



**NATIONAL  
SENIOR CERTIFICATE**

**GRADE 11**

**NOVEMBER 2023**

**GEOGRAPHY P2**

**MARKS: 150**

**TIME: 3 hours**



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This question paper consists of 20 pages.

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**INSTRUCTIONS AND INFORMATION**

1. This question paper consists of TWO SECTIONS.

## SECTION A:

QUESTION 1: DEVELOPMENT GEOGRAPHY (60)

QUESTION 2: RESOURCES AND SUSTAINABILITY (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 on 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.
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. 1 020 hPa, 14 °C and 45 m.
11. You may use a non-programmable calculator.
12. You may use a magnifying glass.
13. Write neatly and legibly.

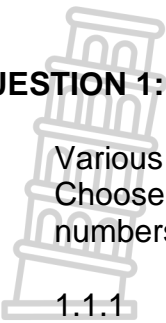
**SPECIFIC INSTRUCTIONS AND INFORMATION FOR SECTION B**

14. A 1 : 50 000 topographical map of 2730DD VRYHEID and the 1 : 10 000 orthophoto map are provided.
15. The area demarcated in BLACK on the topographical map represents the area covered by the orthophoto map.
16. Marks will be allocated for steps in calculations.
17. You must hand in the topographical and the orthophoto map to the invigilator at the end of this examination session.

**SECTION A: DEVELOPMENT GEOGRAPHY AND RESOURCES AND SUSTAINABILITY**

**QUESTION 1: DEVELOPMENT GEOGRAPHY**

1.1 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 (1.1.1 to 1.1.7) in the ANSWER BOOK, for example 1.1.8 D.



1.1.1 Less Economically Developed Countries (LEDC) are characterised by ... and ...

- (i) high population growth
- (ii) high life expectancy
- (iii) minimal industrialisation
- (iv) technological development

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

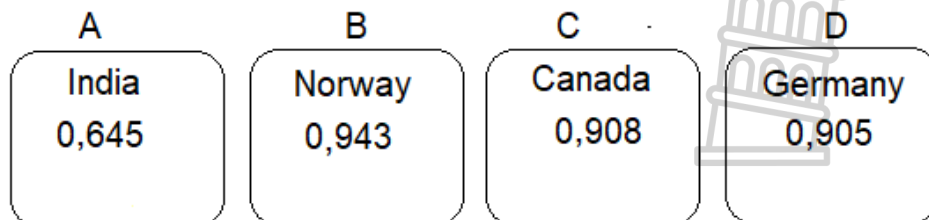
1.1.2 The ... indicator shows how wealth is shared in a country.

- A quality of life
- B human development
- C demographic
- D Gini co-efficient

1.1.3 Social indicators of human development include ... rates.

- A maternal mortality
- B literacy
- C infant mortality
- D death

1.1.4 The country depicting the highest level of human development is ...



1.1.5 Australia is a ... country located ... of the Brandt Line.

- A developing; south
- B developing; north
- C developed; south
- D developed; north

1.1.6 Providing a community with access to electricity and schools is classified as ... development.



- A basic needs
- B sustainable
- C equitable
- D appropriate

1.1.7 Promoting sustainable development in the Southern African Development Community (SADC) countries, is development at a ... level.

- A community
- B national
- C regional
- D continental

(7 x 1) (7)



- 1.2 Use the table below to complete the statements in COLUMN A with the options in COLUMN B. Write only **X** or **Y** next to question numbers (1.2.1 to 1.2.8) in the ANSWER BOOK, for example 1.2.9 Y.

SOUTH AFRICAN EXPORTS		SOUTH AFRICAN IMPORTS	
R88 679 256 980		R101 762 020 372	
Trade Balance: R-13 082 763 392			
Top 5 countries SA exported to:		Top 5 countries SA imported from:	
1. China 11,1		1. China 23,1	
2. United States 8,1		2. Germany 9,2	
3. Germany 6,2		3. United States 5,7	
4. Japan 4,8		4. India 4,2	
5. Botswana 4,8		5. Saudi Arabia 3,4	

[Source: <https://prestigecredit.co.za/2019/03/01/south-africa-s-trade-statistics-for-january-2019/>]

COLUMN A		COLUMN B	
1.2.1	The value of South Africa's ... is greater than the value of its ...	X	exports; imports
		Y	imports; exports
1.2.2	South Africa has a ... trade balance with the USA	X	positive
		Y	negative
1.2.3	... % of goods are exported from South Africa to Germany	X	6,2
		Y	9,2
1.2.4	South Africa has trade ... with Germany	X	surplus
		Y	deficit
1.2.5	The relationship between the value of a country's exports and its imports	X	balance of trade
		Y	balance of payments
1.2.6	China's economic development can be attributed to an ... approach to development	X	import-led
		Y	export-led
1.2.7	Limits set by governments to the amount of imported goods	X	quotas
		Y	subsidies
1.2.8	Unlimited trade of goods and services between countries without the constraints of tariffs and quotas	X	fair trade
		Y	free trade

(8 x 1) (8)

1.3 Refer to the extract below on the Growing Hope community food gardens.



Community food gardens in Cape Town bring hope to their communities by activating green spaces, supplementing diets with fresh vegetables and creating environmental awareness.

Despite facing many challenges, urban gardeners persevere and bring hope to their communities.

[Adapted from <http://vpuu.org.za/projects/towards-a-community-economy/>]

- 1.3.1 Classify the food gardens referred to in the extract as rural or urban community development. (1 x 1) (1)
- 1.3.2 Account for the food gardens being community-based development. (1 x 2) (2)
- 1.3.3 Give TWO examples of human capital that could contribute to the project's success. (2 x 1) (2)
- 1.3.4 What are the social benefits of a well-managed community food garden? (2 x 2) (4)
- 1.3.5 What challenges would the community food garden face with limited access to funding? (3 x 2) (6)

1.4 Refer to the image below based on international trade and trade agreement.



[Source: Examiner's own sketch]

- 1.4.1 From the sketch, identify ONE commodity that is traded. (1 x 1) (1)
- 1.4.2 How does the sketch illustrate the successful process of trade? (1 x 1) (1)
- 1.4.3 Quote evidence from the sketch that depicts trade is on an international scale. (1 x 1) (1)
- 1.4.4 How has globalisation contributed to the rapid expansion of international trade? (2 x 2) (4)
- 1.4.5 In a paragraph of approximately EIGHT lines, explain how the principles of fair trade have a positive impact on the economic development of communities in developing countries. (4 x 2) (8)





- 1.5 Refer to the extract on development aid for African countries.

### AFRICAN COUNTRIES RECEIVE AID AFTER CYCLONE FREDDY

The European Union (EU) provided €2,5 million (R48 600 000) emergency funding to Mozambique, Malawi and Madagascar when they were struck by Tropical Cyclone Freddy in February 2023.

Tropical storms and cyclones, floods, droughts and epidemics occur often, rendering the African region highly vulnerable to these risks.

An air support operation helped humanitarian stakeholders to reach communities affected by the flooding and strong winds. With this aid, humanitarian partners on the ground were able to procure essentials such as food, protection, emergency shelter and non-food items.

Health and emergency services were also assisted because of the cholera epidemic that broke out in the region. Aid was allocated to partners working in the water, sanitation and hygiene sector to try and curb the effects of the water-borne diseases.



