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Province of the EASTERN CAPE EDUCATION

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.

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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 ...

A	B	C	D
India 0,645	Norway 0,943	Canada 0,908	Germany 0,905

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

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

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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)

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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** subsides
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)

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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 perservere 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)

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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)

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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]

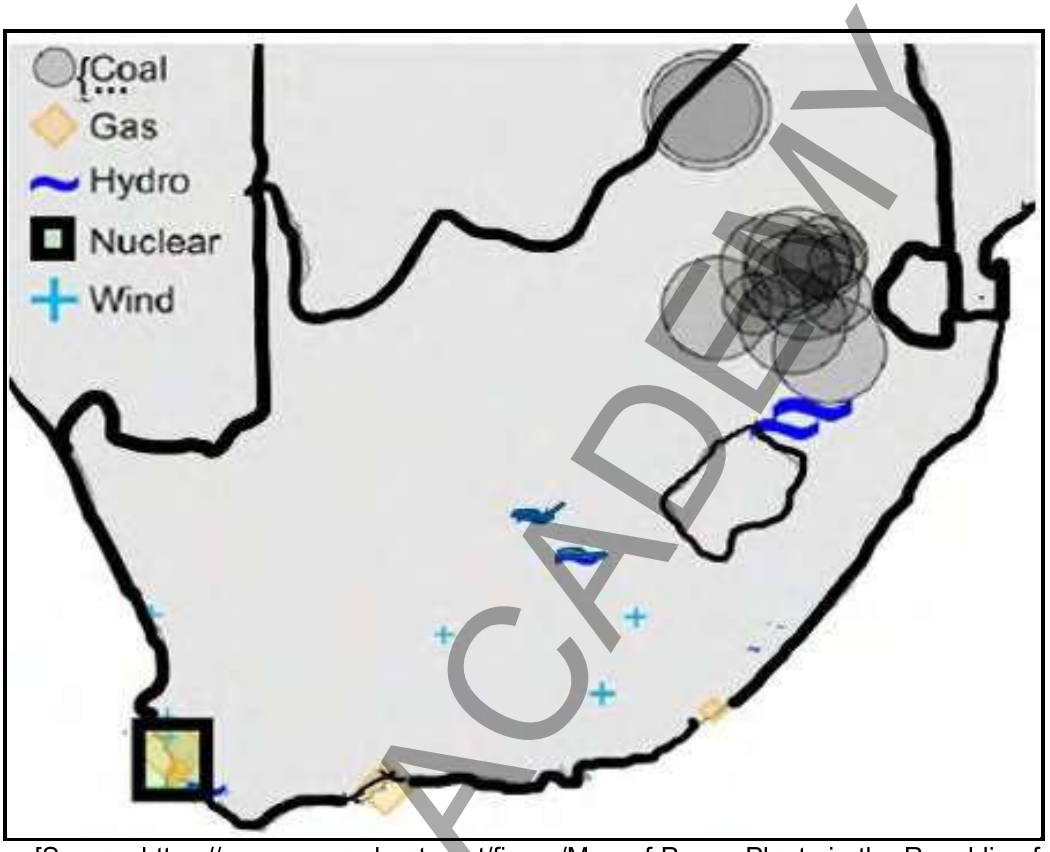
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QUESTION 2: RESOURCES AND SUSTAINABILITY

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.

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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 …

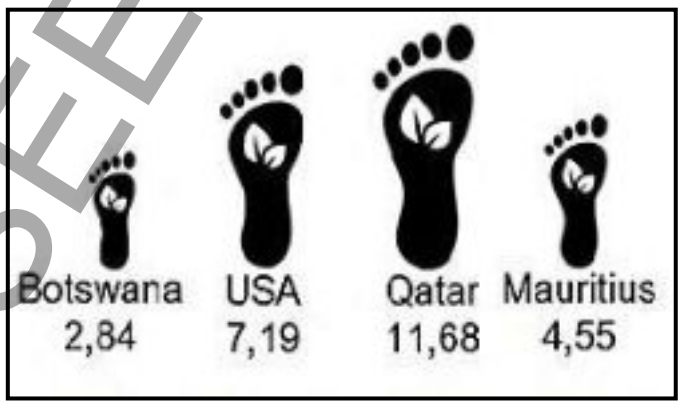
A an increased carbon footprint.
B a more sustainable lifestyle.
C increasing greenhouse gases.
D resource depletion.

