GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

PREPARATORY EXAMINATION

2023

10782

GEOGRAPHY

(PAPER 2)

TIME: 3 hours

MARKS: 150

17 pages

GEOGRAPHY: Paper 2

10782E

Stanmorephysics

X05

INSTRUCTIONS AND INFORMATION

1. This question paper consists of TWO SECTIONS.

   SECTION A:
   QUESTION 1: RURAL AND URBAN SETTLEMENTS (60 MARKS)
   QUESTION 2: ECONOMIC GEOGRAPHY OF SOUTH AFRICA (60 MARKS)

   SECTION B:
   QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES (30 MARKS)

2. Answer ALL THREE questions.
3. All diagrams are included in the QUESTION PAPER.
4. Leave a line between sub-sections of questions answered.
5. Start EACH question at the top of a NEW page.
6. Number the answers 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 the final answer, e.g. 1 020 hPa, 10 km, 4 °C and 45 m.
11. You may use a non-programmable calculator.
12. You may use a magnifying glass.
13. Write neatly and legibly.

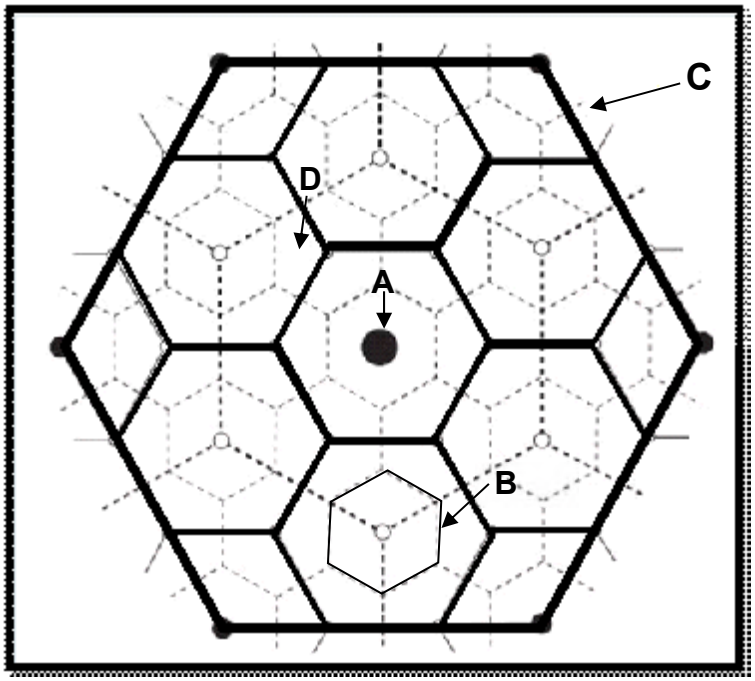
SPECIFIC INSTRUCTIONS AND INFORMATION FOR SECTION B

14. A 1 : 50 000 topographic map 2726 BC BOTHAVILLE and a 1 : 10 000 orthophoto map 2726 BC 13 BOTHAVILLE are provided.
15. The area demarcated in RED/BLACK on the topographic map represents the area covered by the orthophoto map.
16. Show ALL calculations where applicable. Marks will be allocated for steps in calculations.
17. You must hand in the topographic and orthophoto maps to the invigilator at the end of this examination session.

SECTION A: RURAL AND URBAN SETTLEMENTS AND THE ECONOMIC GEOGRAPHY OF SOUTH AFRICA

QUESTION 1: RURAL AND URBAN SETTLEMENTS

1.1 Refer to the following diagram that represents the hierarchy of urban places. Various options are provided as possible answers to the following questions. Choose the correct answer and write only the letter (A – D) next to the question numbers (1.1.1 to 1.1.8) in the ANSWER BOOK, e.g. 1.1.9 D



[Source: Classical Place Theory (geography.name)]

1.1.1 The diagram above represents the … model/theory.

A concentric circle
B multiple nuclei
C Harris and Ullman
D central place

1.1.2 The geographer who designed the theory mentioned in QUESTION 1.1.1 is known as …

A Walter Christaller.
B Marvin Harris.
C Harold A. Ullman.
D David Anderson.