[Adapted from <https://civil-protection-humanitarian-aid.ec.europa.eu/news-stories/news/southern-africa-and-indian-ocean-eu-allocates-eu25-million-emergency-aid/>]

- 1.5.1 What is *humanitarian aid*? (1 x 2) (2)
- 1.5.2 Name TWO countries that were affected by Tropical Cyclone Freddy. (2 x 1) (2)
- 1.5.3 Identify an example of humanitarian aid mentioned in the extract. (1 x 1) (1)
- 1.5.4 Why was humanitarian aid needed in these countries? (2 x 1) (2)
- 1.5.5 Why do LEDCs face more challenges in their efforts to recover from natural disasters compared to MEDCs? (2 x 2) (4)
- 1.5.6 Explain the negative impact of humanitarian aid on developing countries. (2 x 2) (4)

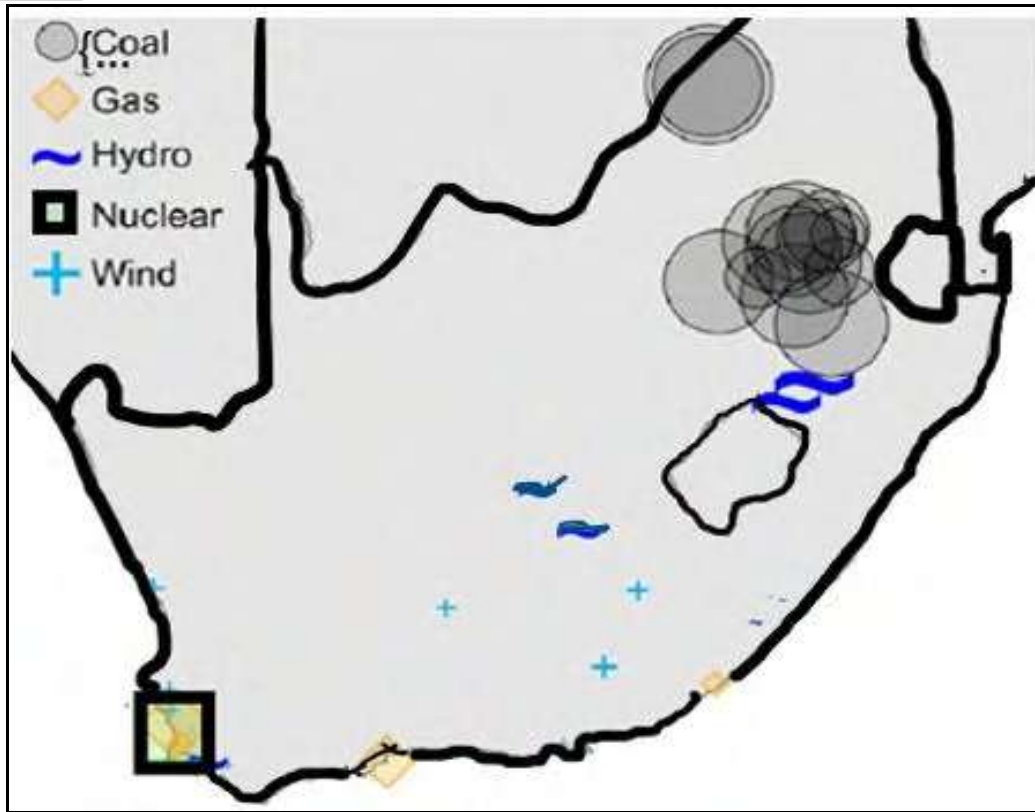
[60]



**QUESTION 2: RESOURCES AND SUSTAINABILITY**

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 2.1.7) in the ANSWER BOOK, for example 2.1.8 D.

Refer to the map below showing the distribution of South Africa's energy sources, to answer QUESTIONS 2.1.1 and 2.1.2.



[Source: <https://www.researchgate.net/figure/Map-of-Power-Plants-in-the-Republic-of-South-Africa>]

2.1.1 In which province is South Africa's only operational nuclear power plant located?

- A Gauteng
- B Mpumalanga
- C Limpopo
- D Western Cape

2.1.2 The majority of South Africa's coal-fired power stations are in the Mpumalanga Province due to ...

- A rich coal deposits there.
- B proximity to other countries.
- C concentration of people.
- D a high demand for electricity.

2.1.3 Conventional energy sources in South Africa include:



- (i) coal
- (ii) solar
- (iii) hydro
- (iv) gas

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

2.1.4 *Going green* is an important step towards ...

- A an increased carbon footprint.
- B a more sustainable lifestyle.
- C increasing greenhouse gases.
- D resource depletion.

2.1.5 Natural resources being used in an unsustainable way include ... and ...

- (i) afforestation.
- (ii) extensive use of fossil fuels.
- (iii) reforestation.
- (iv) heavy use of agrichemicals.

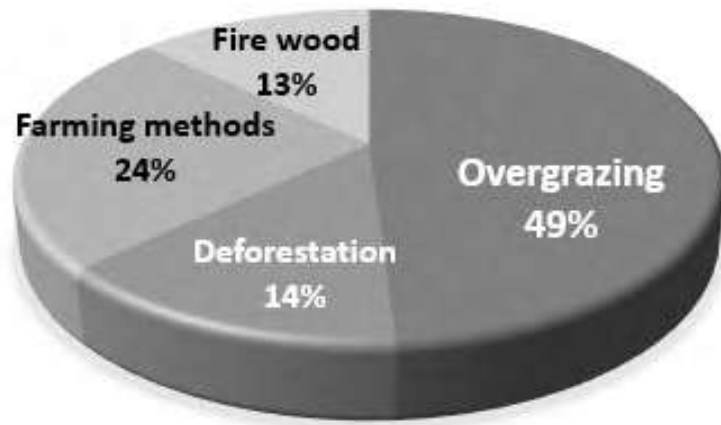
- A (i) and (ii)
- B (ii) and (iii)
- C (iii) and (iv)
- D (ii) and (iv)

2.1.6 The country with the most ecological footprint per person is ...



- A Botswana
- B USA
- C Qatar
- D Mauritius

2.1.7 According to the pie chart below, the main causes of soil erosion is/are ...

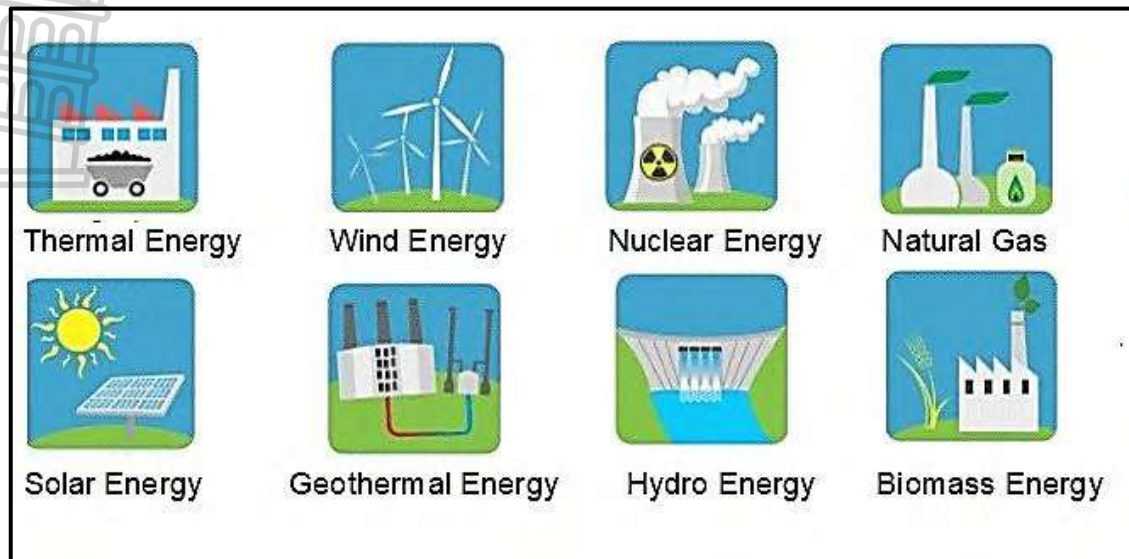


- A climate change.
- B industrialisation.
- C agricultural activities.
- D urbanisation.

