

# Basic Education

KwaZulu-Natal Department of Basic Education  
REPUBLIC OF SOUTH AFRICA

**GEOGRAPHY P1 (THEORY - SECTION A) &  
GEOGRAPHY P2 (MAPWORK - SECTION B)**

**COMMON TEST**

**MARCH 2016**

**NATIONAL  
SENIOR CERTIFICATE**

**GRADE 12**

**MARKS: 100 (THEORY 75 + MAPWORK 25)**

**TIME: 1½ hour (THEORY 1 hour + MAPWORK 30 minutes)**

**N.B. This question paper consists of 12 pages and  
an Annexure of 5 pages.**

**INSTRUCTIONS**

1. The question paper consists of **TWO** sections: **SECTION A (Paper 1)** and **SECTION B (Paper 2)**
2. Both sections must be written in **ONE** session: 1.5 hours.
3. SECTION A: Paper 1: CLIMATE AND WEATHER AND GEOMORPHOLOGY  
(1 HOUR)  
MARKS: 75
4. SECTION B: Paper 2: MAPWORK (30 MINUTES)  
MARKS: 25
5. ALL diagrams in **SECTION A** are included in the **Annexure**.
6. Answer **ALL** questions.

**QUESTION 1**

1.1 Refer to **FIGURE 1.1** in the Annexure.

Choose the correct word in brackets. Write down the correct answer only next to the question number (1.1.1 – 1.1.8) in the answer book.

1.1.1 The weather system at **X** is called a (mid-latitude/tropical) cyclone.

1.1.2 The front labelled **A** is the (cold/warm) front.

1.1.3 The front labelled **B** is the (warm/cold) front.

1.1.4 The wind in system **X** is circulating (clockwise/anti-clockwise).

1.1.5 Weather system **X** is steered by (easterlies/westerlies).

1.1.6 **C** represents the (occlusion/mature) stage of weather system **X**.

1.1.7 In this entire system the air (sinks/rises).

1.1.8 The atmospheric pressure will (increase/decrease) as the front moves over Cape Town.

(8 x 1) (8)

1.2 Choose a term from COLUMN B that matches the description in COLUMN A. Write **ONLY** the letter (A – H) next to the question number (1.2.1 -1.2.7) in your answer book, example 1.2.8 I

COLUMN A	COLUMN B
1.2.1 The point where a river originates.	A. Watershed
1.2.2 The point where the river enters the ocean.	B. Source
1.2.3 High lying area that separates two drainage basins.	C. Permanent
1.2.4 Area receiving rain, and supplying water to the river system.	D. Mouth
1.2.5 Rivers that flow throughout the year.	E. Catchment
1.2.6 High lying area between two streams of the same river system.	F. Exotic
1.2.7 Rivers that flow for a very short period after a heavy rainfall.	G. Interfluve
	H. Episodic

(7 x 1) (7)

**TROPICAL CYCLONES**

- 1.3 Refer to **FIGURE 1.3** on Tropical Cyclone Funso in the Annexure.
- 1.3.1 Before Tropical Cyclone Funso, how many tropical cyclones occurred in this area during the 2012 tropical cyclone season? (1 x 1) (1)
- 1.3.2 Give ONE reason for your answer to QUESTION 1.3.1. (1 x 2) (2)
- 1.3.3 Describe the path (direction) taken by Tropical Cyclone Funso, as illustrated in FIGURE 1.3. (1 x 1) (1)
- 1.3.4 Is the path taken by Tropical Cyclone Funso predictable? (1 x 1) (1)
- 1.3.5 Suggest ONE possible reason why Tropical Cyclone Funso may dissipate if it moves in a south easterly direction. (1 x 2) (2)
- 1.3.6 Write a paragraph explaining the possible effects of Tropical Cyclone Funso on the Mozambique coastline as well as on the economy of the country. (4 x 2) (8)

**URBAN HEAT ISLAND AND POLLUTION DOME**

- 1.4 Refer to **FIGURE 1.4** in the Annexure showing a pollution dome over a large urban settlement.
- 1.4.1 Explain what is meant by the term heat island. (1 x 1) (1)
- 1.4.2 Which part of the city is experiencing the highest temperature? (1 x 1) (1)
- 1.4.3 Explain how building material influences the high temperatures in the city. (1 x 2) (2)
- 1.4.4 State the environmental problem resulting from a pollution dome that is situated closer to the earth's surface. (1 x 1) (1)
- 1.4.5 Suggest TWO activities within the city that contributes to the development of a pollution dome over the city. (2 x 1) (2)
- 1.4.6 During night-time the pollution dome is much lower than during day-time. Provide TWO reasons for this occurrence. (2 x 2) (4)
- 1.4.7 Suggest TWO ways in which we can reduce the environmental problem stated in QUESTION 1.4.4. (2 x 2) (4)

**DRAINAGE BASIN**

- 1.5 Refer to FIGURE 1.5 in the Annexure showing a Drainage Basin.
- 1.5.1 Define the term *water-table*. (1 x 1) (1)
- 1.5.2 Describe TWO main characteristics of the water-table. (2 x 1) (2)
- 1.5.3 Name TWO sources of water supply in a drainage basin. (2 x 1) (2)
- 1.5.4 Explain TWO ways in which humans can disrupt the natural functioning of the water table. (2 x 2) (4)
- 1.5.5 Suggest THREE reasons why drainage basins and catchment areas need to be managed effectively. (3 x 2) (6)

**DRAINAGE DENSITY AND DRAINAGE PATTERN**

- 1.6 Refer to FIGURE 1.6 in the Annexure showing Drainage Density.
- 1.6.1 Define the term *drainage density*. (1 x 1) (1)
- 1.6.2 (a) Which of the drainage basins **A** or **B** has a low drainage density. (1 x 1) (1)
- (b) Give ONE possible reason for your answer in QUESTION 1.6.2 (a). (1 x 2) (2)
- 1.6.3 (a) Identify the drainage pattern represented in sub-basin A and B. (1 x 1) (1)
- (b) Describe the underlying rock type and structure associated with the drainage pattern identified in question 1.6.3 (a). (1 x 2) (2)
- 1.6.4 Write a paragraph of approximately 8 – 10 lines, discussing FOUR factors that cause drainage densities to be different. (4 x 2) (8)

