education

Department:
Education
PROVINCE OF KWAZULU-NATAL

NATIONAL SENIOR CERTIFICATE

GRADE 12

GEOGRAPHY P1

MARKING GUIDELINE

SEPTEMBER 2019

PREPARATORY EXAMINATION

MARKS: 225

This marking guideline consists of 19 pages.

SECTION A: CLIMATE AND WEATHER AND GEOMORPHOLOGY

QUESTION 1

1.1

1.1.1 28^0C ✓

1.1.2 South west ✓

1.1.3 27^0C ✓

1.1.4 15 knots ✓

1.1.5 drizzle ✓

1.1.6 75% / ¾ / $\frac{6}{8}$ ✓

1.1.7 96% ✓

1.1.8 unstable ✓ (8 x 1) (8)

1.2

1.2.1 A ✓

1.2.2 A ✓

1.2.3 B ✓

1.2.4 B ✓

1.2.5 A ✓

1.2.6 B ✓

1.2.7 B ✓ (7 x 1) (7)

1.3

1.3.1 8 ✓ (1 x 1) (1)

1.3.2 Huge waves due to intense low pressure and strong winds ✓✓
Very large wind driven waves ✓✓ (1 x 2) (2)
(Concept)

1.3.3 Wind speeds up to 188 km/h ✓✓
Storm surge up to 4m ✓✓
Devastatihg floods due to torrential rain ✓✓
The cyclone tracked a great distance over a warm ocean picking up alot of moisture in its path ✓✓
(ANY TWO – Must give measurements) (2 x 2) (4)

1.3.4 Putting early warning systems so that people can prepare. ✓✓
Educate people on steps that can be taken to limit effects ✓✓
Proper tracking and monitoring of the cyclone path ✓✓
Creating emergency transport routes/emergency services ✓✓
Temporary shelters/assembly points ✓✓
Planning emergency evacuation plans ✓✓
Boarding up windows ✓✓
Placing sand bags at doors to avoid water entering homes ✓✓
Moving to higher ground ✓✓
Avoid planning settlements on flood plains ✓✓
Use stronger building material to withstand storm impact ✓✓
(ANY FOUR) (4 x 2) (8)

1.4

1.4.1 CBD/Central Business District ✓ (1 x 1) (1)

1.4.2 Urban Heat Island ✓ (1 x 1) (1)

1.4.3 High building density ✓✓
Building material that retain heat/Tar/Concrete absorbs heat ✓✓
High rise/geometry of buildings retain heat/tall buildings prevent wind from removing heat ✓✓
Early morning/late afternoon sun's rays hit buildings at 90^0 angle concentrating heat on the buildings ✓✓
Many motor vehicles/ Burning of fuel ✓✓
Many industries/industries release heat ✓✓
High levels of pollution ✓✓
Lack of vegetation ✓✓
Lack of exposed soil ✓✓
Use of air conditioning ✓✓
Central heating from shops ✓✓
High day time population ✓✓
Lack of exposed water surfaces ✓✓
(ANY TWO) (2 x 2) (4)

1.4.4 The development of an area in the city where vegetation occurs and no development or construction is allowed. ✓ (1 x 1) (1)
(Concept)

1.4.5 Improves the quality of air ✓✓
Cooling effect ✓✓
Increases oxygen supply/Reduces carbon dioxide/Serves as a green lung ✓✓
Reduces the pollution level ✓✓
Encourages bird/insect life/biodiversity/ ✓✓
Creates a buffer zone between activities ✓✓
Stormwater treatment ✓✓
Used as recreation area/picnics/leisure ✓✓
Increases asthetic appearance of the city ✓✓
Reduces stress/healthy outdoor living and tranquility ✓✓
Reduces the impact of flooding ✓✓
To prevent urban sprawl ✓✓
(ANY TWO) (2 x 2) (4)

1.4.6 Urban structures limit space ✓✓
Maintenance is expensive ✓✓
Pollution/Acid rain stunts growth of plants ✓✓
Land is expensive ✓✓
(ANY TWO) (2 x 2) (4)

1.5 1.5.1 Headward erosion ✓ (1 x 1) (1)