(7 x 1) (7)



- 2.2 The photographs below show different ways how electrical energy is obtained in South Africa. Match the descriptions below with the appropriate energy source. Write only the energy source next to the question numbers (2.2.1 to 2.2.8) in the ANSWER BOOK, for example 2.2.9 Thermal energy.



[Adapted from <https://www.sciencedirect.com/topics/engineering/primary-energy-source>]

- 2.2.1 Obtained by splitting uranium atoms
- 2.2.2 Use of heat of underground rocks and water
- 2.2.3 Burning vegetation and organic material
- 2.2.4 Photovoltaic panels converting the sun's rays
- 2.2.5 Energy obtained by burning coal in power stations
- 2.2.6 Energy that is a combination of renewable and a non-renewable
- 2.2.7 Using the force of running water
- 2.2.8 Referred to as heat energy

(8 x 1) (8)

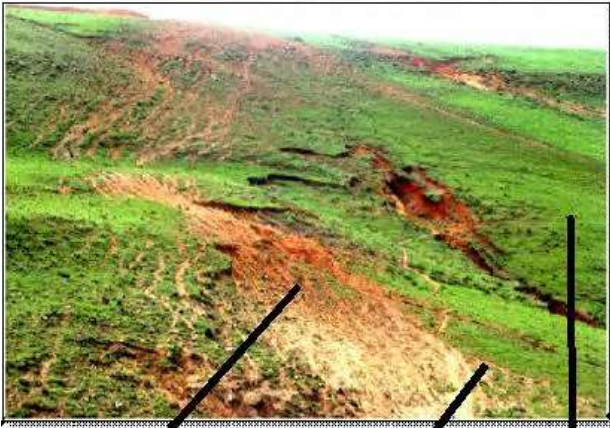





2.3 Refer to the infographic on soil erosion in the Drakensburg uplands of South Africa.

**Soil surface coverage by vegetation for the different land degradation intensities**

Land degradation, in the form of soil erosion, is a major threat facing the sustainability of rangelands.

The mismanagement of lands (overgrazing and livestock trampling), related to the increasing population densities and demand for land, have caused soil erosion.



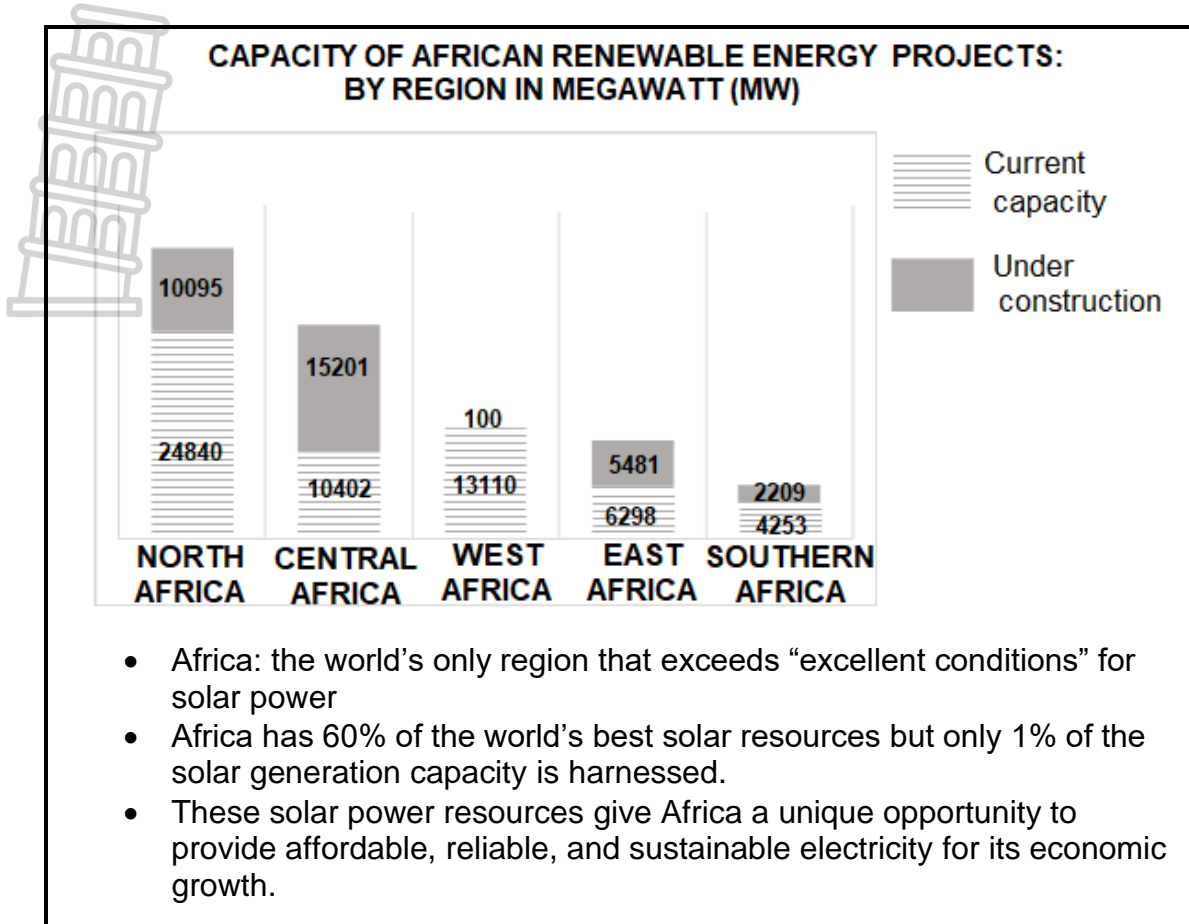
		
<b>A</b>	<b>B</b>	<b>C</b>
0-5% grass cover Heavily degraded soil	25-50% grass cover Moderately degraded soil	75-100% grass cover Non-degraded soil

[Adapted from <https://www.intechopen.com/chapters/50695>]

- 2.3.1 How has the increasing population density and demand for land caused soil erosion? (1 x 2) (2)
- 2.3.2 (a) Which image (**A**, **B** or **C**) is most vulnerable to soil erosion? (1 x 1) (1)
- (b) Explain your answer to QUESTION 2.3.2(a) by referring to the impact of the grass cover. (1 x 2) (2)
- 2.3.3 Why is soil erosion 'a major threat' to the livelihood of subsistence farmers who use the communal land? (2 x 1) (2)
- 2.3.4 In a paragraph of EIGHT lines, explain sustainable management strategies that can be used to control and prevent soil erosion. (4 x 2) (8)



2.4 Refer the extract below on Africa’s renewable energy.



[Adapted from <https://www.weforum.org/agenda/2022/09/africa-solar-power-potential/>]