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 ...



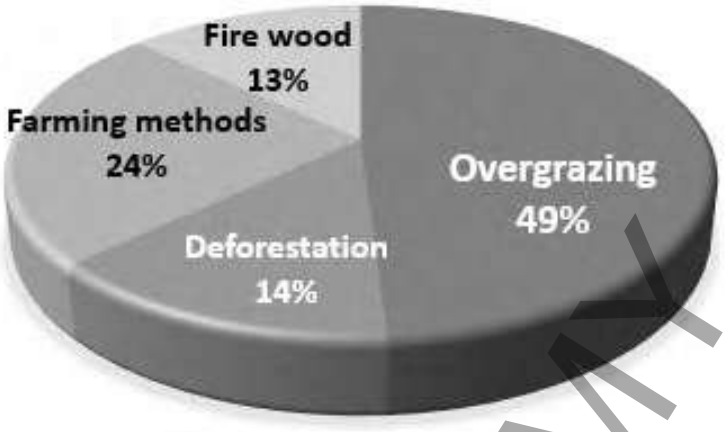
A Botswana
B USA
C Qatar
D Mauritius

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



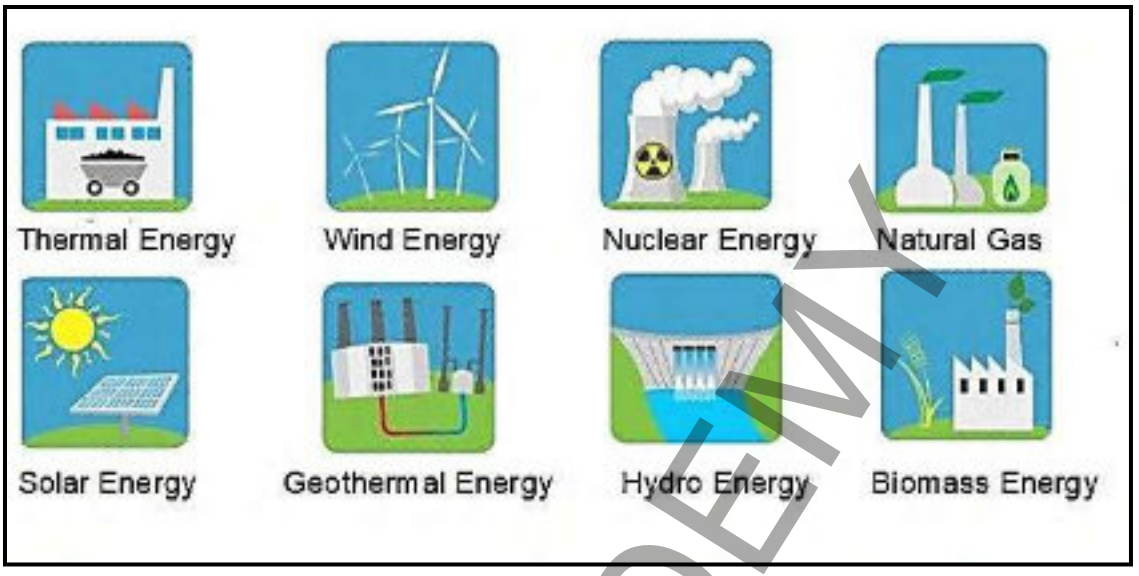
A climate change.
B industrialisation.
C agricultural activities.
D urbanisation. (7 x 1) (7)

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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)

