GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

GAUTENG DEPARTMENT OF EDUCATION

PREPARATORY EXAMINATION

2020

MARKING GUIDELINE

10781

GEOGRAPHY

PAPER 1

30 pages

INFORMATION BEFORE COMMENCEMENT OF MARKING FOR INTERNAL AND EXTERNAL MODERATION PURPOSES

1. Use a single tick for the allocation of ONE (1) mark. ✓

2. Use TWO ticks for the allocation of TWO (2) marks. ✓✓

3. Ticks MUST be placed, on/on top of/at the end of the correct response, in the sentence.

4. A cross (X) MUST be placed at the end of each incorrect/invalid sentence or response.

5. All paragraph questions must include the use of the symbol:

   M … when a candidate has achieved 8 marks.

   (DO NOT allocate marks to candidates where paragraphs are not completed in full sentences.)

   (DO NOT allocate marks where vague responses are given that do not include an appropriate link to the responses in the marking guidelines.)

6. Each sub-section MUST have a total reflected in the right hand margin e.g. 1.1 should be a total out of (7) and 1.2 should be a total out of (8) and 1.3 should be a total out of (14 / 16) ...

7. The sub-total for each sub-section must be CORRECTLY added to give you a TOTAL for the question, which must be written in the middle of the page at the beginning of the answered question.

8. The totals for each completed question MUST be written on the FRONT page with a TOTAL out of 225.

9. Marking MUST be completed in RED ink.

10. First level moderation (HOD/Senior Teacher) MUST be completed in BLACK ink.

11. Second level moderation (Cluster/District) MUST be completed in GREEN ink.

12. You are encouraged to engage with the marking guideline and ADD appropriate (valid) responses that may have been omitted during its compilation. For moderation purposes you are required to write these additions on your marking guidelines in RED and include the amended marking guidelines as part of an educator portfolio of evidence for external moderation purposes.

SECTION A: CLIMATE, WEATHER AND GEOMORPHOLOGY

QUESTION 1

1.1 Refer to FIGURE 1.1, showing a cross section of a tropical cyclone. Choose the correct word(s) from those given in brackets to make the statements TRUE. Write only the word(s) next to the question numbers (1.1.1 to 1.1.7) in the ANSWER BOOK, for example 1.1.8 Rising air.

1.1.1 ***low pressure (1)***

1.1.2 ***above (1)***

1.1.3 ***northern (1)***

1.1.4 ***east to west (1)***

1.1.5 ***cumulonimbus (1)***

1.1.6 ***subsidence (1)***

1.1.7 ***mature (1)*** **(7 x 1)** **(7)**

1.2 The following descriptions indicate factors which influence the development of specific drainage patterns. Indicate which drainage pattern refers to each of the following descriptions. Write only the question numbers (1.2.1 to 1.2.8) and the answer in your ANSWER BOOK.

1.2.1 ***Trellis pattern (1)***

1.2.2 ***Centripetal pattern (1)***

1.2.3 ***Trellis pattern (1)***

1.2.4 ***Dendritic pattern (1)***

1.2.5 ***Radial/Centrifugal pattern (1)***

1.2.6 ***Parallel pattern (1)***

1.2.7 ***Rectangular pattern (1)***

1.2.8 ***Deranged (1)*** **(8 x 1)** **(8)**

1.3 FIGURE 1.3 shows the location of anti-cyclones over South Africa.

1.3.1 Identify the anti-cyclone systems labelled **A** and **B** on FIGURE 1.3.

A – South Atlantic/Anti-cyclone (1)
B – South Indian/Anti-cyclone (1) **(2 x 1) (2)**

1.3.2 Describe the change in location of these anti-cyclonic systems from summer to winter.

They move northwards in winter (2)
Northwards/Towards the north in winter (2)
[ANY ONE] **(1 x 2) (2)**

1.3.3 Explain the impact that the position of anti-cyclonic system **A** will have on rainfall over the Western Cape in winter.

The northerly location of system A will allow cold fronts to pass over South Africa (2)
The cold front will cause the upliftment of warm moist air (2)
Upliftment results in cooling of air, condensation and increase in cloud cover (2)
Increase in cloud cover results in an increase in rainfall (2)
Increase in rainfall as mid-latitude cyclones pass over the country (2)
[ANY TWO] **(2 x 2) (4)**

1.3.4 Evaluate the positive and negative impact that rainfall conditions during winter will have on eco-tourism in the Western Cape region.

<u>POSITIVE</u>
Increased water available for outdoor hydro activities (2)
Increased water sustains a variety of unique flora and fauna systems during winter (2)
Regular winter rainfall contributes to the aesthetic beauty of the region (2)
Increased water supply results in more farming and lower food prices (Can explain examples)

<u>NEGATIVE</u>
Winter rainfall can cause floods that will limit eco-tourism (2)
Winter rainfall can contribute to health issues (2) like water borne diseases and viruses (2)
Adverse weather conditions (temperature, wind) will reduce outdoor hydro activities (2)
It will cause unpleasant weather conditions that will limit outdoor activities (2)
(Can explain examples)
[ANY THREE. Must refer to POSITIVE and NEGATIVE impact.]
(3 x 2) (6)

1.4 Refer to FIGURE 1.4 showing temperature differences between a rural and urban area.

1.4.1 Define the term *urban heat island*.

An urban area that is significantly warmer than the surrounding rural area [CONCEPT] (1) **(1 x 1) (1)**

1.4.2 Identify a structural (building) characteristic of the urban area that will influence the development of an urban heat island.