- 2.4.1 What is *renewable energy*? (1 x 2) (2)
- 2.4.2 Which region is the current leader on the African continent in renewable energy capacity? (1 x 1) (1)
- 2.4.3 Which African region, when all their under-construction projects are complete, will more than double their current capacity? (1 x 2) (2)
- 2.4.4 What physical factors contribute to Africa being described as exceeding ‘excellent conditions’ for solar power? (2 x 1) (2)
- 2.4.5 How will the development of solar power plants contribute to Africa’s economic growth? (2 x 2) (4)
- 2.4.6 Explain the challenges Africa faces in increasing their capacity to generate solar energy. (2 x 2) (4)



2.5 Refer to the extract on South Africa's energy management.

**COAL STILL HAS AN IMPORTANT ROLE TO PLAY IN SOUTH AFRICA:  
TODAY AND TOMORROW**

South Africa's coal-fired power stations are linked with South Africa's energy crisis. The government-owned national power utility, Eskom Holdings – which generates 90% of the electricity used in South Africa and 30% of the electricity generated on the African continent – has been unable to keep up with the national demand for electricity.

Eskom's 14 coal-fired power stations are either old and inadequately maintained or poorly designed and not operating to capacity. Due to these issues, South Africa experiences a daily shortfall of around 4 000–6 000 megawatts, roughly equivalent to 10% of current use. What result are scheduled power outages (or loadshedding\*).

Unstable access to electricity does not only impact negatively on daily lives of the public, but power outages also cause disruptions to businesses, damaging the very economic backbone of the nation.

To address this problem, South Africa has been working to shift its energy mix from coal to renewables like wind and solar. However, from a holistic perspective, coal has a crucial role to play in stabilising the country's energy sector and business environment.

\*Loadshedding: when a power station cannot meet demand for electricity, power is switched off to parts of the grid to protect power generating assets.

[Adapted from <https://energycapitalpower.com/like-it-or-not-coal-still-has-an-important-role-to-play-in-south-africa-today-and-tomorrow/>]

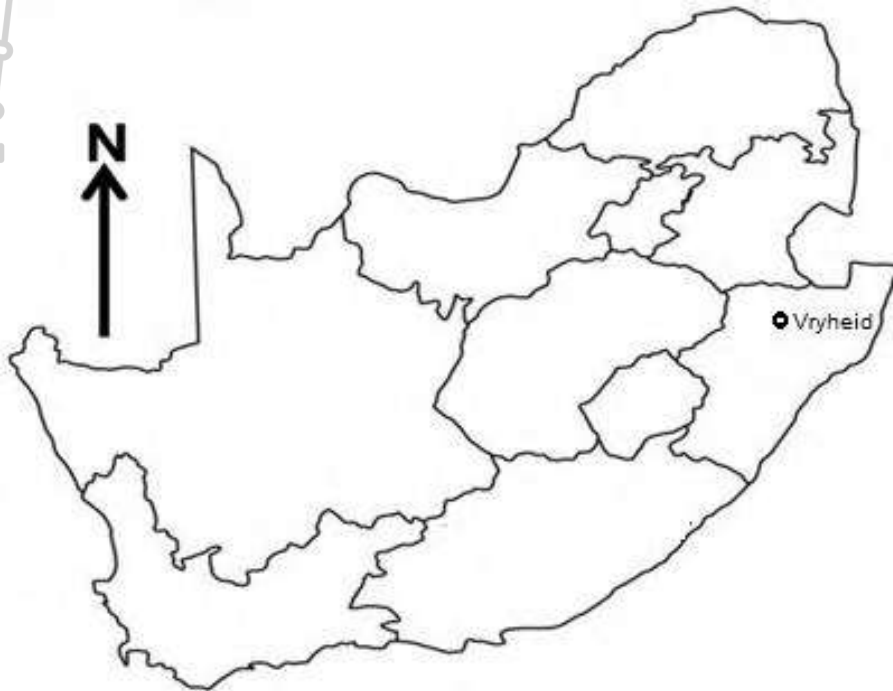
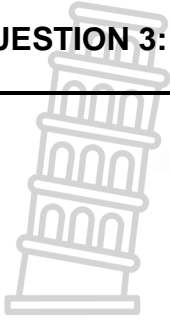
- 2.5.1 According to the extract, what percentage of South Africa's electricity does Eskom generate? (1 x 1) (1)
- 2.5.2 Quote from the extract, why Eskom's fourteen (14) coal-fired power stations are unable to meet the national demand for electricity. (2 x 1) (2)
- 2.5.3 How does unstable electricity supply (loadshedding) affect small businesses? (1 x 2) (2)
- 2.5.4 In what ways do South Africa's reliance on coal-fired power stations impact the environment? (2 x 2) (4)
- 2.5.5 Explain why reducing the country's dependency on coal as a source of energy would be detrimental to the economy. (3 x 2) (6)

**[60]**

## SECTION B

## QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES

## GENERAL INFORMATION ON VRYHEID



Coordinates: 27° 45' 55" S; 30° 47' 32" E

Vryheid is in the Abaqulusi Municipality in KwaZulu-Natal. The town has a relatively large commercial and service sectors although the economy is dependent on agriculture and coal mining. Primary activities include livestock farming, irrigated crop production, orchards and significant forestry plantations. The commercial agriculture is under threat from land degradation and droughts. The mining sector has traditionally been a key stimulus of the districts' economy, however, mining activities in the district decreased in the mid-1990s mainly due to the closure of mines.

[Adapted from *Zululand District Municipality Integrated Development Plan: 2020/2021*]

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

**ENGLISH**

Aerodrome  
Canal  
Diggings  
Furrow  
Golf course  
Sewerage works  
Show grounds  
Waterfall  
Weir

**AFRIKAANS**

Vliegveld  
Kanaal  
Uitgrawings  
Voor  
Gholfbaan  
Rioolwerke  
Skougronde  
Waterval  
Studam



**QUESTION 3****3.1 MAPWORK SKILLS AND CALCULATIONS**

Refer to the topographical map and the orthophoto map. 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 (3.1.1 to 3.1.2) in the ANSWER BOOK, for example 3.1.3 A.

3.1.1 The map index south-east of 2730DD is ...

- A 2831AA.  
 B 2731CA.  
 C 2730DA.  
 D 2730BA. (1 x 1) (1)

3.1.2 On the orthophoto map, 1 cm represents ... in reality.

- A 1 000 cm  
 B 1 km  
 C 100 m  
 D 0,1 m (1 x 1) (1)

3.1.3 The updated mean magnetic declination (MD) for 2023 is 22°14' west of True North.

Determine the magnetic bearing (MB) of the hiking trail, from **H** (block **B1**) to the dam **I** (block **C1**) on the topographical map.

(2 x 1) (2)

3.1.4 Why it is important for a hiker to use the magnetic bearing instead of the true bearing to determine direction on the topographical map?

(1 x 1) (1)

3.1.5 Refer to **1** and **2** on the orthophoto map.

- (a) The straight-line distance on the map, from **1** to **2**, is 3,8 cm. Calculate the actual distance in meters. (2 x 1) (2)  
 (b) Calculate the average gradient between **1** and **2**.

Formula: **Average gradient** =  $\frac{\text{Vertical interval (VI)}}{\text{Horizontal equivalent (HE)}}$

(3 x 1) (3)

3.2 MAP INTERPRETATION

Refer to the topographical map.