1.5.2 The less resistant rocks erode faster than more resistant rock ✓✓ (1 x 2) (2)

1.5.3 ***Increased precipation will increase the erosive power of the river, thereby increasing the rate of headward erosion ✓✓***
Drought and periods of low rainfall will decrease the erosive power of the river, thereby decreasing the rate of headward erosion ✓✓ (2 x 2) (4)
(TECHNICAL ERROR) DELETE

1.5.4 Stream energy will increase downstream of waterfall ✓✓
Steeper gradient will develop directly downstream of the waterfall ✓✓
The plunge pool will become wider and deeper✓✓
Waterfall will eventually disappear ✓✓
(ANY TWO) (2 x 2) (4)

1.5.5 Waterfall will attract tourists/ecotourism-employment of local people/guides ✓✓
Development of holiday resorts/hospitality industry ✓✓
It will boost the local economy of the area through the production and selling of arts and crafts ✓✓
It will encourage business to open up e.g. kiosks, places to eat, souvenir stalls ✓✓
Businesses will create job opportunities- work in local hotels and resorts ✓✓
Generate hydro-electricity ✓✓
(ANY TWO) (2 x 2) (4)

1.6

1.6.1 B ✓ (1 x 1) (1)

1.6.2 River B erodes headward through the watershed to capture the waters of A ✓✓ (1 x 2) (2)

1.6.3 One side of the watershed could have been steeper than the other side ✓✓
The catchment area of the captor stream could be receiving higher rainfall (greater volume) ✓✓
Rejuvenation of the captor stream resulting from tectonic forces ✓✓
The underlying rock structure in the drainage basin of the captor stream could have been softer ✓✓
One river is flowing at a lower altitude than the other ✓✓
(ANY TWO) (2 x 2) (4)

1.6.4 River **C** – Captor river will therefore increase in volume resulting in a greater stream discharge ✓✓
Increase in speed will result in greater erosion ✓✓
River will be rejuvenated resulting in greater erosive power ✓✓

River **D** – Captive river therefore decrease in volume results in lower stream discharge ✓✓
Decrease in speed will result in less erosion/greater deposition ✓✓
(ANY FOUR) (4 x 2) (8)

[75]

RECALCULATE QUESTION 1 TOTAL

LEARNERS MARK/71 X 75

QUESTION 2

2.1

2.1.1 A ✓

2.1.2 B ✓

2.1.3 A ✓

2.1.4 B ✓

2.1.5 B ✓

2.1.6 A ✓

2.1.7 winter ✓ (7 x 1) (7)

2.2

2.2.1 D – Braided streams ✓

2.2.2 A – Ox-bow lake ✓

2.2.3 I – Antecedent ✓

2.2.4 F – Delta ✓

2.2.5 B – Levees ✓

2.2.6 G – Flood plain ✓

2.2.7 E – Rapids ✓

2.2.8 H – Confluence ✓ (8 x 1) (8)

2.3

2.3.1 Berg winds ✓ (1 x 1) (1)

2.3.2 winter ✓ (1 x 1) (1)

2.3.3 The hot dry winds fuels or creates the ideal environment for runaway veld fires ✓ (1 x 1) (1)

2.3.4 Presence of the Continental high/Kalahari high ✓ and Coastal low ✓ (2 x 1) (2)

2.3.5 Winds originate in the interior with little moisture source ✓✓
Winds moving under the force of gravity down the escarpment heat up adiabatically ✓✓
Winds warm because of friction and compression ✓✓
Descending air that warms adiabatically ✓✓ (1 x 2) (2)
(ANY ONE)

2.3.6 **Farming community**

High discomfort level will make farm workers lethargic and production rate drops ✓✓
Crops will wither in heat wave/large scale losses ✓✓
Loss of income to farmers ✓✓
Veld fires can destroy crops ✓✓
Stock losses due to dehydration ✓✓

Natural Environment

Natural vegetation is lost ✓✓
Valuable trees are burnt ✓✓
Wild animals die ✓✓
Soil is damaged and loses its fertility ✓✓
Strong wind blows away fertile top soil ✓✓
Upsets the ecosystem ✓✓
Food chain is disrupted ✓✓
Rivers contaminated with dust ✓✓
(ANY FOUR) (4 x 2) (8)