**TOTAL MARKS: [75]**

<b>25</b>



# Basic Education

KwaZulu-Natal Department of Basic Education  
REPUBLIC OF SOUTH AFRICA

**GEOGRAPHY P2 (MAPWORK) – SECTION B**  
**COMMON TEST**  
**MARCH 2016**

**NATIONAL  
SENIOR CERTIFICATE**

**GRADE 12**

**MARKS: 25**

**TIME: 30 minutes**

**NAME:** \_\_\_\_\_

**DIVISION:** \_\_\_\_\_

**RESOURCE MATERIAL**

1. An extract from topographical map 3126DD QUEENSTOWN.
2. Orthophoto map 3126 DD 12 QUEENSTOWN.
3. **NOTE:** The resource material must be collected by schools for their own use.

**INSTRUCTIONS AND INFORMATION**

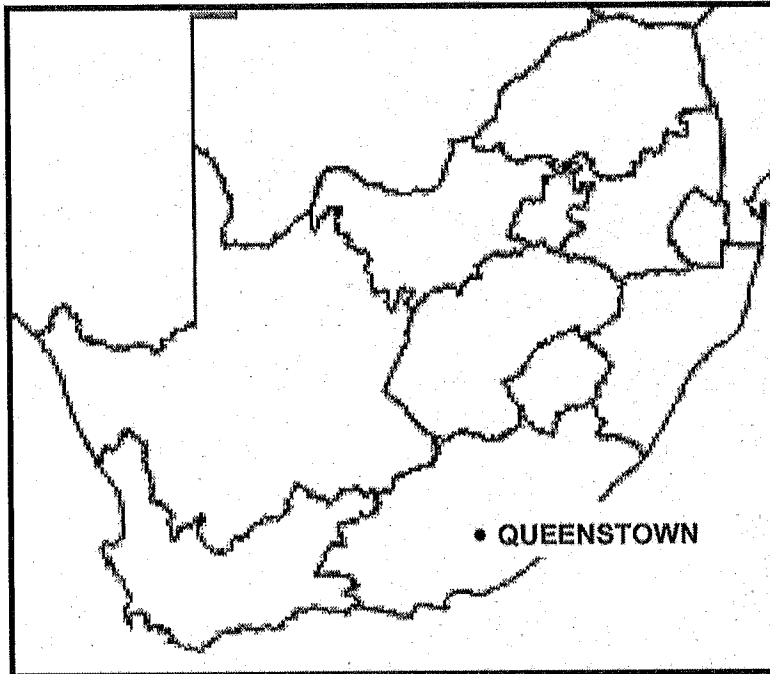
1. Write your NAME and DIVISION in the spaces on the cover page.
2. Answer ALL the questions in the spaces provided in this question paper.
3. You are provided with a 1 : 50 000 topographical map (3126DD QUEENSTOWN) and an orthophoto map (3126 DD 13 QUEENSTOWN) of a part of the mapped area.
4. You must hand the topographical map and the orthophoto map to the invigilator at the end of this examination session.
5. You may use the blank page at the back of this question paper for all rough work and calculations. Do NOT detach this page from the question paper.
6. Show ALL calculations and formulae, where applicable. Marks will be allocated for these.
7. Indicate the unit of measurement in the final answer of calculations.
8. You may use a non-programmable calculator.
9. The following English terms and their Afrikaans translations are shown on the topographical map:

**ENGLISH**

Aerodome  
Caravan Park  
College  
Diggings  
Golf Course  
Gorge  
Holiday Resort  
Purification Plant  
River  
Sewage Works  
Yacht Club

**AFRIKAANS**

Vliegveld  
Karavaanpark  
Kollege  
Uitgrawings  
Gholffbaan  
Ravyn (Kloof)  
Vakansieoord  
Watersuiweringsaanleg  
Rivier  
Rioolwerke  
Seiljagklub

**GENERAL INFORMATION ON QUEENSTOWN**

Coordinates: 31°54'S 26°53'E

Queenstown is a town in the Eastern Cape in South Africa. It lies on the Komani River, which forms part of the Great Kei system of rivers. Queenstown has a refreshing climate and plentiful water supply from the surrounding rugged mountains. The water is collected in the Bonkolo Dam (the name has been changed from Bongolo Dam recently), set in the hills. This dam is used extensively for recreation and water sports. Close to Queenstown is a nature reserve (Lawrence de Lange Nature Reserve) with numerous antelope, white rhinoceros and spectacular flowering plants, together with panoramic views from the mountain summit. Queenstown has rich sandstone layers deposited by meandering rivers on the flood plain. Queenstown's layout reflects its original objective as a defensive stronghold for the frontier area and has a most unusual design. There is a central hexagonal area where canon or rifle fire could be directed down six thoroughfares radiating from the centre.

[Adapted from <http://en.wikipedia.org/wiki/Queenstown>, Eastern Cape]



**QUESTION 1: MULTIPLE-CHOICE QUESTIONS**

The questions below are based on the 1:50 000 topographical map 3126 DD QUEENSTOWN, as well as the orthophoto map 3126DD 13 as part of the mapped area. Various options are provided as possible answers to the following questions. Choose the correct answer and write only the letter (A–D) in the block next to each question.