3.2.1 The man-made feature **J** in block **D4** is a(n) ...

- A railway station.
- B excavation.
- C embankment.
- D mine dump.

(1 x 1) (1)

3.2.2 The Besterspruit River in block **E4** is ... and flows ...

- (i) non-perennial.
- (ii) perennial.
- (iii) northwards.
- (iv) southwards.

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

(1 x 1) (1)

3.2.3 Refer to the topographical map and the photograph below which depicts **K** in **D6**.



[Adapted from Google Maps]

(a) Use both the topographical map and photographic evidence above to explain why the Klipfontein Dam is not a good location for the construction of a hydro-electric power station.

(1 x 2) (2)

(b) Suggest TWO economic activities that could benefit from the Klipfontein Dam.

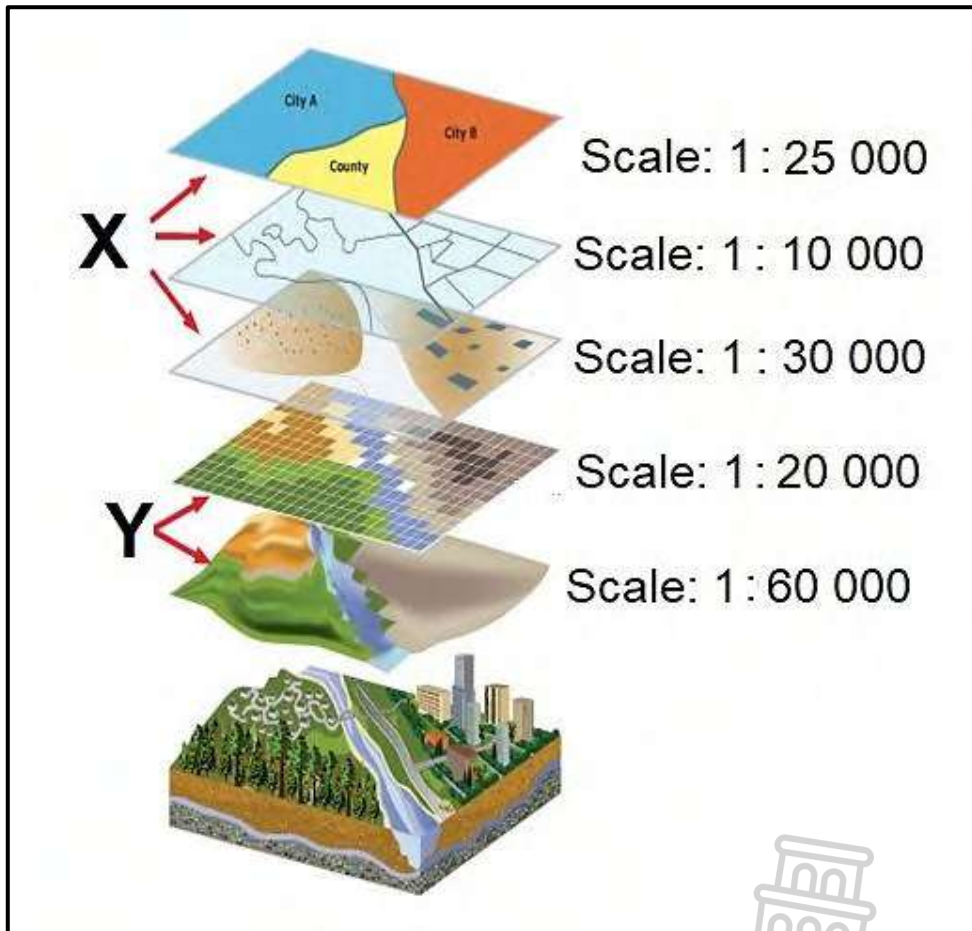
(2 x 1) (2)

3.2.4 Refer to the area demarcated by **L** in block **E3/F3** and **E4/F4** on the **topographical map**, which shows extensive soil erosion.

- (a) Describe the process of *soil erosion*. (1 x 2) (2)
- (b) Explain the negative effects of soil erosion on the physical environment. (2 x 2) (4)

3.3 **GEOGRAPHICAL INFORMATION SYSTEMS (GIS)**

3.3.1 Refer to the diagram showing the process of data layering.



[Source: <https://www.esri.com/arcgis>]

- (a) Classify layers **X** and **Y** as raster or vector data. (2 x 1) (2)
- (b) Explain your answer for layer **Y**. (1 x 2) (2)

3.3.2 Locate the VRYHEID NATURE RESERVE in blocks **B1 / C1**, which makes use of GIS to help manage the reserve sustainably.

Name TWO physical (natural) layers the reserve management would use to make informed decisions about resource management. (2 x 1) (2)

3.3.3 Consider the woodland (3) on the orthophoto map.



How would continuous collection of satellite imagery data of the area assist in monitoring deforestation?

(1 x 2)

(2)

**[30]**

**TOTAL: 150**







**NATIONAL  
SENIOR CERTIFICATE**

**GRADE 11**

**NOVEMBER 2023**

**GEOGRAPHY P2  
MARKING GUIDELINE**

**MARKS: 150**



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This marking guideline consists of 12 pages.

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**SECTION A: DEVELOPMENT GEOGRAPHY AND RESOURCES AND SUSTAINABILITY**

**QUESTION 1: DEVELOPMENT GEOGRAPHY**

- 1.1 1.1.1 B (1)
- 1.1.2 D (1)
- 1.1.3 B (1)
- 1.1.4 B (1)
- 1.1.5 D (1)
- 1.1.6 A (1)
- 1.1.7 C (1) (7 x 1) (7)
- 1.2 1.2.1 Y (1)
- 1.2.2 Y (1)
- 1.2.3 X (1)
- 1.2.4 Y (1)
- 1.2.5 Y (1)
- 1.2.6 X (1)
- 1.2.7 X (1)
- 1.2.8 Y (1) (8 x 1) (8)
- 1.3 1.3.1 Urban (1) (1 x 1) (1)
- 1.3.2 A community that works together to bring about successful development (2)  
 Community-driven (2)  
 Development for the people by the people (2)  
 The community members aim to improve their quality of life and living standards (2)  
**[ANY ONE]** (1 x 2) (2)

- 1.3.3 Skills (1)  
 Knowledge (1)  
 Education (1)  
 Training (1)  
 Experience (1)  
 Labour (1)  
 Technical know-how/expertise (1)  
 Creativity (1)  
 Good health (1)  
**[ANY TWO]** (2 x 1) (2)
- 1.3.4 Decreased poverty (2)  
 Contributes to food security / access to food (2)  
 Increases the availability of nutritious / healthy foods (2)  
 Improves quality of life / livelihood (2)  
 Reduces crime (2)  
 Fosters community collaboration (2)  
 Sense of community working towards a common goal (2)  
 Promotes *ubuntu* (humanity towards others) (2)  
 Encourages sharing, caring and trust (2)  
 Transfer of skills / upskilling (2)  
 Promotes shared learning (2)  
 Builds community resilience (2)  
 Support school-feeding schemes (2)  
 Contribute to social transformation of community (2)  
**[ANY TWO]** (2 x 2) (4)
- 1.3.5 No money to buy inputs (seeds / plants) (2)  
 Wages cannot be paid; abandonment of project (2)  
 Equipment / technology / tools cannot be purchased (2)  
 Pesticides cannot be purchased which renders garden vulnerable (2)  
 No fertiliser purchased to aid the yield  
 Cannot afford fencing / netting which deters animals and birds (2)  
 No safety net /insurance/ savings to recover from difficulties i.e. failed crop (2)  
 Negatively affects transportation of inputs / produce delivery (2)  
 Inability to pay for municipal water so crops die (2)  
 No means of buying (JoJo) tanks to supplement water supply (2)  
 Cannot afford Genetically Modified Organisms (GMOs); frost/drought-resistant seeds (2)  
 Inability to keep up with inflation / rising prices of inputs (2)  
**[ANY THREE]** (3 x 2) (6)