High building density (1)
Large built-up area (1)
Height of buildings (1)
Large flat areas of rooftops and side surfaces of buildings (1)
Buildings constructed of artificial materials (1)
[ANY ONE] **(1 x 1) (1)**

1.4.3 Differentiate between the heat absorption in the city and the rural area.

The heat absorption and retention is greater in the urban area than the rural area (2)
The heat absorption and retention is less in the rural area than the urban area (2)
(Any ONE) **(1 x 2) (2)**

1.4.4 Explain how the structural (building) characteristic mentioned in QUESTION 1.4.2 results in the difference in heat absorption and retention between rural and urban areas.

Urban areas constructed of artificial materials absorb more heat (2)
Artificial materials retain heat for longer (2)
Rural areas have natural materials that absorb less heat (2)
Natural materials do not retain heat for long (2)
[ANY TWO] **(2 x 2) (4)**

1.4.5 In a paragraph of approximately EIGHT lines, discuss how heat absorption in the city impacts negatively on the health of its inhabitants (people living in the city) and give sustainable solutions to these negative impacts.

<u>INCREASED HEAT CAN CAUSE HEALTH ISSUES LIKE:</u>
Inhabitants experience discomfort/lower quality of life due to constantly higher temperatures (2)
Respiratory difficulties because of increased temperatures and pollution (2)
Heat cramps caused by dehydration (2)
Heat exhaustion due to dehydration (2)
Heat stroke caused by excessively high temperatures (2)
Heat stress may result in heart ailments which could result in death (2)

<u>HEAT CAN BE REDUCED THROUGH:</u>
Use of eco-friendly/natural (green) materials in construction (Can give examples) (2)
Planting trees and other vegetation to absorb heat (2)
Install green roofs/roof gardens to absorb heat (2)
Use of energy efficient lighting and appliances (2)
Alternate/Green energy replacement for fossil fuels (2)
[MUST REFER TO IMPACT ON HEALTH AND SUSTAINABLE SOLUTIONS] **(4 x 2) (8)**

1.5 FIGURE 1.5 is an illustration of a fluvial feature.

1.5.1 In which stage of a river do rapids mainly occur?

Upper course (1) **(1 x 1) (1)**

1.5.2 Name the dominant type of erosion that occurs at this stage of a river, identified in QUESTION 1.5.1.

Downward/vertical erosion (1) **(1 x 1) (1)**

1.5.3 Explain the effect that the type of erosion you have identified in QUESTION 1.5.2, will have on the shape of the river valley.

Results in a v-shaped valley (2)
Results in a steep-sided valley (2)
[Any ONE] **(1 x 2) (2)**

1.5.4 Why is a rapid described as a temporary base level of erosion?

Rapids temporarily prevent the river from eroding deeper (2)
The river will completely erode the rapid over time (2)
[ANY ONE] **(1 x 2) (2)**

1.5.5 Describe what would happen to the temporary base level if the rate of erosion continues.

The fluvial feature/rapids would disappear (2)
The profile would have a concave shape (2)
The river would become graded (2)
[ANY ONE] **(1 x 2)** **(2)**

1.5.6 In a paragraph of approximately EIGHT lines, suggest ways in which rapids can be exploited for economic gain.

Develop the area to cater for outdoor activities like white-water rafting which will generate income for local inhabitants (2)
Eco-tourism will generate revenue for the local area (2)
Local inhabitants can be trained as guides to increase income (2)
Preserve the area for eco-tourism which will result in jobs created in the tourism/leisure sector (2)
Employment increases the local spending (2)
More foreign investment in area due to tourism potential (2)
[ANY FOUR] **(4 x 2)** **(8)**

1.6 FIGURE 1.6 shows the process of river capture over a long period of time.

1.6.1 Define the term *river capture.*

A process where a more energetic river captures/intercepts the headwaters of another river [CONCEPT] (1) **(1 x 1)** **(1)**

1.6.2 Indicate which river illustrated in FIGURE 1.6 is the captor and captured stream respectively.

Captor: Colorado river (1)
Captured : Dawson river (1) **(2 x 1)** **(2)**

1.6.3 (a) Name the type of erosion that lengthened the captor stream.

Headward erosion (1) **(1 x 1)** **(1)**

(b) Describe how the erosion mentioned in QUESTION 1.6.3(a) lengthened the captor stream.