1.1 Queenstown is located in the ... province.

- A Gauteng
- B Kwazulu-Natal
- C Orange Free State
- D Eastern Cape

1.2 The human made feature labelled **2** on the orthophoto map is a ...

- A golf course
- B excavation
- C lake
- D mine dump

1.3 The Aerodrome in block **F 6/7** is located ... of Queenstown central.

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

1.4 The natural feature found at **Q** on the topographical map is a ...

- A lake
- B marsh and vlei
- C non-perennial river.
- D gap

1.5 The type of infrastructure labelled **10** on the orthophoto map is a/an ...

- A national road.
- B telephone line.
- C other road.
- D main road

**5 x 1 [5]**

**QUESTION 2: MAPWORK TECHNIQUES AND CALCULATIONS**

2.1 Calculate the distance between spot height 1036 in Block **J7** and spot height 1339 in Block **I 10**, in kilometers. Show all calculations.

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(2)

2.2 Calculate the **area** of the land covered by feature **11** on the orthophoto map in metres. Show **ALL** calculations. Marks will be awarded for calculations.

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(4)

2.3 Calculate the true bearing of spot height 1025 in Block **I 5** from spot height 1061 in Block **J4**.

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(1)  
[7]

**QUESTION 3: APPLICATION AND INTERPRETATION**

3.1 Give ONE piece of evidence from the topographical map which indicates that the town of Queenstown receives seasonal rainfall.

\_\_\_\_\_ (1 x 1) (1)

\_\_\_\_\_

3.2 The general flow direction of the Bonkolo river in block A8 is southerly. Provide ONE piece of map evidence in support of this statement.

\_\_\_\_\_ (1 x 2) (2)

\_\_\_\_\_

3.3 Give ONE reason why the north eastward expansion of Queenstown of is limited.

\_\_\_\_\_ (1 x 1) (1)

\_\_\_\_\_

\_\_\_\_\_

3.4 Explain how the topography (physical landscape) influenced the siting of the Bonkolo Dam.

\_\_\_\_\_ (1 x 2) (2)

\_\_\_\_\_

\_\_\_\_\_

3.5 Map evidence indicates that soil erosion is occurring especially in the north west of Queenstown. Suggest ONE way in which the town engineers can address this environmental problem.

\_\_\_\_\_ (1 x 2) (2)

\_\_\_\_\_

\_\_\_\_\_

**[8]**

**QUESTION 4: MAP PROJECTION AND GEOGRAPHICAL INFORMATION SYSTEMS**

4.1 Define the term Geographic Information System.

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(1 x 1)(1)

4.2 Differentiate between attribute and spatial data of Berry Dam in Block D10.

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(2 x 1) (2)

4.3 The Eastern Cape Tourism Board wants to promote Queenstown as a major tourism destination, provide **ONE** reason why the use of secondary sources would be a disadvantage.

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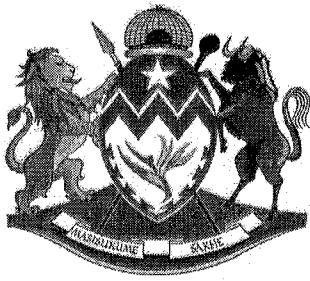
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(1 x 2) (2)  
**[5]**