1.1.3 According to the hierarchy of settlements, **A** on the diagram represents a …

A town.
B city.
C hamlet.
D village.

1.1.4 Line **B** on the diagram represents the boundary of a … trading area.

A hamlet
B village
C town
D city

1.1.5 Settlement … will have a … and a large range.

(i) A
(ii) D
(iii) large sphere of influence
(iv) small sphere of influence

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

1.1.6 The settlement type at **A** on the diagram is a … town.

A specialised
B break-of-bulk
C central place
D trade and transport

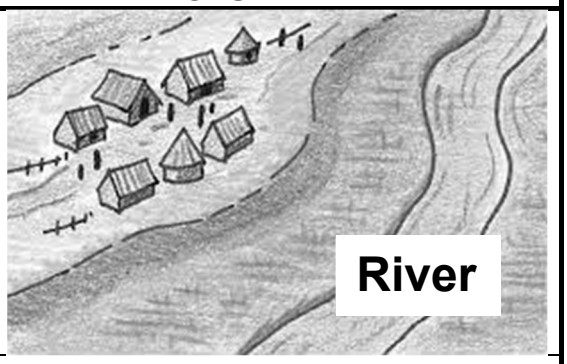
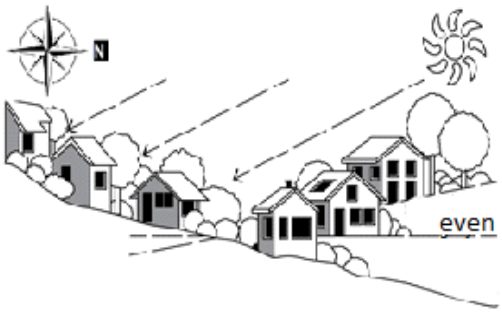
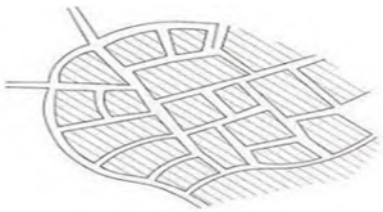
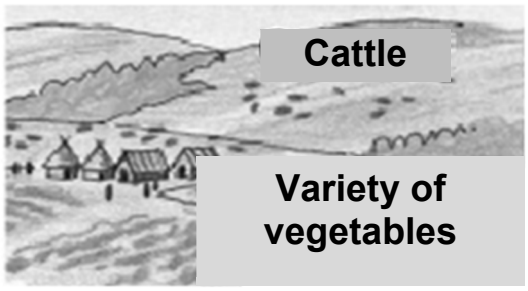
1.1.7 Which of the following services is a high-order service with the largest range?

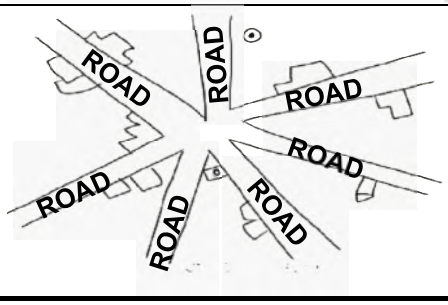
A Carwash
B Ferrari dealership
C Bakery
D Exclusive jewellery shop

1.1.8 The … is needed for a business to survive.

A range per goods
B multiplier effect
C threshold population
D sphere of influence (8 x 1) (8)

1.2 Choose a picture from COLUMN B that matches the description in COLUMN A. Write only the letter (A – H) next to the question numbers (1.2.1 to 1.2.7) in the ANSWER BOOK, e.g. 1.2.8 I.

