss sustainable measures that can be introduced in rural areas to reduce rural-urban migration. (4 x 2) (8)

2.4 Refer to the sketch below on urban land-use zone.



[Adapted from: search?q=urban+land+use+zones&tbm= isch&tbs=rimg]

2.4.1 Refer to land-use zone **A**

a) Name the land-use zone. (1 x 1) (1)

b) State TWO characteristics visible in the sketch of land-use zone **A.** (2 x 1) (2)

c) Discuss TWO reasons why land-use zone **A** is no longer attractive as a location for many businesses. (2 x 2) (4)

2.4.2 Refer to the land- use zone **B** which is called the transition zone

a) Why is the transition zone ideal for the location of light industries? (1 x 2) (2)

b) Suggest ONE reason for the transition zone having high land values. (1 x 2) (2)

2.4.3 Explain why land-use zone **C** and land-use zone **D** are not compatible. (2 x 2) (4)

2.5 Refer to the photograph below on informal settlement.

[Source: www.sabcnews.com]

2.5.1 Define the concept *informal settlement*. (1 x 2) (2)

2.5.2 What evidence in the photograph indicates that this is an informal settlement? (1 x 1) (1)

2.5.3 Give TWO economic reasons for the development of informal settlements. (2 x 1) (2)

2.5.4 State TWO basic needs that people who live in most informal settlement do not have easy access to. (2 x 1) (2)

2.5.5 How will the river impact the informal houses in the vicinity of **A** when there is heavy rainfall? (2 x 2) (4)

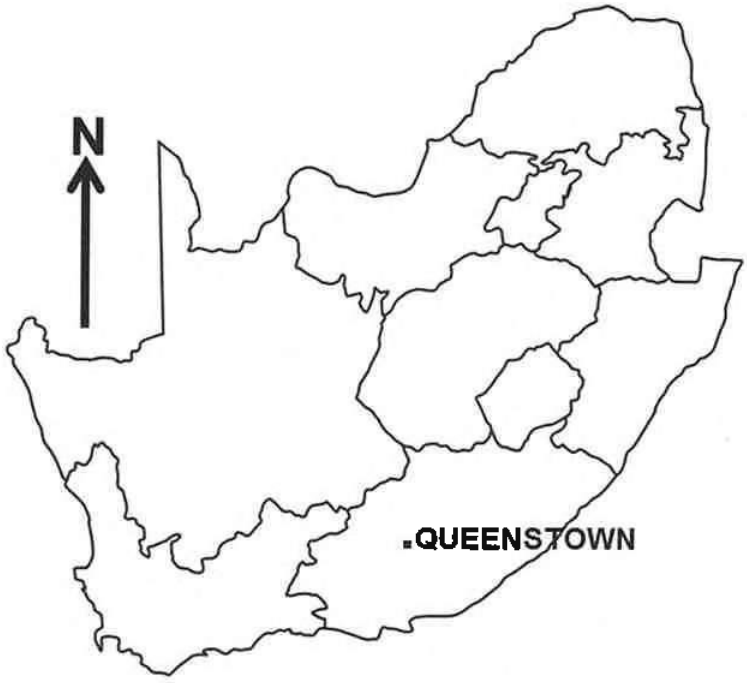
2.5.6 Explain TWO measures that local municipalities could implement to reduce the growth of informal settlement like **A**. (2 x 2) (4)

TOTAL: [60]

SECTION B

QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES

GENERAL INFORMATION ON QUEENSTOWN



Coordinates: 31°54'S; 26° 53'E

Queenstown (officially known as Komani) is a town in the Eastern Cape in South Africa. The town lies on the banks of the Komani River which forms part of the Great Kei river system and has a refreshing climate and an abundant water supply from the surrounding rugged mountains.

The area's annual average temperature is 18,29°c which is 2,93% lower than the average for South Africa. Queenstown generally receives approximately 90,83 millimetres of precipitation and has 134 rainy days annually.

Winters are short, cold, dry and windy; it is mostly clear year-round.

[Adapted from https://en.wikipedia.org/wiki/queenstown]

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

ENGLISH	AFRIKAANS
Diggings	Uitgrawings
River	Rivier

3.1 MAP SKILLS AND CALCULATIONS

3.1.1 Queenstown is a ... in the Eastern Cape in South Africa.

A. city
B. metropolis
C. village
D. town (1 x 1)(1)

3.1.2 The scale of 1:10 000 shows a ... area and ... detail as it is a larger scale than 1:50 000

(i) larger
(ii) smaller
(iii) less
(iv) more

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

3.1.3 The contour interval on the topographic map is … metres.

A 20
B 10
C 5
D 50 (1 x 1)(1)

3.1.4 Calculate the area covered by the orthophoto map as demarcated in Red/black on the topographic map in the km². Use the following measurements if the length on the map is 4,2cm and the breadth on the map is 3.8 cm. (3 x 1)(3)

[Formula: **Area = Length (L) x Breadth (B)]**

3.1.5 Calculate the straight-line distance in metres (m) between point **7** in block **D2** and point **6** in block **D4** on the orthophoto map.

Formula: **Actual Distance = Map distance x Map scale** (2 x 1)(2)

3.1.6 If one has to hike from point **6** in block **D4** to point **7** in block **D2**, one would be negotiating a … slope. (1 x 1)(1)

3.1.7 Determine the man-made drainage feature located at 31°49'46"S; 26°47'23"E on the topographical map. (1 x 1)(1)

3.2 MAP INTERPRETATION

3.2.1 The altitude shown by point **7** in **D2** on the orthophoto map is a ...

A. contour line.
B. spot height.
C. bench mark.
D. trigonometrical station . (1 x 1)(1)

3.2.2 Identity the environmental issue shown by the area **I** in block **A2** on the topographical map. (1 x 1)(1)

3.2.3 Discuss TWO possible solutions that can be implemented to overcome the environmental issue identified in QUESTION 3.2.2 (2 x 2)(4)

3.2.4 Determine the direction of flow of the Lesseyton River (block **D1**) (1 x 1)(1)

3.2.5 Explain ONE reason for your answer to QUESTION 3.2.4 (1 x 2)(2)

3.2.6 The drainage pattern formed by the river system in block **C5** is ...

A radial.
B trellis.
C dendritic.
D rectangular. (1 x 1)(1)

3.2.7 Explain ONE reason for your answer to QUESTION 3.2.6 (1 x 2)(2)

3.3 GEOGRAPHICAL INFORMATION SYSTEM (G1S)

3.3.1 Define the concept *data layer*. (1 x 2)(2)

3.3.2 How will the drainage layer encourage crop farming in the area? (1 x 2)(2)

3.3.3 Is the topographical map of QUEENTOWN a vector or raster data? (1 x 1)(1)

3.3.4 Give ONE reason for your answer to QUESTION 3.3.3. (1 x 1)(1)

Resolution refers to the degree of detail and clarity of an image.

3.3.5 Explain why the orthophoto map of QUEENSTOWN has a high spatial resolution. (1 x 2)(2)

TOTAL SECTION B: [30]

GRAND TOTAL: 150