**TOTAL MARKS: [25]**



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REPUBLIC OF SOUTH AFRICA

**GEOGRAPHY P1 (THEORY - SECTION A) &  
GEOGRAPHY P2 (MAPWORK - SECTION B)**

**ANNEXURE**

**COMMON TEST**

**MARCH 2016**

**NATIONAL  
SENIOR CERTIFICATE**

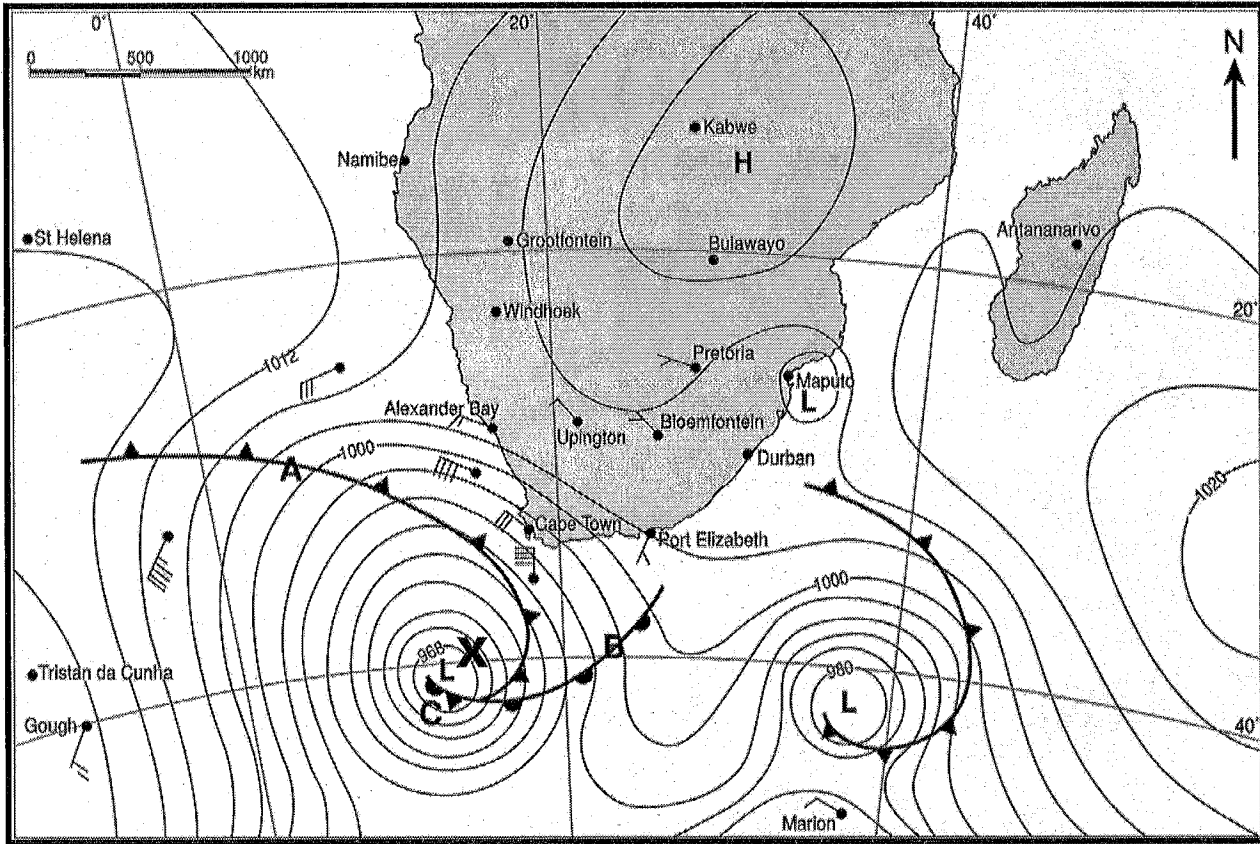
**GRADE 12**

**MARKS: 100 (THEORY 75 + MAPWORK 25)**

**TIME: 1½ hour (THEORY 1 hour + MAPWORK 30 minutes)**

**N.B. This annexure consists of 5 pages including this page.**

FIGURE 1.1



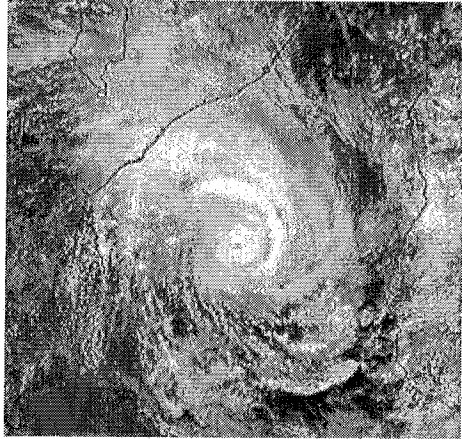
Adapted from Telematics

**FIGURE 1.3: TROPICAL CYCLONES**

The Washington Post - Jan 25, 2012 - 03.30pm

**Tropical Cyclone Funso brings heavy rain, flooding to Mozambique**

By Justin Grieser

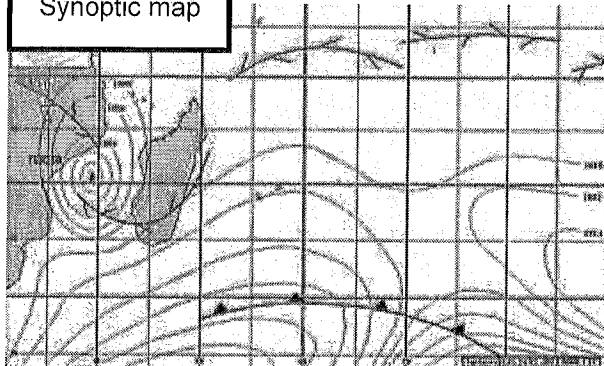


A powerful storm, now equivalent to a Category 4 hurricane, has been rotating off the coast of southeast Africa since late last week. Currently very strong non-stop **winds** of 222 km p/h are crossing the Mozambique Channel. Tropical Cyclone Funso has brought heavy **rain** and **flooding** to coastal regions of Mozambique. Some areas have received over 12-18 inches.

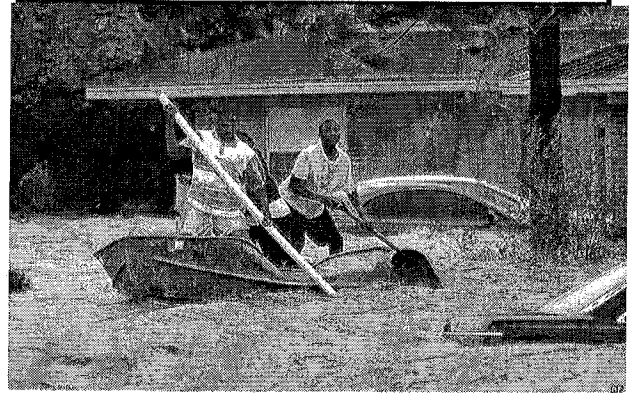
Funso claimed at least 40 lives and displaced several thousand in Mozambique. Officials are concerned about possible food shortages following the destruction of a major National highway between the capital and the northern parts of the country.

Tropical Cyclone Funso between Madagascar and the southeast African coast. (NASA)