- 1.4 1.4.1 Cocoa (1)  
Coffee (1)  
**[ANY ONE]** (1 x 1) (1)
- 1.4.2 Handshake (1)  
Two parties shaking in agreement (1)  
The arrow indicating successful movement (1)  
**[ANY ONE]** (1 x 1) (1)
- 1.4.3 Export (1)  
Import (1)  
Export / import (1)  
**[ANY ONE]** (1 x 1) (1)
- 1.4.4 Sophisticated communication networks (2)  
Improved connectivity eases development of trading relationships (2)  
There is freer movement of goods (opening borders) (2)  
Less restrictions / barriers for international trade (2)  
Globalisation has encouraged the liberalisation of trade (2)  
It is easier / quicker for countries to trade (transport networks) (2)  
Technological innovations in transport and communications have facilitated international trade (2)  
Global organisations have helped the international flow of commodities (2)  
Growing integration of economies (2)  
**[ANY TWO]** (2 x 2) (4)
- 1.4.5 Increased wages ensuring a decent liveable wage is earned (2)  
Higher earning potential increasing household income (2)  
Prompt and fair payment promotes access to money (2)  
Ensures good working conditions reducing injuries and illnesses (2)  
Sharing profit reduces poverty (2)  
Infrastructural investment increasing output and earning capacity (2)  
Investment in community development projects (accept examples) (2)  
Access to education and training to improve skill set (2)  
Ensuring no child labour so children can attend school (2)  
Commitment to gender equality which empowers women (2)  
Cultural and ethnic identity respected building positive and equitable relationships (2)  
There is equitable income distribution which reduces household poverty (2)  
Inclusive workplaces that encourage individuals to participate in decisions will increase productivity (2)  
Materials are reused, recycled and regenerated, reducing expenditure (2)  
**[ANY FOUR]** (4 x 2) (8)

- 1.5 1.5.1 Aid and action designed to save lives. (2)  
 Aid aimed at protecting human dignity during and in the aftermath of emergencies (2)  
 Aid that is given to help people / reduce pain and suffering (2)  
 Aid that is given to relieve people of the effects of a disaster (2)  
**[CONCEPT]** (1 x 2) (2)
- 1.5.2 Mozambique (1)  
 Malawi (1)  
 Madagascar (1)  
**[ANY TWO]** (2 x 1) (2)
- 1.5.3 Food (1)  
 Clean water (1)  
 Protection (1)  
 Shelter (1)  
 Health / medical services (1)  
 Emergency services (1)  
**[ANY ONE]** (1 x 1) (1)
- 1.5.4 Flooding and strong winds affected communities (1)  
 There was a cholera epidemic (1)  
 Water, sanitation, and hygiene sector affected (1)  
 Communities were isolated (reached by air)  
 Insufficient food and non-food items (1)  
 People lost their houses and needed shelter (1)  
 Immediate medical attention was needed (1)  
**[ANY TWO]** (2 x 1) (2)
- 1.5.5 LEDCs have fewer financial resources to assist (2)  
 High levels of poverty (2)  
 Low economic growth and high debt (2)  
 Inadequate infrastructure (2)  
 Less able to adapt and build resilience to natural hazards (2)  
 Fewer professionals / experts to assist (2)  
 More remote areas making it accessibility difficult (2)  
 Limited resources (human, financial, physical) to allocate (2)  
 Many marginalised communities who will rely on aid to recover (2)  
 They do not have the financial safety net / insurance (2)  
 LEDC economy rely on agriculture which will be impacted (affecting GDP and food security) (2)  
 Less technology / early warning systems to warn people to evacuate (2)  
 Effects of natural disaster overwhelm the limited local response capacity (2)  
 Political instability / corruption hinders recover process (2)  
 Growing share of population live in high-risk zones (high density)  
 Financial losses are proportionately much higher for LEDCs (2)  
 Long-term investment diverted from development to reconstruction (2)  
**[ANY TWO]** (2 x 2) (4)

- 1.5.6 Culture of dependency is created (2)  
 Risk of corruption (2)  
 Economic and political pressure on recipient country (2)  
 A hidden agenda from the donor which may not be beneficial (2)  
 Short-term aid can create a false sense of security (2)  
 Aid may not suit the needs of the recipient country (2)

**[ANY TWO]**

(2 x 2) (4)  
**[60]**



**QUESTION 2**

2.1 2.1.1 D (1)

2.1.2 A (1)

2.1.3 C (1)

2.1.4 B (1)

2.1.5 D (1)

2.1.6 C (1)

2.1.7 C (1)

(7 x 1) (7)

2.2 2.2.1 Nuclear (1)

2.2.2 Geo-thermal (1)

2.2.3 Biomass (1)

2.2.4 Solar (1)

2.2.5 Thermal (1)

2.2.6 Nuclear (1)

2.2.7 Hydro (1)

2.2.8 Thermal (1)

(8 x 1) (8)





- 2.3 2.3.1 More cattle (overgrazing) (2)  
 Increased livestock causing increased compaction of soil (2)  
 Insufficient time for soil to rejuvenate (2)  
 Land is not being left fallow (2)  
**[ANY ONE]** (1 x 2) (2)
- 2.3.2 (a) A (1) (1 x 1) (1)
- 2.3.2 (b) **A** has the least protection (least grass cover) from heavy rain and wind (2)  
 Exposed soil is more vulnerable to rain splash (losing the soil particles) and runoff (2)  
 There is less infiltration and more runoff with bare ground (2)  
 Less vegetation to slow down water movement (2)  
 Less vegetation stabilising the soil (fewer roots to bind soil) (2)  
 Less vegetation to anchor and reinforce the soil with its root system (2)  
 Less vegetation reducing the soil's water holding capacity which increases runoff (2)  
 Less vegetation to intercept rain increasing water's energy (2)  
 Less vegetation which leaves the soil exposed to the wind blowing soil away (2)  
**[ANY ONE]** (1 x 2) (2)
- 2.3.3 Reduces agricultural productivity increasing poverty (2)  
 Lower yields make them vulnerable to food insecurity (2)  
 Malnutrition / starvation (people) (2)  
 Compromised water quality adds pressure (2)  
 Limited grazing makes farmers extra vulnerable to drought (2)  
 Forces farmers to slaughter or sell cattle at reduced rate (2)  
 Cattle are kept as a measure of wealth – farmers do not want to farm fewer cattle (2)  
 Limited financial resources spent on feed for animals causing financial strains (2)  
 More people are unemployed increasing poverty (2)  
**[ANY TWO]** (2 x 1) (2)
- 2.3.4 Contour ploughing (2)  
 Avoid ploughing downslope (2)  
 Crop rotation (2)  
 Avoid over-cropping (2)  
 Rotational grazing (2)  
 Afforestation / reforestation (2)  
 Protect grasslands (2)  
 Drainage basin management (2)  
 Public education (2)  
 Retain border of natural vegetation along river (not used for farming) (2)  
 Build soil organic matter (2)  
 Practice no-till/minimal tillage (2)  
**[ANY FOUR]** (4 x 2) (8)