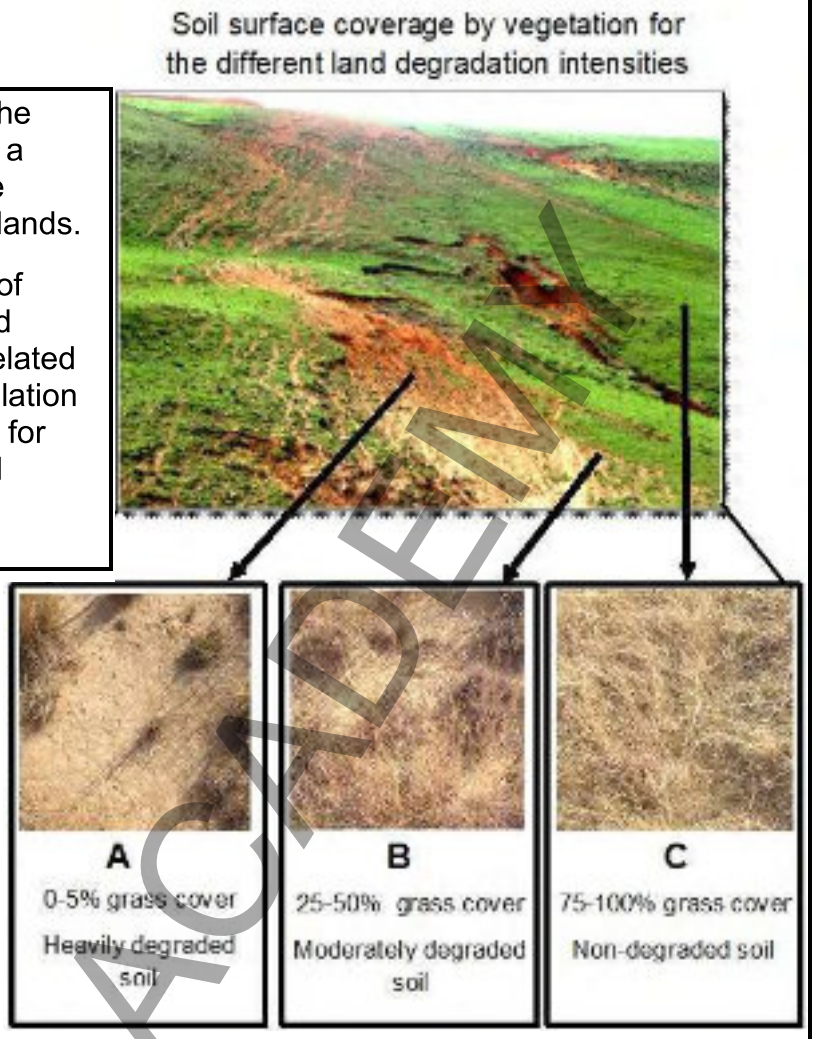
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2.3 Refer to the infographic on soil erosion in the Drakensburg uplands of South Africa.

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.



[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)

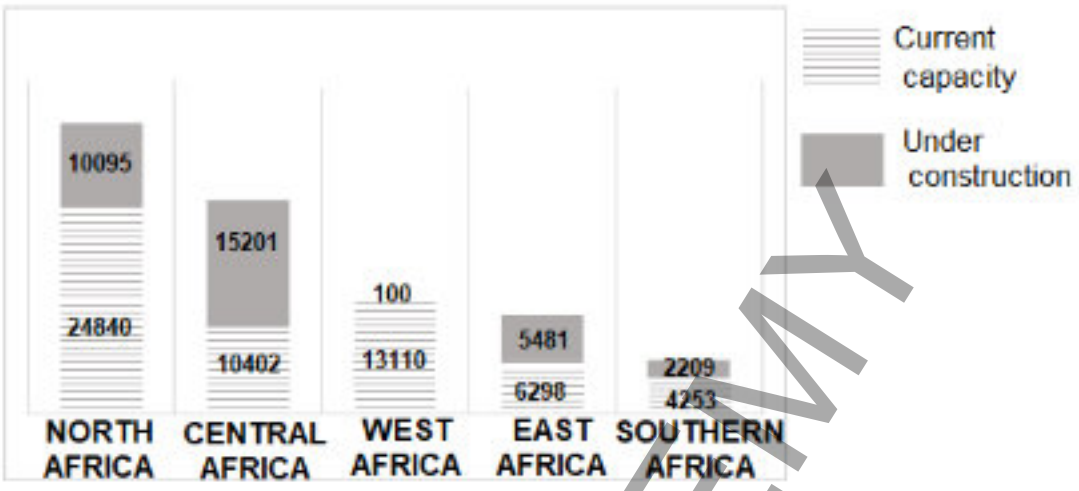
2.3.3 Why is soil erosion 'a major threat' to the livelihood of subsistence farmers who use the communal land? (2 x 1) (2)

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)

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



- Africa: the world's only region that exceeds "excellent conditions" for solar power
- Africa has 60% of the world's best solar resources but only 1% of the solar generation capacity is harnessed.
- These solar power resources give Africa a unique opportunity to provide affordable, reliable, and sustainable electricity for its economic growth.