Synoptic map

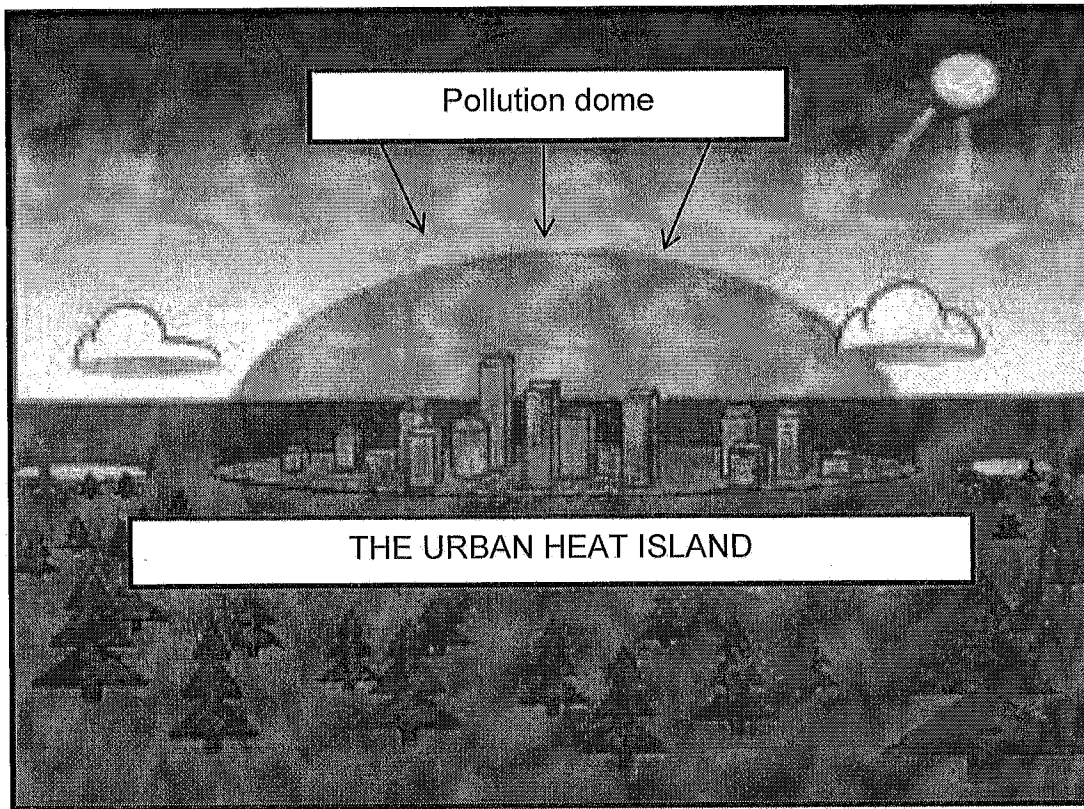


Floods caused by Tropical Cyclone Funso



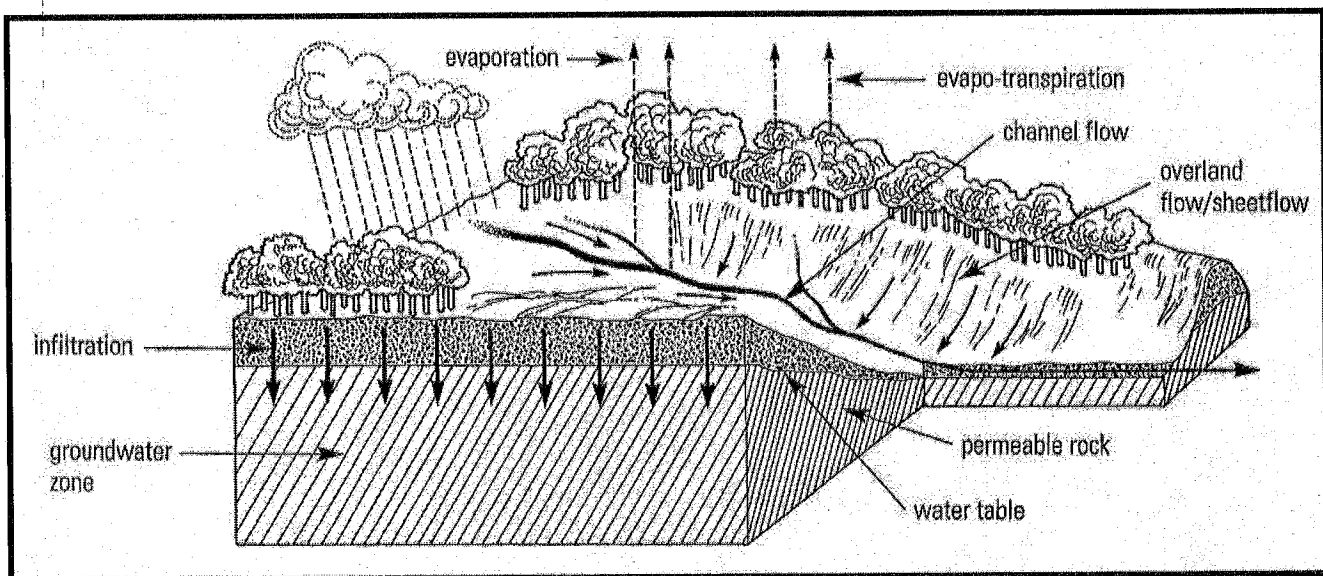
Source: Adapted from Google

**FIGURE 1.4: URBAN HEAT ISLAND AND POLLUTION DOME**



Source: Adapted from Learn Xtra Live Geography

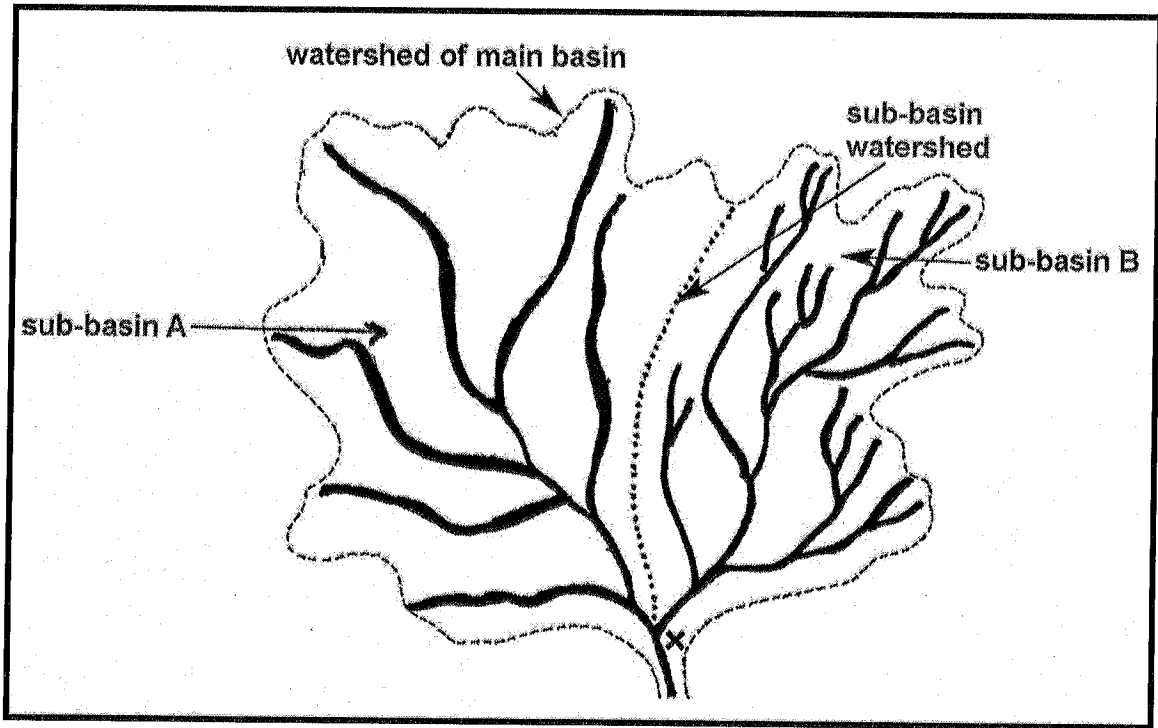
**FIGURE 1.5: DRAINAGE BASIN**



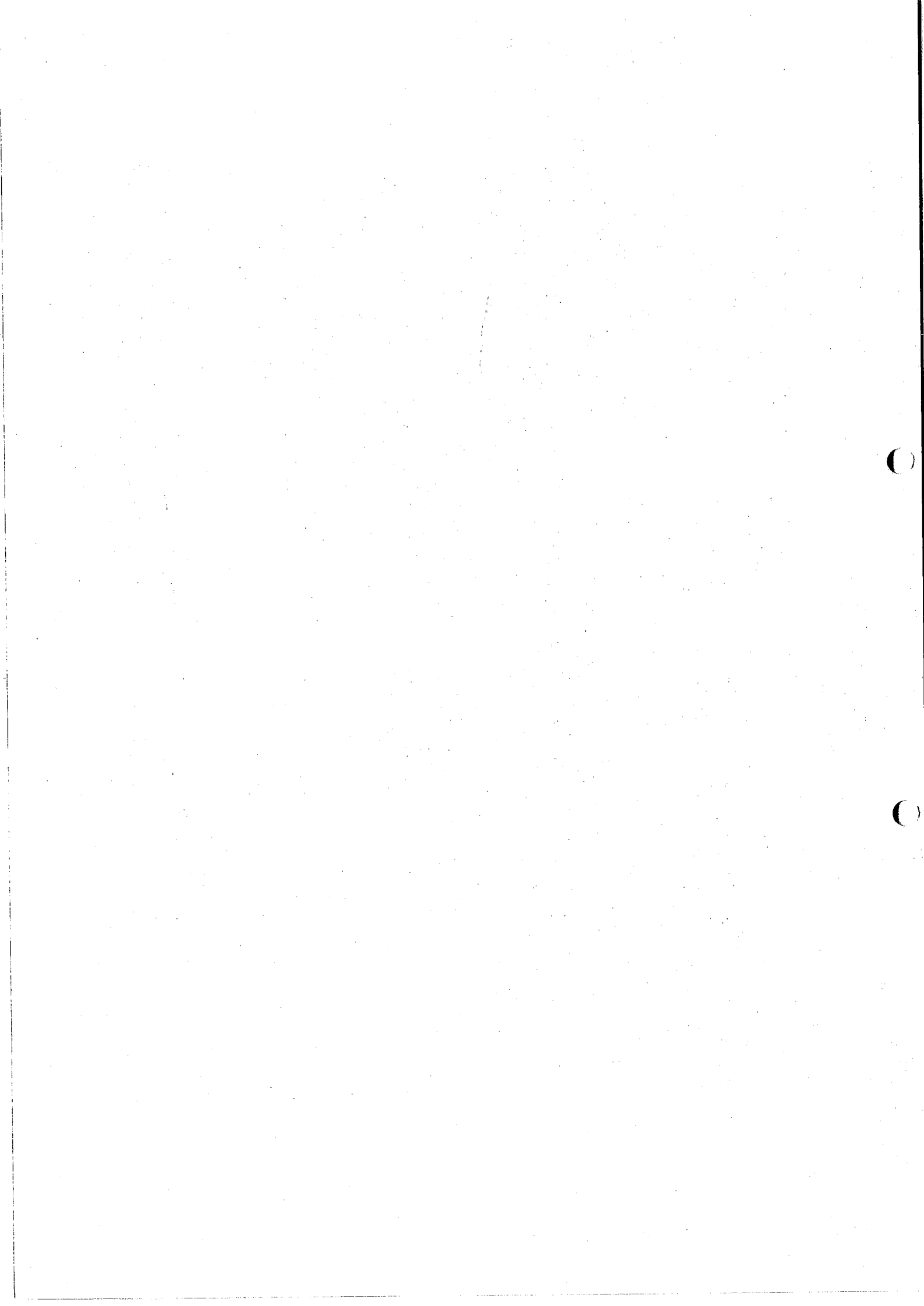
Source: Adapted from Focus Grade 12



**FIGURE 1.6: DRAINAGE DENSITY AND DRAINAGE PATTERN**



Adapted from Study Master





## Basic Education

KwaZulu-Natal Department of Basic Education  
REPUBLIC OF SOUTH AFRICA

GEOGRAPHY P1 & P2 (SECTION A & B)

**MEMORANDUM**

COMMON TEST

MARCH 2016

**NATIONAL  
SENIOR CERTIFICATE**

**GRADE 12**

MARKS: 75

N.B. This question memorandum consists of 11 pages

### SECTION A

#### QUESTION 1

- 1.1
- 1.1.1 mid-latitude ✓
  - 1.1.2 cold ✓
  - 1.1.3 warm ✓
  - 1.1.4 clockwise ✓
  - 1.1.5 westerlies ✓
  - 1.1.6 occlusion ✓
  - 1.1.7 rises ✓
- 1.1.8 increase ✓ (8 x 1) (8)
- 1.2
- 1.2.1 B - Source ✓
  - 1.2.2 D - Mouth ✓
  - 1.2.3 A - Watershed ✓
  - 1.2.4 E - Catchment ✓
  - 1.2.5 C - Permanent ✓
  - 1.2.6 G - Interfluvium ✓
  - 1.2.7 H - Episodic ✓ (7 x 1) (7)