NB: MUST MENTION BOTH FARMING COMMUNITY AND NATURAL ENVIRONMENT

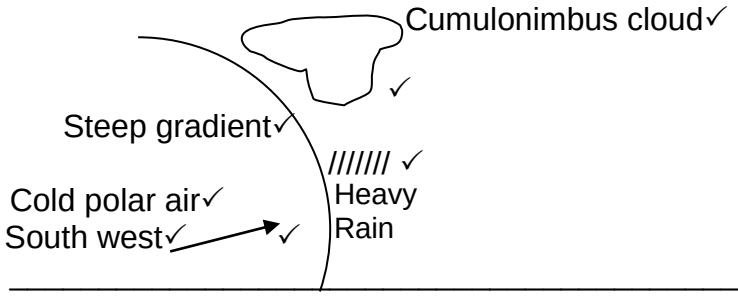
2.4

2.4.1 Mid-latitude cyclone/Extra tropical cyclone/Temperate cyclone
Frontal system/ Frontal Depression/Wave cyclone✓ (1 x 1) (1)

2.4.2 Presence of warm fronts/cold fronts ✓
Spiral movement of the bands of clouds in a clockwise direction ✓
Located in the mid-latitude ✓
Approaching from the west ✓ (2 x 1) (2)
(ANY TWO)

2.4.3 Air pressure drops then increases with the arrival of the cold dense air ✓✓
Temperature decreases ✓✓
Humidity decreases ✓✓
Cumulus and cumulonimbus clouds form ✓✓
Heavy rain/torrential rain ✓✓
Wind speed increases ✓✓
Winds change direction (backs) from north west to south west ✓✓
Snow may be expected ✓✓
(ANY TWO) (2 x 2) (4)

2.4.4



(4 x 1) (4)
(MARKS MUST BE GIVEN FOR ANY 4 CORRECT LABELS)

2.4.5 Much needed rain for farming ✓✓
Water for domestic use ✓✓
Fills water troughs for livestock ✓✓
Fills dams/rivers/lakes ✓✓
Frost can kill pests ✓✓
Frost/snow melts to increase ground water supply ✓✓
(ANY TWO) (2 x 2) (4)

2.5

2.5.1 Total area drained by a river and tributaries✓
[Concept] (1 x 1) (1)

2.5.2 3rd order✓✓ (1 x 2) (2)

2.5.3 Resembles a tree branch✓✓
Tributaries joing the main stream at an acute angle✓✓ (2 x 2) (4)

2.5.4 B – Low porosity resulting in higher drainage density ✓✓
C – High porosity resulting in low drainage density ✓✓ (2 x 2) (4)

2.5.5 ***At D the river load is still low, the friction of the narrow channel will be high and the river will use less energy for erosion ✓✓***

At E the water increases from tributaries, the gradient is gradual, the channel is wide and large, less friction and therefore more energy✓✓ (2 x 2) (4)
(DELETE) (TECHNICAL)

2.6

2.6.1 Sustainable conservation of the river and its drainage basin ✓
(Concept) (1 x 1) (1)

2.6.2 informal settlement on the river bank ✓
Littering ✓
loose soil due to removal of vegetation ✓
Disposal of domestic waste ✓
Remains of building in the river ✓
(ANY TWO) (2 x 1) (2)

2.6.3 Moving the settlement away from the floodline/river ✓✓
Provision of low cost housing away from the river ✓✓
Provision of refuse removal services ✓✓
Creating a buffer zone ✓✓
Provide proper sanitation ✓✓
Provision of tapped water ✓✓
Planting trees along the river expecially on bare slopes ✓✓
Imposing fines ✓✓
Educational programmes on water usage ✓✓
(ANY TWO) (2 x 2) (4)

2.6.4 Erratic rainfall results in limited water ✓✓
Rivers are the main source of drinkable water ✓✓
Clean water is required for domestic use ✓✓
Clean water is required for farming purposes ✓✓
Water is required for industrial activities ✓✓
Maintains aesthetic appeal ✓✓
Water is also used for recreational purposes / tourist attraction ✓✓
Rivers also supply food example fish ✓✓
Clean water is also essential for human health ✓✓
To ensure that ecosystems remain healthy and in balance ✓✓
(ANY TWO) (4 x 2) (8)

[75]