This type of erosion causes the river channel to become longer because erosion occurs towards the source of the river (2) **(1 x 2)** **(2)**

1.6.4 Explain the impact of river capture on the volume of water in the Dawson River.

The water in the Dawson River would be diverted to the Colorado River (2)
This causes a decrease in the volume of water in the Dawson River (2) **(2 x 2)** **(4)**

1.6.5 Comment on the impact that the change in velocity will have on the rate of deposition in the Dawson River.

The stream velocity will decrease (2)
Lower velocity will result in more deposition (2)

(2 x 2) **(4)**
[75]

QUESTION 2

2.1 Refer to FIGURE 2.1 showing an extract from a synoptic weather map. Provide a term/phrase for the following climatological descriptions. Write only the question numbers 2.1.1 to 2.1.8 and the answer in your ANSWER BOOK, for example 2.1.9 High Pressure.

2.1.1 ***Cold front (1)***

2.1.2 ***Cumulonimbus clouds (1)***

2.1.3 ***Easterly* (1)**

2.1.4 ***2° (C) Celsius* (1)**

2.1.5 ***23° (C) Celsius* (1)**

2.1.6 ***Coastal* (1)**

2.1.7 ***1 016 mb/hPa (1)***

2.1.8 ***Trough (1)***

(8 x 1) (8)

2.2 Choose the correct word(s) from those given in brackets to make the geomorphological statements TRUE. Write only the word(s) next to the question numbers (2.2.1 to 2.2.7) in the ANSWER BOOK, for example 2.2.8 Fingertip stream.

2.2.1 ***rejuvenation (1)***

2.2.2 ***Base flow (1)***

2.2.3 ***drainage basin (1)***

2.2.4 ***interfluves (1)***

2.2.5 ***water table (1)***

2.2.6 ***permanent base level (1)***

2.2.7 ***confluence (1)*** **(7 x 1) (7)**

2.3 Refer to FIGURE 2.3 which shows a mid-latitude cyclone.

2.3.1 Provide ONE point of evidence visible in FIGURE 2.3 which proves that the mid-latitude cyclone shown is in the mature stage of development.

Warm and cold fronts are clearly visible/well defined. (1)

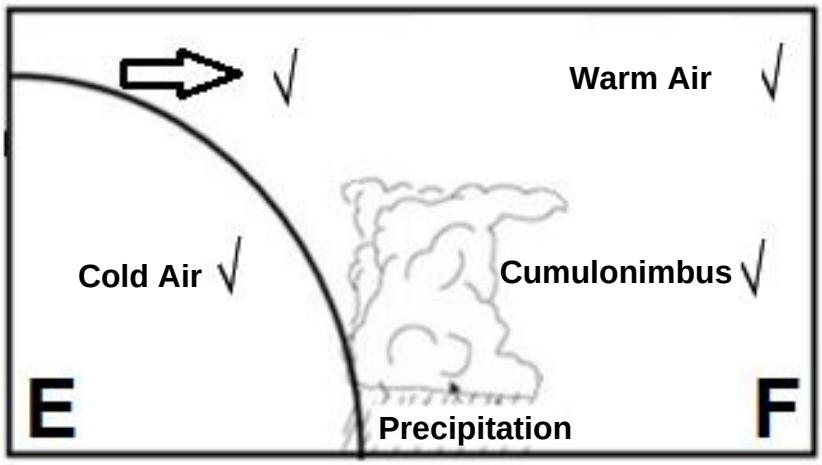
(1 x 1) (1)

2.3.2 Which hemisphere is depicted in FIGURE 2.3?

Southern Hemisphere (1) **(1 x 1) (1)**

2.3.3 Draw a transverse (cross) profile from **E** to **F** in FIGURE 2.3 and indicate the following:

(a) An arrow indicating the direction of movement of the front
(b) Identify and illustrate the cloud formation at **F**.
(c) The area of cold air
(d) The area of warm air



(4 x 1) (4)

2.3.4 Account for the likelihood (chance) that expected rainfall at location **A** in FIGURE 2.3 will be a slight drizzle.

A is in the warm sector (2)
The air is warm with limited condensation (2) **(2 x 2) (4)**

2.3.5 An outdoor music festival is planned at location **D** in FIGURE 2.3 in the next 24 hours. Recommend the rescheduling of the event by providing TWO climatological reasons as to how the music festival could be negatively affected by the expected changes in weather.

Strong convection before the cold front may result in the development of cumulonimbus clouds and rain (2)
Heavy rainfall with thunderstorms and hail (2)
Lightning associated with expected thunderstorms can be dangerous (2)
Rain may cause flooding of the event (2)
Rain may damage equipment (2)
Insufficient undercover shelter for patrons of the event (2)
Increase in wind speed can cause discomfort (2)
Increase in wind speed can result in hazardous flying debris (2)
Unsecured equipment may be damaged by an increase in wind speed (2)
Drop in temperatures will cause discomfort for patrons (2)
[ANY TWO] **(2 x 2)** **(4)**

2.4 Refer to FIGURE 2.4, indicating winter conditions over South Africa.

2.4.1 Name the anticyclone labelled **X.**

Kalahari Anticyclone (1) **(1 x 1)** **(1)**

2.4.2 Is the local wind at **Y** onshore or offshore?
Onshore (1) **(1 x 1)** **(1)**

2.4.3 Provide climatological evidence from FIGURE 2.4 which indicates that winter conditions are represented on the sketch.