- 1.4  
1.4.1 An area of higher temperatures in an urban setting compared to the temperatures of the suburban and rural surrounding. ✓  
[Concept] (1 x 1) (1)
- 1.4.2 CBD ✓ Inner city, ✓ city centre, ✓ (1 x 1) (1)
- 1.4.3 Concrete in urban areas is able to store three times more heat than the same volume of soil or vegetation. ✓✓  
Concrete absorbs heat slowly during the day and releases it slowly at night thus raising temperatures considerably. ✓✓  
Cities contain a large number of tarred streets which absorb heat, giving rise to high temperatures. ✓✓  
Dark colour paints absorb more heat. ✓✓  
Glass. (1 x 2) (2)

- 1.3  
1.3.1 5 ✓ (1 x 1) (1)
- 1.3.2 Tropical cyclones are named alphabetically. ✓✓  
The tropical cyclone before Funso would start with the letter E which is the 5<sup>th</sup> letter of the alphabet ✓✓
- 1.3.3 Westerly direction then a south-westerly direction and then southerly direction or east to west ✓  
or east to west then southwards ✓  
or east to west then south-westerly ✓  
the path can be erratic. ✓ (1 x 1) (1)
- 1.3.4 No ✓ (1 x 1) (1)
- 1.3.5 Presence of cold front ✓✓  
Cold ocean ✓✓  
Moving into colder waters. ✓✓  
Moving onto land, moisture content will be cut off. ✓✓  
Friction with the land mass. ✓✓  
Moving into cold waters. ✓✓ (1 x 2) (2)
- 1.3.6 Port of Mozambique was closed for two days ✓✓  
The lower beach area was flooded ✓✓  
The beaches had to be closed ✓✓  
The local economy will be damaged ✓✓  
Business and industry will come to a virtual standstill ✓✓  
A lot of money will be spent to sort out the damages ✓✓  
Infrastructure will be damaged which will affect economy ✓✓  
Roads and railways damaged – delays transport activities ✓✓  
Costly insurance claims ✓✓  
Negative impact on tourism ✓✓  
Estuaries and riverine ecosystems will be disrupted. ✓✓  
Storm surges will cause extensive damages. ✓✓ (4 x 2) (8)

[ANY FOUR - accept other reasonable answers]

1.4.4 global warming ✓ /heat island, ✓ greenhouse effect ✓ acid rain, ✓  
air pollution (only). (1 x 1) (1)

1.4.5 Pollution from exhaust fumes ✓  
vehicles give off heat - industries warm up the air ✓  
burning of coal in power stations - heating units in buildings ✓  
ovens of bakeries ✓  
domestic fires ✓  
heaters in homes ✓  
air conditioners and heaters in shops and offices in CBD warms  
the air ✓  
dark brick buildings ✓

(2 x 1) (2)

**[ANY TWO - accept other reasonable answers]**

1.4.6 During the night the air is cooler  
Cooler air heavier and denser thus more subsidence  
Pollution dome pushed lower down ✓  
During the day the air is warmer  
Warmer air lighter and less dense and rises  
Pollution dome lifts higher up ✓  
(Accept other reasonable explanations).

(2 x 2) (4)

**[ANY TWO]**

1.4.7 Cut down the amount of air pollution given off in the city ✓  
Taller chimneys/stacks to release pollutants above inversion  
Limit industrial activities at night time ✓  
Use cleaner fuels in engines ✓  
Legislation and fines to reduce pollution ✓  
Greenbelt development ✓

(2 x 2) (4)

**[ANY TWO- accept other reasonable answers]**

1.5 1.5.1 Refers to the upper surface of zone of saturation. ✓ (Concept) (1 x 1) (1)

1.5.2 The height of the water table varies with seasons. ✓ The  
water table can rise or fall. ✓  
It lies close to the surface of the earth in the rainy season/  
during times of floods when there has been more infiltration. ✓  
During times of drought the water table lies at a low level. ✓

(2 x 1) (2)

1.5.3 ground water (spring, geyser or well) ✓  
rainfall ✓  
melting snow ✓

(2 x 1) (2)

1.5.4 Humans pump out too much groundwater, example in the mining  
industry groundwater is used as a coolant, hence water table  
drops. ✓✓

Humans reduce infiltration by erecting concrete building and tarred  
surfaces. Water cannot infiltrate these tarred surfaces, therefore  
reduces groundwater. ✓✓

Groundwater is polluted with the use of pesticides and chemicals  
from agriculture and industry, which seeps into the ground. ✓✓

(2 x 2) (4)

**(Accept any other reasonable answer)**

1.5.5 Rivers and their catchment areas need to be managed so that:

everyone can have access to water ✓✓  
river ecosystems remain healthy ✓✓  
flooding can be controlled ✓✓  
sustainable development can be maintained: this means  
that water sources are protected so that they are safeguarded  
for present and future generations ✓✓  
users of water sources do not harm rivers and make them  
unusable, for example when a large amount of waste flows  
into rivers, the river plants, animals and microbes are unable  
to break it down. ✓✓

(3 x 2) (6)  
[15]