COLUMN A		COLUMN B	
1.2.1	A settlement where several roads meet	A	
1.2.2	Settlements that developed because of a dry point	B	
1.2.3	Subsistence farming occurs at these settlements	C	
1.2.4	These settlements develop along a man-made feature	D	
1.2.5	A settlement that can be used as a defensive site	E	

1.2.6	Settlements next to a river that need access to each other	F	
1.2.7	A settlement in the Northern Hemisphere	G	
		H	

[Source: http://www.geog.biz/wp-content/uploads/2019/11/WW-settlement-Year-10.pdf]

(7 x 1) (7)

1.3 Study the cartoon below which is based on rural-urban migration.



[Adapted from https://slideplayer.com/slide/9402187/]

1.3.1 Define the term *rural-urban migration*. (1 x 2) (2)

1.3.2 Give ONE push factor that is visible in the cartoon. (1 x 1) (1)

1.3.3 Account for the impact that the push factor mentioned in QUESTION 1.3.2 will have on rural areas. (1 x 2) (2)

1.3.4 Predict the social impact of rural-urban migration on the urban areas. (2 x 2) (4)

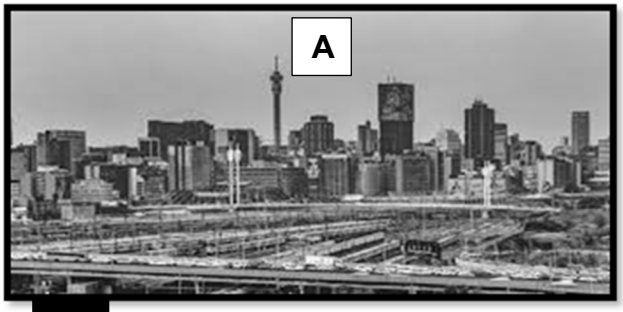
1.3.5 Suggest THREE strategies the government can implement to encourage people to stay in the rural areas. (3 x 2) (6)

1.4 Refer to the infographic below to answer the following questions.

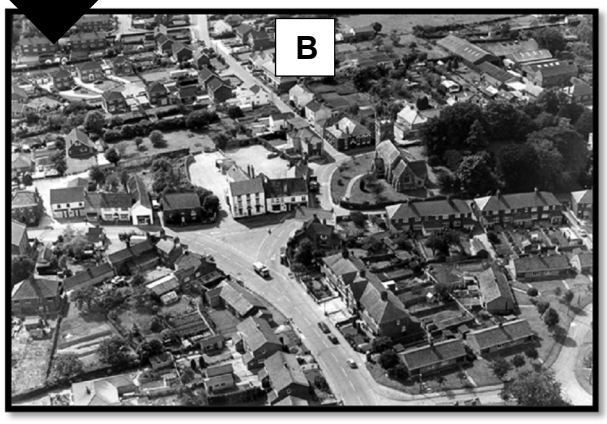
Office Space: Major trend to decentralisation

"I thus expect decentralised nodes to continue to be the more popular location option. That's not to say that CBDs don't have an important place, especially in terms of their potential for high-density affordable residential accommodation, but I believe the more decentralised urban business model is here to stay."

[Source: https://www.property360.co.za/news/office-space-major-trend-to-decentralisation]

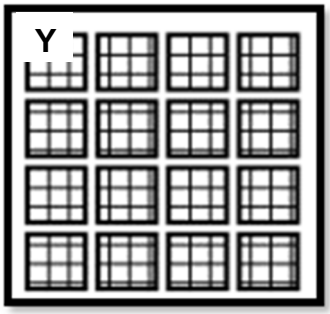


The movement of businesses into residential areas



STREET PATTERNS





[Source: https://www.google.com/maps/search/menlyn+maine/ @25.7834326, 28.2752555,1534m/data=!3m2!1e3!4b1https://earth.google.com/web/search/pretoria/@-lvTPAGcMg_tAj30BAIUcInLF3z1DA]

1.4.1 Identify the land-use zone indicated as **A** in the infographic. (1 x 1) (1)

1.4.2 Quote from the infographic the importance of the land-use zone identified as **A**. (1 x 1) (1)

1.4.3 State ONE characteristic of the land-use zone **A** that is evident in the infographic. (1 x 1) (1)

1.4.4 (a) Which street pattern, **X** or **Y**, is usually associated with the land-use zone at **A**? (1 x 1) (1)

(b) Give a reason for your answer to QUESTION 1.4.4 (a). (1 x 2) (2)

1.4.5 Give a term used for the movement of businesses away from land-use zone **A** towards the suburbs. (1 x 1) (1)

1.4.6 People and businesses are often forced to move out of land-use zone **A**. In a paragraph of approximately EIGHT lines, discuss factors that cause businesses to move away from land-use zone **A**. (4 x 2) (8)

1.5 Refer to the case study below on how Johannesburg plans to upgrade informal settlements.

JOHANNESBURG PLANS TO UPGRADE INFORMAL SETTLEMENTS

17 August 2022 – 07:00

A three-phase developmental approach will ease housing backlog, says Johannesburg's MMC.