Temperature inversion is below the escarpment (2)
Mid-latitude cyclone is approaching the Western Cape (2)
Kalahari/Continental anti-cyclone is prominent (well developed) over the interior plateau (2)
[ANY ONE] **(1 x 2)** **(2)**

2.4.4 Account for the position of the inversion layer as indicated in FIGURE 2.4.

The Kalahari anticyclone/Continental anticyclone is dominant during winter (2)
There is less heating of the surface therefore less rising air currents to lift the inversion layer above the escarpment (2)
The air mass above the interior is descending creating stable atmospheric conditions (2)
Inversion layer is located closer to the surface (2)
[ANY TWO] **(2 x 2)** **(4)**

2.4.5 In a paragraph of approximately EIGHT lines, discuss the impact that the position of the inversion layer and local wind **Y,** illustrated in FIGURE 2.4, will have on the amount of rainfall that will be experienced over the interior and the east coast of South Africa.

<u>INTERIOR</u>
The inversion layer is closer to the surface because the landmass is too cold to cause upliftment of the air mass over the interior (2)
A temperature inversion develops below the level of the escarpment in winter (2)
Moist air from the Indian Ocean (wind Y) is unable to reach the plateau (2)
Results in stable atmospheric conditions in the interior with little/no condensation and little/no rainfall (2)
Interior will have reduced availability of water (2)

<u>EAST COAST</u>
East coast will have stable rainfall conditions because the moist air from the Indian Ocean reaches the coast through wind Y and is forced up the escarpment (2)
Condensation takes place and results in rainfall (2)
East coast will have a constant availability of water (2)
[ANY FOUR/MUST REFER TO THE EAST COAST AND INTERIOR] **(4 x 2)** **(8)**

2.5 Refer to FIGURE 2.5, which shows the drainage density of two drainage basins.

2.5.1 Define the term *drainage density*.

The total length of all the streams and rivers in a drainage basin divided by the total area of that drainage basin [CONCEPT] (1)
(1 x 1) (1)

2.5.2 Does drainage basin **A** or drainage basin **B** reflect a higher drainage density?

Drainage Basin B (1) **(1 x 1) (1)**

2.5.3 Provide evidence from FIGURE 2.5 to support your answer to Question 2.5.2.

There are more streams/tributaries per unit area in drainage basin B (2) **(1 x 2) (2)**

2.5.4 Discuss how permeability can influence the drainage density as shown in drainage basin **A**.

A greater degree of permeability will result in more infiltration and less runoff (2)
Less streams formed resulting in a lower drainage density (2)
(Candidates can explain less permeability) **(2 x 2) (4)**

2.5.5 Determine the stream order of the main stream in drainage basin **B**.

Stream order 4/Order 4/4 (2) **(1 x 2) (2)**

2.5.6 Explain the relationship between deforestation and the permeability of the underlying rock structure and the stream order identified in drainage basin **B**.

Deforestation results in more surface run-off resulting in more streams which results in higher stream order (2)
Less permeability of the underlying rock structure results in less infiltration/more runoff, more streams and a higher stream order (2) **(2 x 2) (4)**

2.6 Refer to FIGURE 2.6, an extract of an article on the Vaal River Catchment Management Agency.

2.6.1. Define the term *catchment area*.

The area that captures rainfall/precipitation (1)
The area from which rainfall flows into a river, lake or reservoir (1)
[CONCEPT] **(1 x 1)** **(1)**

2.6.2 Name ONE secondary economic activity mentioned in the article that uses water from the Vaal River catchment area.

Industry (1)
Power generation (1)
[ANY ONE] **(1 x 1)** **(1)**

2.6.3 Discuss TWO impacts that water deterioration will have on the agricultural activities in the region.

Less water available for agricultural activities (2)
Lower output of agricultural production (2)
Lower quality of agricultural products (2)
Commercial farms decrease (2)
Decline in economic activities related to/dependent on agriculture (2)
Decline in employment in the agricultural sector (2)
[ANY TWO] **(2 x 2)** **(4)**

2.6.4 Suggest a reason why it is important to consult with the community in the management of the catchment area.

To identify local community needs (2)
To ensure that the local community understands the importance of catchment management (2)
To ensure community participation in the management of catchment area processes (2)
Community 'buy-in'/support to management strategy (2)
Their knowledge of the area could help in managing the catchment area (2)
[ANY ONE] **(1 x 2)** **(2)**

2.6.5 In a paragraph of approximately EIGHT lines, recommend sustainable measures that the farming community in the Vaal River catchment region can implement to conserve water.