**(Accept THREE. Accept any other reasonable answer.)**

1.6

- 1.6.1 Drainage density refers to the number of streams or tributaries per unit area. ✓ (concept) (1 x 1) (1)
- 1.6.2 (a) A has a lower drainage density. ✓ (1 x 1) (1)  
 (b) it has fewer streams, ✓✓  
 small network of streams ✓✓ (1 x 2) (2)
- 1.6.3 (a) Dendritic ✓  
 (b) occurs in horizontal sedimentary or massive igneous or metamorphic rocks, that are uniformly resistant to erosion. (1 x 2) (2)
- 1.6.4 Rocks with high degree of permeability will allow most of the water to infiltrate. Drainage density is higher in areas of low rock permeability, because much of the water flows on the surface of the earth as run-off. ✓✓  
 Rocks with a high degree of porosity will allow most of the water to infiltrate.  
 Less water will be available for surface run off. Such areas will have a low drainage density. ✓✓  
 Drainage density is low in areas of dense vegetation. Areas of sparse vegetation have high drainage density. ✓✓  
 Gentle slopes promote infiltration. Low surface run off results in low drainage density. Steep slopes favour rapid run off and results in high drainage density. ✓✓  
 (Accept any other reasonable answers) (4 x 2) (8)

[15]

## SECTION B

## QUESTION 1: MULTIPLE-CHOICE QUESTIONS

The questions below are based on the 1:10 000 topographic map 3126 DD QUEENSTOWN, as well as the orthophoto map 3126 DD 13 QUEENSTOWN as part of the mapped area. Various options are provided as possible answers to the following questions. Choose the correct answer and write only the letter (A – D) in the block next to each question.

- 1.1 Queenstown is located in the ... province.  
 A Gauteng  
 B Kwazulu-Natal  
 C Orange Free State  
 D Eastern Cape D
- 1.2 The human made feature labelled **Z** on the orthophoto map is a ...  
 A golf course  
 B excavation  
 C lake  
 D mine dump A
- 1.3 The Aerodrome in block **F 5/6** is located ... of Queenstown central.  
 A north-west  
 B north  
 C south  
 D north-east C
- 1.4 The natural feature found at **Q** on the topographical map is a ...  
 A lake  
 B marsh and vleij  
 C non-perennial river.  
 D gap C
- 1.5 The type of infrastructure labelled **10** on the orthophoto map is a/an ...  
 A national road,  
 B telephone line.  
 C other road.  
 D main road A

(5 x 1) (5)

**QUESTION 2: MAPWORK TECHNIQUES AND CALCULATIONS**

2.1 Calculate the distance between spot height 1036 in Block J7 and spot height 1339 in Block I 10 in kilometres. Show all calculations.

**Straight line distance = ruler distance x scale**

= 8,7 cm x 0,5 ✓ (Range 8,6 – 8,8)

= 4,35 km. ✓ (Range 4,3 – 4,4km) (2)

2.2 Calculate the area of the land covered by feature 11 on the orthophoto map, in metres. Show ALL calculations. Marks will be awarded for calculations.

**Area = L x B**

L = 3,3 x 100 = 330 ✓ or (3,3 x 0,1 x 1000) Range (3,1 – 3,5)

B = 2,2 x 100 = 220 ✓ or (2,2 x 0,1 x 1000) Range (2,0 – 2,4)

L x B = 330 x 220 ✓  
= 72 600 m<sup>2</sup> ✓

(Range= 62 000 – 84 000 m<sup>2</sup>) (4)

2.3 Calculate the true bearing of spot height 1025 in Block I 5 from spot height 1061 in Block J4.

50° (degrees) ✓ (range 49° to 51° (degrees)) (1) [7]

**QUESTION 3: APPLICATION AND INTERPRETATION**

3.1 Give ONE piece of evidence from the topographical map which indicates that the town of Queenstown receives seasonal rainfall.

- presence of furrows ✓
- presence of dams ✓
- presence of windpumps ✓
- presence of reservoirs ✓
- non perennial rivers
- Absence of large tracks of natural vegetation. [Any ONE] (1 x 1)(1)

3.2 The general flow direction of the Bonkolo river in Block A8 is southerly. Provide ONE piece of map evidence in support of this statement.

- Dam wall is facing in a southwesterly direction ✓✓
- Spot height readings decreases in a southerly direction along the river ✓✓
- Contour readings decreases in a southerly direction along the river ✓✓
- Tributaries join the main river at acute angles, facing in a southerly direction ✓✓ [Any ONE] (1 x 2)(2)

3.3 Give ONE reason why the north eastward expansion of Queenstown is limited.

- Very steep and hilly area ✓ (1 x 1)(1)

3.4 Explain how the topography (physical landscape) influenced the siting of the Bonkolo Dam.

- Lower evaporation rates. ✓✓
- Mountain sides act as natural dam walls. ✓✓
- water flows under natural pressure (gravity) ✓✓
- less siltation. ✓✓
- lower pollution levels ✓✓ (1 x 2)(2)

3.5 Map evidence indicates that soil erosion is occurring especially in the north west of Queenstown. Suggest ONE way in which the town engineers can address this environmental problem.

- Construct cement barriers along the slopes/Retaining walls. ✓✓
- Reduce deforestation. ✓✓
- Afforestation and grassing of slopes. ✓✓
- Plant natural vegetation. ✓✓
- (Accept other reasonable responses) (1 x 2)(2)

**QUESTION 4: MAP PROJECTION AND GEOGRAPHICAL INFORMATION SYSTEMS**

- 4.1 Define the term Geographic Information System.  
*It is a computerised system for capturing, analysing and displaying geographic data.* [Concept] ✓ (1 x 1) (1)
- 4.2 Differentiate between attribute and spatial data of Berry Dam in Block D10.  
*Attribute data refers to the description or characteristics of the dam, example the size/ length/ storing capacity/ of Berry Dam.* ✓  
*Spatial data refers to the exact location of Berry Dam in terms of the latitude and longitude.* ✓ (2 x 1) (2)
- 4.3 The Eastern Cape Tourism Board wants to promote Queenstown as a major tourism destination, provide **ONE** reason why the use of secondary sources would be a disadvantage.  
*Data / information about Queenstown may not be accurate and reliable.* ✓✓  
*Data may be outdated.* ✓✓ / *Information may be biased.* ✓✓ (1 x 2) (2) [5]

**TOTAL MARKS: [25]**