Human settlements MMC for Johannesburg, Mlungisi Mabaso, believes that upgrading informal settlements and redeveloping hostels will help solve the city's housing problems. Mabaso told Times LIVE that the city had a backlog of 480 000 people on the housing waiting list, but they had identified even more people in need of housing.

"Our estimate is above half a million, with those in the informal settlements and hostels who have not yet applied," he said.

He said the department has recognised 318 informal settlements in the city but there were other settlements that are yet to be recognised.

There are 36 000 approved subsidies for 1996 that have not yet been allocated and 15 000 applicants of 1997 not yet allocated. "Once you have addressed that, you have done justice." Mlungisi Mabaso, MMC for human settlements said. "In the end, we want to recognise all of them."

The city plans to upgrade the informal settlements in three phases, with 10 already in the third phase.

[Adapted from https://www.timeslive.co.za/news/south-africa/2022-08-17-heres-how-johannesburg-plans-to-upgrade-informal-settlements/]

1.5.1 What is *an informal settlement*? (1 x 2) (2)

1.5.2 According to the article, how many people are on the housing waiting list? (1 x 1) (1)

1.5.3 Quote evidence from the article to prove that many people in Johannesburg are currently staying in informal settlements. (1 x 1) (1)

1.5.4 Explain TWO possible reasons why so many people are currently staying in informal settlements around the Johannesburg area. (2 x 2) (4)

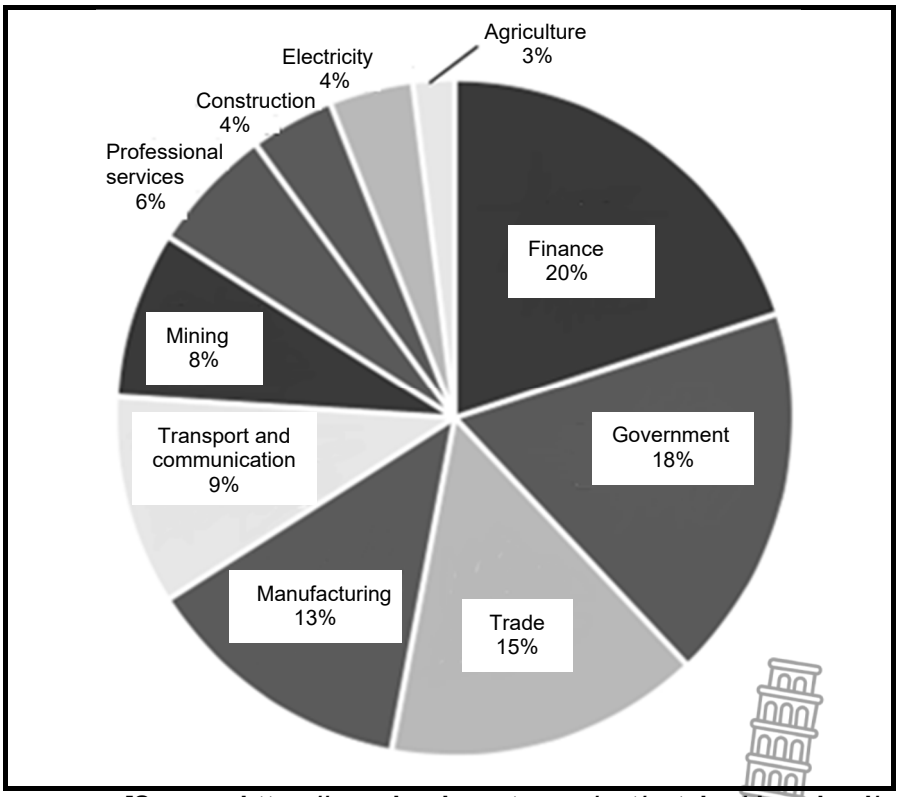
1.5.5 Mention ONE social issue that is associated with informal settlements. (1 x 1) (1)