Preserve topsoil/soil which absorbs more water/allows more infiltration (2)
Preserve natural vegetation to retain water in the soil (2)
Use more efficient/scientific irrigation systems to reduce wastage (can give examples) (2)
Capturing and storing rainwater to reduce usage from groundwater sources (2)
Plant drought resistant crops to reduce irrigation (2)
Practise rotational grazing to preserve natural groundcover (2)
Cover crops after irrigation to prevent evaporation (2)
[ANY FOUR] **(4 x 2)** **(8)**
[75]

SECTION B: RURAL AND URBAN SETTLEMENTS AND SOUTH AFRICAN ECONOMIC GEOGRAPHY

QUESTION 3

3.1 Refer to FIGURE 3.1 depicting street patterns. Match the descriptions below with street pattern A, B or C. Choose the answer and write only the letter A, B or C next to the question numbers (3.1.1 to 3.1.8) in the ANSWER BOOK, for example 3.1.9 A.

3.1.1 ***B/Grid iron (1)***

3.1.2 ***A/Radial (1)***

3.1.3 ***C/Planned irregular (1)***

3.1.4 ***B/Grid iron (1)***

3.1.5 ***C/Planned irregular (1)***

3.1.6 ***A/Radial (1)***

3.1.7 ***B/Grid iron (1)***

3.1.8 ***C/Planned irregular (1)***

(8 x 1) (8)

3.2 Choose the term from COLUMN B that matches the description of different types of industries in COLUMN A. Write only the letter (A – H) next to the question numbers (3.2.1 to 3.2.7) in the ANSWER BOOK, for example 3.2.8 I.

3.2.1 ***B/Light Industry (1)***

3.2.2 ***A/Raw material orientated industry (1)***

3.2.3 ***D/Heavy industry (1)***

3.2.4 ***H/Footloose industry (1)***

3.2.5 ***F/Ubiquitous industry (1)***

3.2.6 ***C/Break of bulk industry (1)***

3.2.7 ***E/Market orientated industry (1)***

(7 x 1) (7)

3.3 Refer to FIGURE 3.3**,** a pie graph on reasons for rural-urban migration.

3.3.1 Define the term *rural-urban migration.*

The movement of people from rural to urban areas (1) **(1 x 1)** **(1)**

3.3.2 Provide ONE physical push factor on the pie-chart that results in rural-urban migration.

Poor infrastructure (1) **(1 x 1)** **(1)**

3.3.3 Calculate the variance (difference) between the TWO social factors on the pie-chart that cause people to leave rural areas.

19% (2) **(1 x 2)** **(2)**

3.3.4 According to the diagram, 32% of rural-urban migration is caused by reasons, other than those depicted in the diagram. Explain TWO other social factors in the rural areas which can lead to rural-urban migration.

Low paying jobs cause poverty and people seeking a better life in the city (2)
Unemployment causes people to seek employment in the city (2)
Lack of employment diversity leads to people seeking better jobs in the city (2)
Poor service delivery (Can explain examples) (2)
Lack of services (Can explain examples) (2)
Crime and farm murders force people to move to safer areas (2)
No entertainment encourages the youth to migrate to the cities (2)
Young people leave for better quality of life (2)
Family members follow bread winners to urban areas (2)
[ANY TWO] **(DO NOT ACCEPT UNEMPLOYMENT AND CORRUPTION)** **(2 x 2)** **(4)**

3.3.5 Write a paragraph of approximately EIGHT lines, in which you explain sustainable measures that the government can implement to prevent depopulation due to poor social conditions in rural areas.

Initiation of music/art festivals to improve job opportunities (2)
Improve infrastructure for easier access to social events (2)
Improve service delivery such as better schools/hospitals/clinics (2)
Restoring historical buildings to attract tourists and develop ecotourism sites (2)
Initiate adventure activities for the youth (2)
Advertising on highways near the area to attract the attention of tourists outside the rural settlement/Establishment of a tourist board to promote the area (2)
Decentralization of industries to create job opportunities for youth so that the young people have peers to communicate with (2)
Development of Tourism farms/lodges/wedding venues (2)
Attract high-tech, footloose industries which will bring highly skilled people to the rural area (2) and create more employment diversity (2)
Develop retirement villages that will create employment opportunities for younger people (2)
Retirement villages will bring more social opportunities for the older people in rural areas. (2)
[ANY FOUR] **(4 x 2)** **(8)**

3.4 Study FIGURE 3.4, an informal settlement and an area of low cost housing.

3.4.1 Match **A** and **B** on FIGURE 3.4 with the TWO terms *low cost housing and informal settlement.*

A = Informal settlement(1)
B = Low cost housing (1) **(2 x 1)** **(2)**

3.4.2 Refer to the building materials used in FIGURE 3.4 and differentiate between settlements **A** and **B**.

Settlement A –informal settlement: wood/cardboard/waste material (1)
Settlement B – low cost housing: bricks, cement, wood, glass/ stronger material (1) **(2 x 1)** **(2)**

3.4.3 Apart from formal building structures, name any TWO basic services that people may find lacking at settlement **A,** evident in FIGURE 3.4.

Electricity (1)
Sewage removal (1)
Waste removal (1)
Running water (1)
Safe buildings to live in (1)
Medical facilities (1)
[ANY TWO] **(2 x 1)** **(2)**

3.4.4 Why do many people still choose to remain in settlement **A,** despite unfavourable conditions?

The living costs are very low (2)
They cannot afford other formal housing (2)
There is not enough formal housing available (2)
They have no other option as they do not have a place to live (2)
It is closer to their places of work (2) **(2 x 2)** **(4)**
[ANY ONE]

3.4.5 Recommend TWO strategies that the government of South Africa could implement in settlement **A** to reduce the impact of the unfavourable conditions you mentioned in QUESTION 3.4.3.