- 2.4 2.4.1 Energy produced from sources like the sun and wind that do not run out (2)  
It is an energy source that can naturally replenish itself (2)  
**[CONCEPT]** (1 x 2) (2)
- 2.4.2 North Africa (1) (1 x 1) (1)
- 2.4.3 Central Africa (1) (2 x 1) (2)
- 2.4.4 Land availability (1)  
Reliable sunlight (1)  
Abundance of sunlight (1)  
Flat gradient (1)  
Latitudinal positioning (heat) (1)  
**[ANY TWO]** (2 x 1) (2)
- 2.4.5 It is cheaper than conventional energy (2)  
Increase in employment (2)  
Skill transfer / learnership that can be integrated into other economic sectors (2)  
Farmers can rent out land to companies (2)  
Save the country on fines for excessive carbon emissions (2)  
Increase in foreign direct investment (2)  
Multiplier effect (related industries open) (2)  
Diversification of the economy (2)  
Can sell electricity to other countries (earn foreign income) (2)  
Capital injection into the economy (2)  
Money spent on operations and maintenance (2)  
Business can trade/operate with reliable energy (2)  
**[ANY TWO]** (2 x 2) (4)
- 2.4.6 Insufficient funding to set up (2)  
Less / no investment in solar plants (2)  
Lack of professional expertise to implement (2)  
Resistance from stakeholders (accept examples) causing delays (2)  
Vandalism of infrastructure which is costly (2)  
Limited capacity to upgrade / fix equipment can lead to deterioration (2)  
Climate change can adversely affect conditions (2)  
Old / dilapidated infrastructure – expensive to fix (2)  
Limited land for expansion drives up the costs (2)  
Limited land for expansion causes stagnation  
Corruption / mismanagement of funds deprives allocation of funding (2)  
Pressure from environmentalists slows down process (2)  
Inability to access modern technology to increase output (2)  
Political instability deters investors (2)  
**[ANY TWO]** (2 x 2) (4)

- 2.5 2.5.1 30% (1) (1 x 1) (1)
- 2.5.2 Too old (1)  
Inadequately maintained (1)  
Poorly designed (1)  
Not operating to capacity (1)  
**[ANY TWO]** (2 x 1) (2)
- 2.5.3 Increases operating costs (accept examples) (2)  
Decreases trading hours (2)  
Reduced productivity (2)  
Expensive to supply alternative energy (accept examples) (2)  
Loss of revenue (2)  
Decline profit margins (2)  
**[ANY ONE]** (1 x 2) (2)
- 2.5.4 Coal is a non-renewable resource (2)  
Negative impact of coal mining (2)  
Pollution from the transportation of coal (2)  
Pollutants in the ash and cinders that remain after coal is burned (2)  
Burning coal increases greenhouse gases (2)  
Gases contribute to global warming and climate change (2)  
Produces acid rain (2)  
Mining causes environmental despoliation (2)  
Poisonous chemicals leach out of mine dumps (2)  
Pollution of water (mines) (2)  
Waste of power stations destroys habitats of land and aquatic life (2)  
Removal of forests and other natural vegetation for the mining area threatens animal and plant species (2)  
Solid waste from the coal mines and coal processing plants (2)  
**[ANY TWO]** (2 x 2) (4)
- 2.5.5 Job losses in the mining industry (2)  
Decrease in employment in power plants (2)  
Increase in unemployment and poverty (2)  
Increase reliance on social grants (2)  
Decrease in money circulating in the economy (2)  
Coal production contributes significantly to SA's GDP (2)  
Coal mining towns would suffer economic decline (2)  
Reskilling and training of workers have financial implications (2)  
South Africa has a lot of coal reserves and it earns foreign exchange (2)  
It is relatively cheap to extract and cheap to generate power (2)  
Large amounts of money have been invested in coal mining and power stations (2)  
Very expensive to move from coal to greener sources of energy (2)  
Expensive to repay national debt for infrastructural investment (2)  
Communities and livelihoods tied to the coal industry is negatively impacted (2)  
Very expensive to fix the old / poorly-maintained power plants (2)  
**[ANY THREE]** (3 x 2) (6)

**[60]**

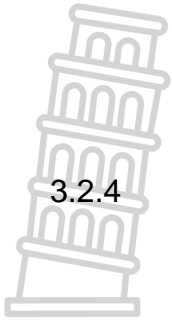
## SECTION B

## QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES

- 3.1 3.1.1 A (1) (1)
- 3.1.2 C (1) (1)
- 3.1.3 MB = MD + TB  
 $22^{\circ}14' + 72^{\circ} (1) = 94^{\circ}14' (1)$   
 (Range TB:  $71^{\circ} - 73^{\circ}$ ) (Range MB:  $93^{\circ}14' - 95^{\circ} 14'$ )  
 (2 x 1) (2)
- 3.1.4 The magnetic north changes annually (1)  
 Magnetic bearing provides the correct / accurate direction (1)  
 Desired destination will not be reached if the true bearing is used (1)  
 The hiker might get lost if the TB is used (1)  
 Moves 6' West each year (1)  
**[ANY ONE]** (1 x 1) (1)
- 3.1.5 (a)  $3,8 \text{ cm} \times 100 (1) = 380 \text{ m}$   
 $= 380 \text{ m}(1)$   
**[NO RANGE]** (2 x 1) (2)
- (b)  $VI = 1\ 170 \text{ m} - 1\ 144 \text{ m} = 26 (1) \text{ m}$   

$$\text{Gradient} = \frac{26}{380} (1)$$

$$\frac{1}{14,61}$$
  
 1 : 14,61 (1)  
**ANSWER MUST BE WRITTEN AS A RATIO.**  
**[NO RANGE]** (3 x 1) (3)
- 3.2 3.2.1 B (1) (1)
- 3.2.2 D (1) (1)
- 3.2.3 (a) Too many non-perennial rivers (2)  
 Energy of the running water is insufficient (2)  
 Droughts hinder supply of water (2)  
 No difference in elevation for water to fall from higher to lower point (2)  
**[ANY ONE]** (1 x 2) (2)




3.2.4

- (b) Agriculture (1)  
Mining (1)  
Tourism (1)  
Industries (1)  
**[Any TWO]** (2 x 1) (2)
- (a) Loss / removal of (top) soil from the ground's surface by different agents of erosion (2)  
**[CONCEPT]** (1 x 2) (2)
- (b) Loss of vegetation which helps land to retain water and top soils / provides rich nutrients to sustain environment (2)  
Depth of top soil reduced reducing the natural vegetation (2)  
Rivers / dams get silted up and disrupt the ecosystem (2)  
Increase in run-off as vegetation does not protect soil (2)  
More frequent flooding destroying habitats (2)  
Soil quality is compromised affecting the plant and food chain (2)  
Reduces water quality affecting aquatic life (2)  
Animals suffocated from fine dust that is blown (2)  
Vegetation gets washed away with soil (2)  
Alters ecosystems by reducing biodiversity (2)  
Agrochemicals and other pollutants in soil can negatively affect the water (algae) (2)  
Harmful algal blooms kill marine life by depleting oxygen in the water (2)  
River banks get altered affecting the flow of water in river (2)  
**[ANY TWO]** (2 x 2) (4)