1.5.6 Recommend THREE strategies that the Johannesburg municipality can use to upgrade informal settlements to solve the housing problems in Johannesburg. (3 x 2) (6)

[60]

QUESTION 2: ECONOMIC GEOGRAPHY OF SOUTH AFRICA

2.1 Refer to the pie graph below which shows the contribution of the economic sectors to the GDP. Choose the correct word(s) in brackets to make the sentences TRUE. Write only the word(s) next to the question numbers (2.1.1 to 2.1.8) e.g. 2.1.9 Services.



[Source: https://openbooks.uct.ac.za/uct/catalog/download/29/52/1578?inline=1]

2.1.1 The contribution of finance is 20% of the (quaternary/tertiary) sector.

2.1.2 The primary sector's contribution is (3%/11%).

2.1.3 Construction contributes 4% to the (primary/secondary) sector.

2.1.4 The (secondary/tertiary) sector contributes the most to the GDP.

2.1.5 The (tertiary/quaternary) sector's contribution is excluded in the pie graph above.

2.1.6 The (primary/secondary) sector contributes the least to the GDP.

2.1.7 Government contributes to the (tertiary/quaternary) sector.

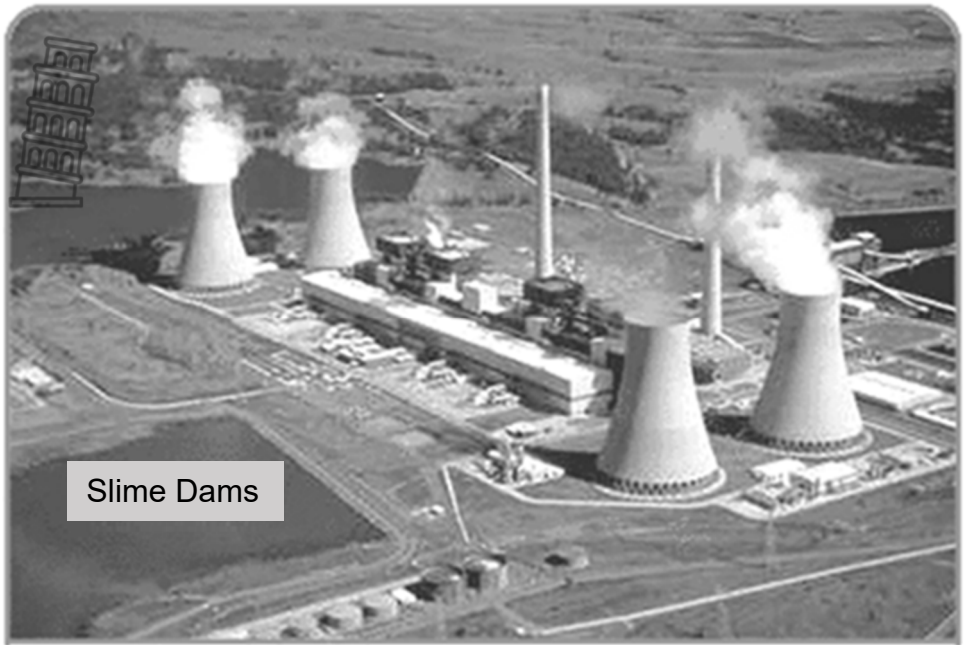
2.1.8 (GDP/GNP) is the total value of all goods and services produced inside and outside the country. (8 x 1) (8)

2.2 Choose a term from COLUMN B that matches the description in COLUMN A. Write only Y or Z next to the question numbers (2.2.1 to 2.2.7) in the ANSWER BOOK, for example 2.2.8 Z.