Installation of solar power (2)
Reduce overcrowding through providing RDP housing/low cost housing in other areas (2)
Provide basic services/may give examples of services (2)
Water pipelines to provide running water to a central point (2)
Taps in a central place from where people can fetch water (2)
Scheduled waste removal (2)
Supply them with mobile toilets (2)
Access to mobile clinics (2)
[ANY TWO BUT TEMPORARY MEASURES] **(2 x 2)** **(4)**

3.5 Study the article on food security and hydroponic farming in FIGURE 3.5.

3.5.1 Define the term *food security*.

Sufficient food produced to meet the needs of the people in order for them to live a healthy and productive lifestyle.
(Concept) **(1 x 1)** **(1)**

3.5.2 Name TWO environmental factors from the article, that had a negative influence on traditional food production and food security.

Insufficient water (1)
Unreliable rainfall (1)
Droughts (1)
Less arable land (1)
Poor farming methods(1)
Poor soils(1)
Soil erosion (1)
[ANY TWO] **(2 x 1)** **(2)**

3.5.3 Describe how the negative impact of the environmental factors of food security resulted in the development of hydroponic farming.

The fertilized solution is a good substitute for farming in water scarce areas (2)
The fertilized solution is a good substitute for unreliable rainfall (2)
Drought will not influence food production (2)
Arable land will not influence food production (2)
The plants are grown in fertilized solutions and will not be influenced by the quality of soil (2)
Hydroponic farming does not use heavy machinery which causes soil erosion (2)
Poor farming methods are minimalized because repeated cultivation is avoided, thus less soil erosion (2)
Weeds and diseases are controlled more easily and improves soil quality (2)
[ANY TWO, MUST BE ENVIRONMENTAL] **(2 x 2)** **(4)**

3.5.4 Refer to the article and mention TWO environmental advantages of crops being grown in a fertilized solution with the hydroponic farming method.

The farmer can apply plant nutrients directly to the roots of plants to increase the quality of plants (2)
Weeds and diseases can be controlled without spraying chemicals (2)
Erosion of soil is avoided (2)
[ANY TWO - MUST BE ENVIRONMENTAL ADVANTAGES] **(2 x 2)** **(4)**

3.5.5 In your opinion is hydroponic farming sustainable as an alternative for traditional crop farming to ensure food security in a country such as South Africa? Explain your answer.

YES (1).
South Africa needs bigger yields as food insecurity is a problem (2)
South Africa has a lot of erosion and hydroponic farming can help against soil erosion (2)
South Africa's soil is thin and infertile and produces fewer yields (2)
It could help protect yields against floods and droughts that occur regularly in South Africa (2)
It could prevent hunger and famine in South Africa as more production takes place (2)
People can practise hydroponic farming on a small scale to sustain themselves (2)
Production can take place throughout the year and is not exposed to extreme climate conditions (2)

OR

NO (1)
South Africa is already an arid/semi-arid country and water is scarce (2)
South Africa does not have the resources (accept examples of resources such as water, money for research etc.) to make this feasible (2)
South Africa is still a developing country and research is not done properly (2)
South Africa is still a developing country and does not have the infrastructure to support the development (2)
South Africa does not have enough electricity and hydroponic farming requires high electricity use (2)
[ANY ONE REASON] **(1 + 2)** **(3)**

3.6 Study the diagram and article on the Platinum SDI in FIGURE 3.6.

3.6.1 Explain the main aim of Spatial Development Initiatives

The main aim is to promote growth in areas that are underdeveloped but have economic potential (e.g. creation of new jobs and improved infrastructure to attract foreign investors). (2) **(1 x 2)** ***(2)***

3.6.2 In which province is the Platinum SDI situated?

North West (1) **(1 x 1)** **(1)**

3.6.3 State TWO major challenges that the government wanted to address by locating the Platinum SDI in this region?

They wanted to address the spatial economic development challenges of the area/region. (1)
To provide communities with opportunities to participate in economic activities e.g. tourism and the development of infrastructure. (1)
Promote sustainable job creation for people living in underdeveloped rural areas with high poverty and under-employment levels (1)
To create employment and a better standard of living for the rural areas (1)
Use the local resources of an area to generate economic growth. (1)
To develop areas outside of established industrial regions (1)
To stimulate economic growth of industrial activities (1)
To provide industrial infrastructure linked to international sea- or airports for export-oriented manufacturing industries (1)
(ANY ONE) **(2 x 1)** **(2)**

3.6.4 According to the article, was the Platinum SDI efficient? Substantiate your answer by using the information found in FIGURE 3.6, relating to the contribution to the GDP

No (1)
"after more than a decade there is still little evidence that the Platinum SDI will in the near future be efficient" (2)
At present the Platinum SDI has little to offer" (2)
".. to succeed will require more effort …" (2)
(Any ONE) **(1 + 2)** **(3)**

3.6.5 Study the indicators of the effectiveness index and explain in a paragraph of approximately EIGHT lines why this contributed to the re-evaluation of the Platinum Spatial Development Initiative.