RECALCULATE TOTAL FOR QUESTION 2

LEARNER'S MARK/71*75

QUESTION 3

3.1

3.1.1 Dispersed ✓

3.1.2 Dispersed ✓

3.1.3 Nucleated ✓

3.1.4 Nucleated ✓

3.1.5 Dispersed ✓

3.1.6 Nucleated ✓

3.1.7 Nucleated ✓

3.1.8 Nucleated ✓ (8 x 1) (8)

3.2

3.2.1 Spatial Development Initiative ✓

3.2.2 Industrial Development Zone ✓

3.2.3 Growth points ✓

3.2.4 Reconstruction and Development program ✓

3.2.5 Centralisation ✓

3.2.6 Deconcentration points ✓

3.2.7 Maputo Corridor ✓ (7 x 1) (7)

3.3

3.3.1 Water ✓ (1 x 1) (1)

3.3.2 Water is basic need ✓ (1 x 1) (1)

3.3.3 Drought ✓
No rainfall for an extensive period ✓
[ANY ONE] (1 x 1) (1)

3.3.4 Water restrictions implemented ✓✓
Saving water ✓✓
Limit to daily quantity✓✓
[ANY ONE] (1 x 2) (2)

3.3.5 Theft and corruption ✓✓
Too expensive (R30 billion needed a year) ✓✓ (2 x 2) (4)

3.3.6 Decrease of employment opportunities ✓✓
Reduction in production leads to less workers needed ✓✓
Ripple effect on other industry's employment, e.g. less drivers in transport ✓✓
Workers working less hours, with a decrease in salary and having a negative effect on quality of life ✓✓
Unemployment results, services like financial institutions, schools, hospitals, etc. closes ✓✓
[ANY TWO] (2 x 2) (4)

3.4

3.4.1 B - Hoyt's Sector model ✓
C - Multiple nuclei model ✓ (2 x 1) (2)

3.4.2 To explain location and relationship between different land-use zones in a city ✓✓ (1 x 2) (2)

3.4.3 (a) CBD ✓ (1 x 1) (1)

(b) In the centre for a high degree of accessibility ✓
Oldest part of the city/Origin of city ✓ (2 x 1) (2)

(c) Cities today have many nuclei (focal points) ✓✓
It is a more flexible model that resembles many cities in the developed world ✓✓
It shows the complex nature of cities considering factors that affect land use zones ✓✓
Improved transport led to urban sprawl ✓✓
Unequal outward development of cities✓✓
[ANY ONE] (1 x 2) (2)

3.4.4 **Reasons for state of buildings**

Buildings are old and dilapidated because landlords do not want to maintain the buildings because of the future expansion of the CBD ✓✓
Land value is high and building value is low ✓✓
Low owner occupancy ratio ✓✓
Vandalism of buildings ✓✓
Overcrowding by illegal immigrants ✓✓
Buildings are no more used for the original purpose ✓✓

Strategies of developers
Renovation and repairing of the buildings / Invasion and succession ✓✓
Urban renewal through demolishing and rebuilding/ Gentrification Chelseafication ✓✓
Create open spaces by reducing building density ✓✓
Conserving facades of older buildings and renovating the inside ✓✓
Create loft living spaces in renovated buildings ✓✓
Legislate and monitor the occupancy rate in buildings ✓✓
Resettlement of people living in the inner city ✓✓
Increased security/regular policing/CCTV cameras ✓✓
Regular cleaning/removal of litter ✓✓
By-laws to protect the inner-city environment to follow up occupational rental payments ✓✓
[MUST MENTION BOTH] (4 x 2) (8)

3.5

3.5.1 20 % ✓ (1 x 1) (1)

3.5.2 Distribution – many areas in South Africa are located in remote places with no proper infrastructure for food to reach them ✓✓
Access – the price of food makes it difficult for the masses to purchase them ✓✓
[ANY ONE] (1 x 2) (2)

3.5.3 Price of the country's staple food, maize ✓ (1 x 1) (1)

3.5.4 To secure normal growth and development ✓✓
To secure an active healthy life ✓✓
Physical well being leads to increased productivity✓✓
[ANY ONE] (1 x 2) (2)

3.5.5 **<u>ECONOMIC FACTORS:</u>**

Lack of capital to purchase equipment such as ploughs, tractors, harvesters and money for seeds ✓✓
Shift from subsistence to commercial crops widens poverty gaps ✓✓
Shift from food production to bio-fuel production leads to less food being produced ✓✓
Trade policies leads to competition with subsidised foreign producers ✓✓
Free trade with no local protection policies means MEDC's can dump cheap surplus on LEDC's and destroy local markets ✓✓
Growing of cash crops for profit and not for food ✓✓
[ANY TWO] (2 x 2) (4)