COLUMN A		COLUMN B	
2.2.1	Industries located everywhere as products are mostly perishable	**Y** **Z**	Ubiquitous industries Footloose industries
2.2.2	An industry producing bread located close to the market	**Y** **Z**	Heavy industry Market-orientated industry
2.2.3	The industry which is located between the raw material and the market	**Y** **Z**	Bridge industry Raw material orientated industry
2.2.4	Industries producing small amounts of material	**Y** **Z**	Light industries Bridge industries
2.2.5	Industries produced super light products that can be shipped anywhere and are located anywhere	**Y** **Z**	Ubiquitous industries Footloose industries
2.2.6	Industries located close to the primary source	**Y** **Z**	Raw material orientated industries Light industries
2.2.7	An industry located on the outskirts of an urban area	**Y** **Z**	Bridge industry Heavy industry

(1 x 7) (7)

2.3 The following photo shows a power plant.



[Source: https://s-cool.co.uk/gcse/geography/industry/revise-it/the-location-of-industry]

2.3.1 Define the term *heavy industry*. (1 x 2) (2)

2.3.2 Refer to the photo and indicate TWO visible factors that favour the location of this heavy industry. (2 x 1) (2)

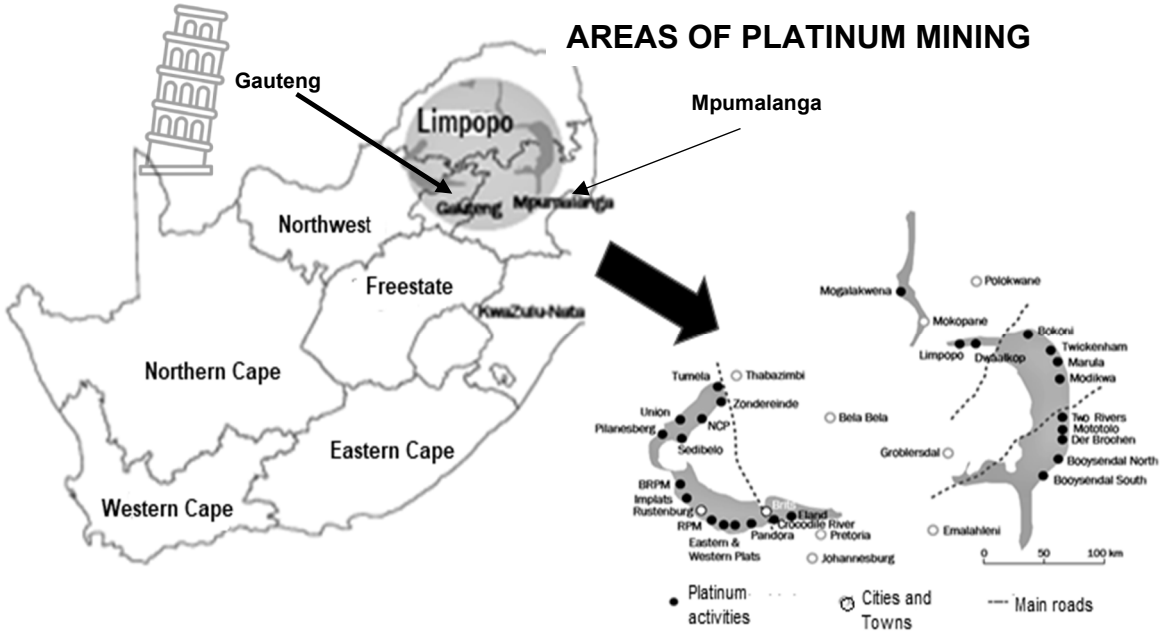
2.3.3 Transport is one of the factors favouring industrial development in South Africa. Explain why this is perceived as such. (1 x 2) (2)

2.3.4 (a) Identify the main environmental challenge associated with the heavy industry from the photo above. (1 x 1) (1)

(b) Why is the challenge identified in QUESTION 2.3.4 (a) regarded (seen) as an environmental challenge? (1 x 2) (2)

(c) Suggest strategies that industries can implement to reduce the effect of the environmental challenge mentioned in QUESTION 2.3.4 (a). (3 x 2) (6)