There was no increase in the number of people who has achieved post-matric qualifications in the 17 years (2)
There was no improvement in the education and standard of living of the population (2)
The percentage of the population living below the food security threshold has increased (2)
The project no longer created jobs that should have resulted in improved food security (2)
The crime index increased by 8%, indicating a decline in social conditions in the area (2)
A large percentage of the workforce is not educated (2)
The quality of work is not up to standard due to the percentage of population without after-school qualifications (2)
A large percentage of the population lives below the poverty line (2)
The general crime index is higher in the area (2)
(ANY FOUR) **(4 x 2)** **(8)**

QUESTION 4

4.1 Choose a term from COLUMN B that matches the description in COLUMN A. Write only the letter (A – H) next to the question numbers (4.1.1 to 4.1.7) in the ANSWER BOOK, for example 4.1.8 I.

4.1.1 ***C/Urban growth (1)***

4.1.2 ***G/Urban expansion (1)***

4.1.3 ***H/Commercial decentralization(1)***

4.1.4 ***A/Urbanisation (1)***

4.1.5 ***B/Urban sprawl (1)***

4.1.6 ***E/Counter urbanisation (1)***

4.1.7 ***F/Urban hierarchy (1)***

(7 x 1) (7)

4.2 Refer to FIGURE 4.2 that shows different types of farming. Match the descriptions below with the type of farming **A** or **B**. Choose the answer and write only the letter **A** or **B** next to the question numbers (4.2.1 to 4.2.8) in the ANSWER BOOK, for example 4.2.9 A.

4.2.1 ***A/Small scale farming (1)***

4.2.2 ***A/Small scale farming (1)***

4.2.3 ***A/Small scale farming (1)***

4.2.4 ***B/Large scale farming (1)***

4.2.5 ***A/Small scale farming (1)***

4.2.6 ***B/Large scale farming (1)***

4.2.7 ***B/Large scale farming(1)***

4.2.8 ***B/Large scale farming (1)*** **(8 x 1) (8)**

4.3 Study FIGURE 4.3, which shows the location of settlements.

4.3.1 Differentiate between the location of a wet point settlement and a dry point settlement.

Wet point settlements: are located close to the water source/river because it's an arid area (1)
Dry point settlements are located away from the water because of the danger of flooding (1) **(2 x 1) (2)**

4.3.2 Is the settlement in FIGURE 4.3 a wet or dry point settlement? Give TWO reasons for your answer.

Wet point settlement (1)
They are located close to the water source/river (2)
There are no other water sources nearby (2) **(1 + 4) (5)**

4.3.3 State the pattern of the settlement illustrated in FIGURE 4.3.

Nucleated (1) **(1 x 1) (1)**

4.3.4 Explain social advantages of this settlement pattern illustrated in FIGURE 4.3.

Safety as houses are nearby (2)
There is more social contact (2)
More people to share workload (2)
(Any TWO) **(2 x 2) (4)**

4.3.5 The settlement shape illustrated in FIGURE 4.3 is linear. Give ONE advantage of this shape regarding accessibility to the water source.

All parts of the settlements are located in a line along the river (2) **(1 x 2) (2)**

4.4 Study FIGURE 4.4, a graph on urban functions.

4.4.1 Explain the difference between a *low order* function and a *high order* function.

Low order: It is usually cheaper goods, people buy the goods regularly, often purchase goods on a daily basis (1)
High order functions: Usually expensive goods, people buy these goods occasionally. Specialized goods(1)
[ONE DESCRIPTION FOR HIGH ORDER AND ONE FOR LOW ORDER FUNCTION] **(2 x 1) (2)**

4.4.2 Name ONE example of a low order function and ONE example of a high order function regarding education indicated in FIGURE 4.4.

Low order: primary/public school (1)
High order: university, sec school, technical college (1)
[ONE lower and ONE higher order] **(2 x 1) (2)**

4.4.3 Explain the meaning of the label "population size of settlements" found on the horizontal axis.

The amount of people that live in the settlement/The size of the population in the settlement/Number of people in settlement (2)
[MUST MENTION NUMBER OF PEOPLE AND SETTLEMENT]
(1 x 2) (2)

4.4.4 State the general trend between the "population size of the settlements" and the "number of services provided".

The larger the population size is, the higher the number of services provided (2)
The lower the population size is, the lower the number of services provided (2)
[ANY ONE] **(1 x 2) (2)**

4.4.5 In a paragraph of approximately EIGHT lines, analyse the relationship between the settlement size and the order of services and discuss reason**s** for this relationship.