3.5.6 Growing a mixture of crops to ensure a balanced diet for the people ✓✓
Quality seeds should be used to gaurantee high yield✓✓
New farming techniques/Genetically Modified crops and seeds ✓✓
Farmer support programme ✓✓
Planting perennial plants which require less fertilizers, protect the soil and provide shelter all year round ✓✓
Using natural predators and plants like chilli and garlic instead of chemicals to keep the pests away ✓✓
Building terraces and stone lines to conserve soil and water resources ✓✓
To keep a balance in the soil nutrients available ✓✓
To make the most of sun and water ✓✓
To give farmers several sources of income from a variety of agriculture products✓✓
Subsidised foods ✓✓
Household food production programme ✓✓
Making more land accessible for farming ✓✓
[ANY TWO] (2 x 2) (4)

3.6

3.6.1 PWV/ Gauteng Industrial Area ✓ (1 x 1) (1)

3.6.2 Gauteng ✓ (1 x 1) (1)

3.6.3 Chemical industries ✓
Iron and steel ✓
Metal processing ✓
Explosives ✓
[ANY TWO] (2 x 1) (2)

3.6.4 Dense population / Local market / Big cities ✓✓
Dense network of roads and railways / N1 / N3 / N14 ✓✓
Large labour force / Many settlements ✓✓
Abundant raw materials / Mining ✓✓
Adequate rainfall for water supply / Vaal River / Vaal Dam / Limpopo River ✓✓
Electricity is relatively cheap since coal is mined nearby (Mpumalanga)✓✓
[ANY TWO] (2 x 2) (4)

3.6.5 Over-utilization of water in Vaal river ✓✓
Discharge of pollutants from industries affects water quality in rivers, dams, lakes and ground water supplies ✓✓
Air pollution caues a brown haze(smog) over the region that affects the health of people ✓✓
Drop in tourism as a result of polluted rivers , dams and lakes ✓✓
High maintainance costs to purify polluted water ✓✓
Distance from nearest port ✓✓
Contaminated ground water ✓✓
Acid mine drainage ✓✓
Many large trucks and equipment on the roads increasing traffic congestion ✓✓
[ANY FOUR] (4 x 2) (8)

[75]

QUESTION 4

4.1

4.1.1 E ✓ (Low order centre)

4.1.2 A ✓ (Urban hierarchy)

4.1.3 G ✓ (Threshold population)

4.1.4 I ✓ (Range)

4.1.5 H ✓ (Low order service)

4.1.6 C ✓ (High order centre)

4.1.7 D ✓ (Sphere of infuence))

4.1.8 F ✓ (Central place) (8 x 1) (8)

4.2

4.2.1 Informal sector ✓

4.2.2 Quaternary activity ✓

4.2.3 Light industries ✓

4.2.4 Bridge industries ✓

4.2.5 Import substitution ✓

4.2.6 Footloose industries ✓

4.2.7 Raw-material orientated ✓ (7 x 1) (7)

4.3

4.3.1 Movement of people from rural areas to urban areas ✓
[Concept] (1 x 1) (1)

4.3.2 Not enough jobs ✓
Few opportunities ✓
Lack of food ✓
Shortage of land ✓
Political fears ✓
Difficult conditions ✓
[ANY ONE] (1 x 1) (1)

4.3.3 Buildings and farms have been abandoned ✓
Place is looking deserted ✓
Trees have been cut down / Fuel resources reduced ✓
Lack of people in rural areas ✓
[ANY ONE] (1 x 1) (1)

4.3.4 Lack of housing/informal settlements ✓✓
High prevalence of crime / Social evils ✓✓
Traffic congestion causing delays and frustrations ✓✓
Insufficient services to cater for the increasing urban population ✓✓
Uncontrollable waste management ✓✓
Overcrowding and the lack of space ✓✓
Breakdown of values, customs and traditions ✓✓
Limited employment opportunities ✓✓
Limited access to education and medical care✓✓
Family unit separated ✓✓
[ANY THREE] (3 x 2) (6)