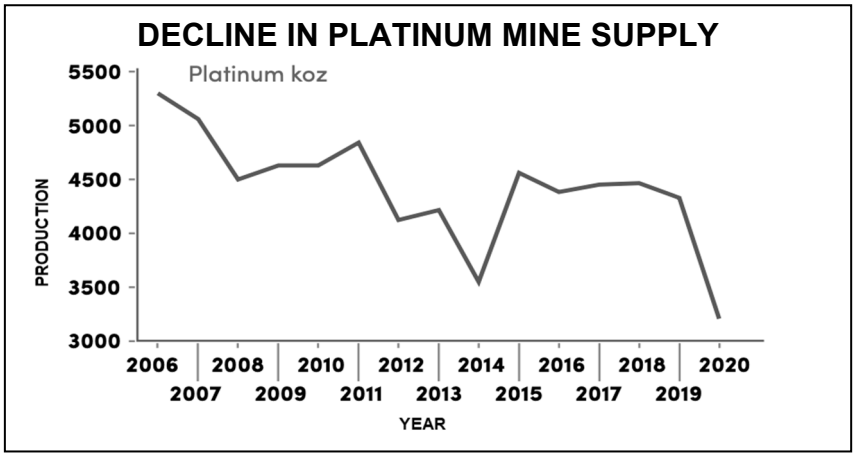
2.4 Refer to the infographic below on platinum mining.



[Source: https://www. mineralscouncil.org.za/sa-mining/platinum]

PLATINUM MINING IN SOUTH AFRICA

In South Africa, the discovery of the first platinum nuggets dates back to 1924. The geologist Hans Merensky's work resulted in the discovery of two deposits, which became known as the Bushveld Igneous Complex



[Source: https://auctusmetals.com/south-african-platinum-mine-supply-in-decline-as-demand-gains-significant-traction/]

Since World War 2, platinum mine production has grown continuously in response to new applications being developed for the metal. A significant new use of platinum was in the petroleum industry where platinum catalysts were introduced to increase the octane rating of petroleum and to manufacture important primary feedstocks for the growing plastic industry. This was followed in the 1960s by a growing demand for platinum jewellery – given its purity, colour, prestige and value.

[Adapted from https://auctusmetals.com/south-african-platinum-mine-supply-in-decline-as-demand-gains-significant-traction/]

2.4.1 Identify the THREE provinces, from the infographic, where platinum is mined. (3 x 1) (3)

2.4.2 Provide evidence from the infographic for the location of platinum mines in the provinces identified in QUESTION 2.4.1. (1 x 2) (2)

2.4.3 Identify TWO uses of platinum from the infographic. (2 x 1) (2)

2.4.4 In a paragraph of approximately EIGHT lines, suggest possible reasons for a decline in the production of platinum as shown in the infographic. (4 x 2) (8)

2.5 Read the following article on the Coega IDZ.

COEGA IS MAKING SIGNIFICANT PROGRESS TO IMPROVE THE EASTERN CAPE ECONOMY

The Coega IDZ (CIDZ) positively contributes to the Eastern Cape (EC) economy and spells signs of continued growth and improvement. The CIDZ performance during the 2017/18 financial year resulted in a contribution of approximately R3,9 billion to the Eastern Cape GDP. Latest results show contribution to economic income: R1,6 billion in national taxes; R1,38 billion in balance of payments; and R2,2 billion impact on households," says Dr. Ayanda Vilakazi, CIDZ unit head for marketing, brand and communications.

"According to the independent Muffin Report, which examined the impact of the Coega IDZ on local markets, production chains, exports, employment and wages, most of the 45 operational investors in the IDZ and Nelson Mandela Bay Logistics Park, created more than 100 full-time jobs on average and 69% of investors reported that their workforce increased over the last five years. 86% of investors revealed plans to expand their businesses in the near future, while some of them are either on their second or third expansion, such as Coega Dairy," says Dr. Vilakazi.

[Adapted from https://www.coega.co.za/NewsArticle.aspx?objID=105&id=744]

2.5.1 Define the term *Industrial Development Zone*. (1 x 2) (2)

2.5.2 In which province is the Coega IDZ located? (1 x 1) (1)

2.5.3 (a) What is meant by *the balance of payment*? (1 x 2) (2)

(b) Explain how the Coega IDZ contributed R1,38 billion to the balance of payment. (1 x 2) (2)

2.5.4 Evaluate the economic impact of the Coega IDZ on the local market. (2 x 2) (4)

2.5.5 Suggest strategies with which national government can motivate potential investors to invest in the Coega IDZ. (2 x 2) (4)