ANALYSIS
The smaller settlements contain low-order features (2)
There are more villages with low-order functions (2)
The larger settlements contain low and higher order services (2)
[MUST DISCUSS THE SIZE AND ORDER]

REASONS
Smaller settlements cater for the needs of the immediate community (2)
Smaller settlements don't have a large enough market to support high order services (2)
Large settlements cater for the need of a large area which includes the smaller settlements (2)
Larger settlements have a large enough market to support high order services (2)
(ANY FOUR-MUST INCLUDE ANALYSIS AND REASONS)

(4 x 2) (8)

4.5 Study FIGURE 4.5 which depicts a graph illustrating the contribution of different economic sectors to employment.

4.5.1 Define the concept *primary sector*.

The sector concerned with the extraction of raw materials/ materials from the natural environment (1)
[CONCEPT] **(1 x 1) (1)**

4.5.2 (a) State the number of people employed by the mining sector in 2016 and 2018.

2016: 222 000 to 388 000 (1)
2018: 222 000 to 334 000 (1) **(2 x 1) (2)**

(b) Explain how mechanisation influenced the employment opportunities in the mining sector from 2016 to 2018.

It declines because people are replaced by machinery (and fewer people are necessary to do the same work) (2) ***(1 x 2) (2)***

4.5.3 (a) Which tertiary sector provides the most employment opportunities in South Africa?

Trade (1) **(1 x 1)** ***(1)***

(b) Explain the economic importance of this tertiary sector, identified in QUESTION 4.5.3(a), with regards to foreign income.

More people involved in trade will allow for more exports resulting in more foreign exchange. (2) **(1 x 2)** ***(2)***

4.5.4 Write a paragraph of approximately EIGHT lines, in which you discuss factors that hinder the mining sector and the effect it has on the tertiary sector identified in QUESTION 4.5.3(a).

Protests and labour strikes reduce the extraction of raw material which reduce the amount of material to be processed (2)
Minimum wages in the primary sector increase the cost of production (2)
In the primary sector the mine disasters for instance falling rocks etc., increases the mining costs and therefore decreases profits in manufacturing (2)
In the primary sector, the minerals are situated inland. It increases transport costs that increase the costs of the manufacturers (2)
Minerals are non-renewable and challenge the planning and production in the manufacturing sector (2)
Floods and fires could cause production to close down (2)
HIV/AIDS causes the skilled workers to be absent and this increases costs of production (2)
Mines have to pay medical funds and insurances that increase the cost of extracting and manufacturing (2)
If products are exported as the raw material, it causes job losses in the manufacturing sector (2)
Fluctuating prices of minerals challenge the planning and production in the manufacturing sector (2)
Trading in raw materials, decreases the profits made with unprocessed materials (2)
(ANY FOUR) **(4 x 2)** **(8)**

4.6 Study the case study in FIGURE 4.6 on the PWV industrial region.

4.6.1 The core industrial region of Gauteng is also referred to as the PWV-region. For what does the abbreviation PWV stand?

Pretoria Witwatersrand Vereeniging (1) **(1 x 1)** **(1)**

4.6.2 State the relationship between load-shedding and the GDP growth.

Load-shedding has a negative impact on the GDP (1)
More load-shedding leads to less growth in the GDP (1)
[CONCEPT] **(1 x 1)** **(1)**

4.6.3 Apart from load-shedding, the reserve bank identifies factors that impacted the GDP of the PWV region. List TWO of these factors.

Number of labour strikes (1)
Maintenance and weak domestic and global demand (1)
Political uncertainty (1)
Business and consumer confidence shattered (1)
[ANY TWO] **(2 x 1)** **(2)**

4.6.4 Explain how the fourth industrial revolution influences industries' dependency on electricity supply in the PWV region.

The fourth industrial revolution is a combination of multiple factors coming together in electronics that is dependent on electricity (2)
Technology is largely dependent on electricity (2)
High speed connections are important for collecting information/communicating rapidly (2)
Technology ensures increased computing power, the cloud etc. for growth in the manufacturing sector (2)
Without power large machinery cannot be operated (2)
Businesses need technology to improve how they can better use and manage data (2)
Industries must understand that the data they have will improve production and services (2)
(ANY TWO) **(2 x 2)** **(4)**

4.6.5 Discuss how load-shedding impacts negatively on the multiplier effect of the PWV economy and ISCOR/Mittal Steel (a large enterprise found in the PWV region).

<u>MULTIPLIER EFFECT</u>
Load-shedding influences the market/import and export (2)
Other industries rely on the manufacturing of steel at Iscor, influencing their production negatively (2)
Trade will be influenced negatively in any steel product (2)
Load-shedding will have an effect on the GDP (2)
The country will earn less revenue because of less trade (2)
Load-shedding results in less international trade in steel products (2)

<u>ISCOR</u>
Large enterprises such as Iscor need power/electricity to function to their best ability (2)
As soon as load-shedding is implemented, production comes to a halt (2)
ISCOR aims to remain a quality low cost producer. As soon as load-shedding takes place, it increases the costs of production of steel (2)
Operational excellence is not possible if unreliable power exists (2)
[ANY THREE. Must refer to the MULTIPLIER EFFECT and ISCOR]

(3 x 2*)* **(6)**
[75]

TOTAL: 225