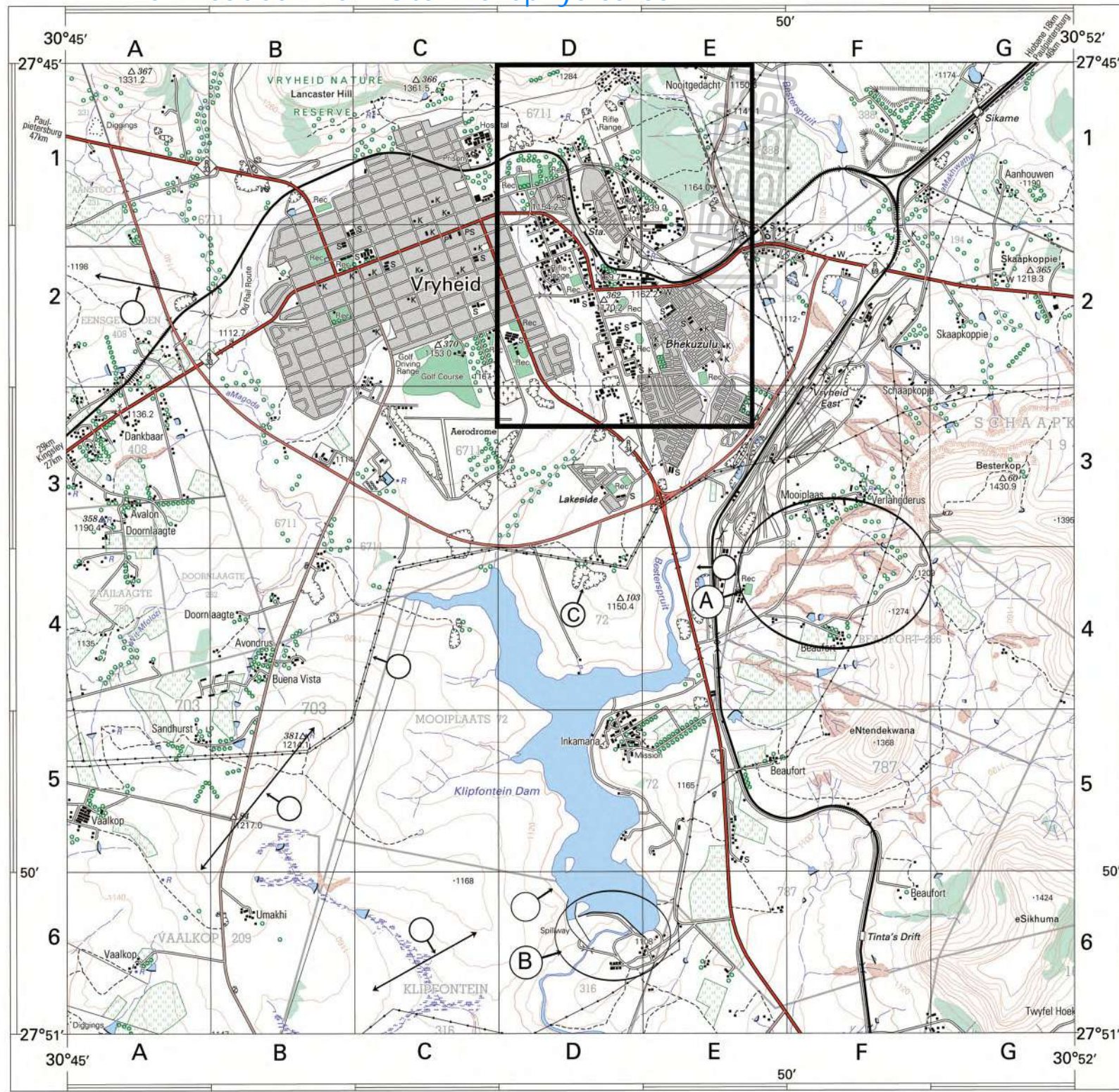
### 3.3 GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

- 3.3.1 (a) X: Vector (1)  
Y: Raster (1) (2 x 1) (2)
- (b) Taking data from different sources and combining them (2)  
Different types of data can be combined into a GIS and represented as a map (2)  
Putting together various sources of information on a specific location (2)  
Combining different types of data to create a summary of different information (2)  
Different types of information, no matter their source or original format, to be overlaid on top of one another on a single map. (2)  
**[CONCEPT]** (1 x 2) (2)

	3.3.2	Soil (1) Relief / topography (1) Drainage / hydrology (1) Geology (1) Vegetation (1) Land use (1) <b>[ANY TWO]</b>	(2 x 1)	(2)
	3.3.3	Real-time imagery is accurate and shows (2) Imagery can detect gaps in the woodlands (2) Shows change in shape (woodland getting smaller) (2) Decisions / intervention strategy can be immediate (2) <b>[ANY ONE]</b>	(1 x 2)	(2)
				<b>[30]</b>
			<b>TOTAL:</b>	<b>150</b>







Heights are in metres above mean sea level  
Hoogtes is in meter bo gemiddelde seespieël

Mean magnetic declination 23°46' West of True North (July 2001).  
Mean annual change 4' Westwards (1995-2000).

REFERENCE

National Freeway; National Route	Arterial Route	Main Road	Secondary Road; Bench Mark	Other Road; Bridge	Track and Hiking Trail	Railway; Station or Siding	Other Railway; Tunnel	Embankment; Cutting	Power Line	Built-up Area (High, Low Density)	Buildings; Ruin	Post Office; Police Station; Store	Place of Worship; School; Hotel	International Boundary and Beacon	Protected Area	Perennial River	Perennial Water	Non-perennial River	Non-Perennial Water	Dry Water Course	Dry Pan	Marsh and Vlei	Built-up Area (High, Low Density)	Pipeline (above ground)	Water Tower; Reservoir; Water Point	Coastal Rocks	Prominent Rock Outcrop	Fence; Wall	Windpump; Monument	Communication Tower	Mine Dump; Excavation	Trigonometrical Station; Marine Beacon	Lighthouse and Marine Light	Cemetery; Grave	Erosion; Sand	Woodland	Cultivated Land	Orchard or Vineyard	Recreation Ground	Row of Trees	Original Farms
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VERKLARING

Nasionale Deurpad; Nasionale Roete	Hoofverkeersroete	Sekondêre Pad; Hoogtemerk	Ander Pad; Brug	Spoorweg; Stasie of Sylyn	Ander Spoorweg; Tonnél	Opvulling; Deurgrawing	Kraglyn	Beboude Gebied (Hoë, Lae Digtheid)	Geboue; Murasie	Poskantoor; Polisie-stasie; Winkel	Plek van Aanbidding; Skool; Hotel	Internasionale Grens en Baken	Provinsiale Grens	Bewarings Gebied	Standhoudende Rivier	Nie-standhoudende Rivier	Nie-standhoudende Water	Droë Loop	Droë Pan	Moeras en Vlei	Pylyln (bo die grond)	Wateroring; Reservoir; Waterpunt	Kuslynrotse	Prominente Klipbank	Draadheining; Muur	Windpomp; Monument	Kommunikasietoring	Mynhoop; Uitgraving	Peilbaken; Seevaartbaken	Vuurtoring en Seevaartlig	Begraafplaas; Graf	Beboste Gebied	Bewerkte Land	Boord of Wingerd	Ontspanningsterrein	Rye Bome	Oorspronklike Plase
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