[60]

TOTAL SECTION A: 120

SECTION B

QUESTION 3: GEOGRAPHICAL SKILLS AND TECHNIQUES

BACKGROUND INFORMATION ON BOTHAVILLE



Coordinates: 27º37'40"S, 26º62'00"E

Situated in the north-western parts of the Free State Province, at the confluence of the Vals and Vaal Rivers, the town of Bothaville is considered to be one of the richest agricultural districts in the country. It forms a key pillar in the so-called maize triangle as the heartland of South Africa's maize producing region. The district of Bothaville is also a major producer of other grain such as sunflower seeds, sorghum, peanuts, etc., and this serves as the major reason why Bothaville has become a bustling rural town, with a lively business sector. The head office of Grain SA is found in Bothaville, and the town is officially known as the Maize Capital of South Africa.

[Source: https://web.archive.org/web/20100516143452/http://www.bothavillemaizecapital.co.za/]

The following English terms and their Afrikaans translations are shown on the topographic map.

ENGLISH	AFRIKAANS
Water purification plant	Water suiweringsaanleg
Sewage works	Rioolwerke
Weir	Keerwal
Golf course	Gholfbaan
Landing strip	Landingstrook

3.1 MAP SKILLS AND CALCULATIONS

Refer to the topographic map.

3.1.1 The land-use found at the following coordinates, 27°22'10''S and 26°36'30''E is …

A cultivated lands.
B ruins.
C a cemetery.
D powerlines. (1 x 1) (1)

3.1.2 The sewerage works in block **D2** is situated … from the excavations in block **C4**.

A north-east
B south-west
C south-east
D north-west (1 x 1) (1)

Refer to the Hendrik Potgieter landing strip at **F** in blocks **B3 – 4** and **C3** on the topographic map. An aeroplane/aircraft comes in to land on the landing strip from a north-easterly direction.

3.1.3 Determine the true bearing that the pilot must use when approaching the landing strip. (1 x 1) (1)

3.1.4 The control room needs to communicate the landing process and therefore needs to make use of the magnetic declination to determine the correct magnetic bearing for the pilot to use. Calculate the current (2023) magnetic declination for the map. (5 x 1) (5)

3.1.5 Use your answers to QUESTION 3.1.3 and QUESTION 3.1.4 and determine the magnetic bearing used by pilots for this landing process. (2 x 1) (2)

3.2 MAP INTERPRETATION

Refer to the topographic map.

3.2.1 Compare the street patterns at **G** of Bothaville in blocks **D2** and **D3** with the street patterns of Khotsong at **H** in blocks **B4** and **B5**. Redraw the following table in your ANSWER BOOK and complete the table. (4 x 1) (4)

	G	H
Street pattern		
Possible reason for the pattern		

3.2.2 Bothaville can be considered a (central place/specialised) town. (1 x 1) (1)

3.2.3 Motivate your answer to QUESTION 3.2.2. (1 x 1) (1)

Refer to the orthophoto map.

3.2.4 Silos are located at **I** in block **B2**.
Would you classify a silo as a *primary* or a *secondary* activity? (1 x 1) (1)

3.2.5 Give a reason for your answer to QUESTION 3.2.4. (1 x 2) (2)

Refer to the topographic map.

3.2.6 List TWO factors, evident from the topographic map, which favour the planting of maize in the Bothaville region. (2 x 1) (2)

3.2.7 Name ONE hindering factor in block **B3** that would prevent the expansion/growth of the maize plantation on the Enkelboom farm in a south-easterly direction. (1 x 1) (1)

3.3 GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

Refer to the orthophoto map.

3.3.1 The orthophoto is an example of (vector/raster) data. (1 x 1) (1)

3.3.2 Explain how the data chosen in QUESTION 3.3.1 has been obtained. (1 x 2) (2)

3.3.3 Identify the line symbol indicated as **J** in block **D2.** (1 x 1) (1)

3.3.4 Define the term *spectral resolution*. (1 x 2) (2)

3.3.5 Comment on the spectral resolution of the orthophoto map. (1 x 2) (2)

TOTAL SECTION B: 30

TOTAL: 150

END