[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)

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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]

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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	AFRIKAANS
Aerodrome	Vliegveld
Canal	Kanaal
Diggings	Uitgrawings
Furrow	Voor
Golf course	Gholfbaan
Sewerage works	Rioolwerke
Show grounds	Skougronde
Waterfall	Waterval
Weir	Studam

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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: $\textbf{Average gradient} = \frac{\textbf{Vertical interval (VI)}}{\textbf{Horizontal equivalent (HE)}}$
(3 x 1) (3)

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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 photographical 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)

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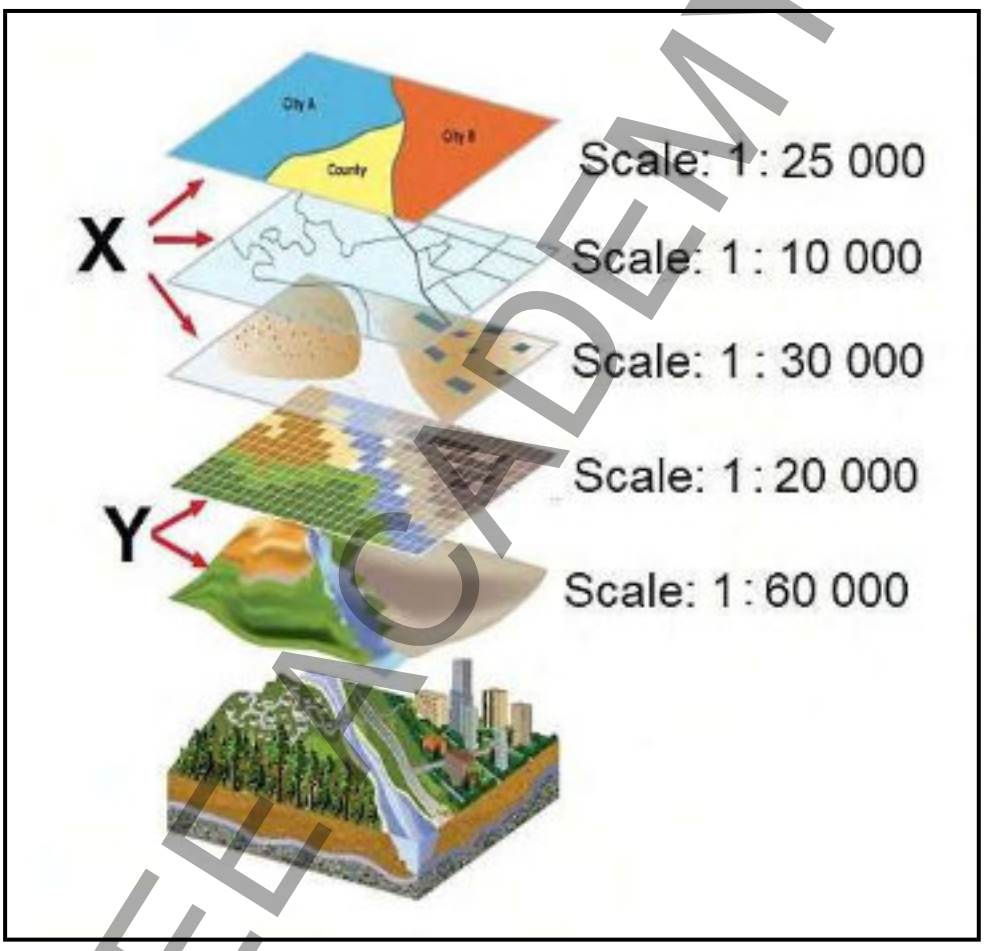
3.2.4 Refer to the area demarcated by **L** in block **E3/F3** and **E4/F4** on the **topographical map**, which shows extensive soil erosion.

(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)

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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

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