4.3.5 Rural areas produce food ✓✓
Increase in food production stabilises food prices✓✓
Influences the GDP of the country ✓✓
Produce raw materials for industries ✓✓
Creates employment ✓✓
Utilise resources and services ✓✓
Allows for infrastructure development ✓✓
[ANY THREE] **(Accept examples**) (3 x 2) (6)

4.4

4.4.1 An unplanned (illegal) settlement with no basic services provided ✓
[Concept] (1 x 1) (1)

4.4.2 The use of highly flammable energy ✓✓
Fuel sources that are not stored properly ✓✓
Close proximity of dwellings ✓✓
Highly flammable building material ✓✓
Use of illegal electricity connection ✓✓
Not safe for emergency vehicles to enter because of exposed electricity cables ✓✓
[ANY ONE] (1 x 2) (2)

4.4.3 Settlement has no proper infrastructure example roads ✓✓
Lack of planning (no street names) ✓✓
Roads are impassable (boulders and furrows) ✓✓
Lack of proper telecommunication service ✓✓
No proper water sources for fire emergency ✓✓
High crime rate e.g. (emergency vehicles hijacked, communal tap fittings are stolen)✓✓
[ANY TWO] (2 x 2) (4)

4.4.4 **SHORT TERM**

Provision of tarred roads ✓✓
Provision of water points ✓✓
Electrification of areas ✓✓
Regular refuse removal/prevents burning ✓✓
Consult community stake holders ✓✓

LONG TERM

Provision of proper low-cost housing/RDP ✓✓
Provision of electricity in the form of solar panels ✓✓
Provision of proper infrastructure ✓✓
Job creation to increase standard of living ✓✓
Site and service facilities ✓✓
[ACCEPT FOUR - MUST REFER TO BOTH ASPECTS] (4 x 2) (8)

4.5

4.5.1 20% ✓ (1 x 1) (1)

4.5.2 South Africa has an abundance of mineral resources ✓✓
Great demand for South Africa's mineral for export ✓✓
Raw material supplier for secondary industry ✓✓ (2 x 2) (4)
[ANY TWO]

4.5.3 Large reserve of minerals ✓✓
Large variety of high grade minerals ✓✓
Availability of large labour force ✓✓
Advanced infrastructure available ✓✓
Foreign investors in South Africa provide capital ✓✓
Variety of minerals to be exploited in South Africa ✓✓
Advanced technology available for mines ✓✓
Government assist smaller, private mines ✓✓
Local and foreign market available for minerals ✓✓
Energy/electricity available that is close to mining areas ✓✓
Water for beneficiation/cooling and cleaning of machines ✓✓
[ANY THREE] (3 x 2) (6)

4.5.4 **<u>Negative effects</u>:**

Large quantities of water are required therefore less water available for other sectors ✓✓
Destroying of various ecosystems ✓✓
Air pollution due to dust/gases e.g. coal dust deposited on surrounding areas ✓✓
Air pollution due to gases released e.g. shaft mining ✓✓
Removal of natural vegetation with open cast mines ✓✓
Destroying of habitat of animals ✓✓
Pollution of underground water supplies resulting from acid mine drainage ✓✓
[ANY ONE]

<u>Solutions</u>:

Recycling of water ✓✓
Proper conservation and management of ecosystems✓✓
Using waste as raw material ✓✓
Transplanting or culturing any endangered plants found on site ✓✓
Use of solar power and wind turbines ✓✓
Reducing the amount of waste produced through process of re-engineering ✓✓
Have waste management plan in place ✓✓
Spraying of water to settle dust around mines✓✓
Revegetate areas✓✓
Cleaning up the sites of shut down mines ✓✓
Relocation of wild life into nature reserves ✓✓
Have plan to reduce acid mine drainage ✓✓
[ANY ONE] [EFFECT AND SOLUTION MUST BE LINKED] (2 x 2) (4)

4.6

4.6.1 Western Cape ✓ (1 x 1) (1)

4.6.2 **Secondary**

Fabrication workshop ✓
Oil lubricants and fuel plants ✓
(ANY ONE) (1 x 1) (1)

Tertiary

Equipment and repair services ✓
Specialised engineering services ✓
(ANY ONE) (1 x 1) (1)

4.6.3 The additional port facilities will result in more and larger ship arriving, thus increasing business in the area. ✓✓
High accessibility between inland and port encourages more investment. ✓✓
Tourism will benefit from improved infrastructure. ✓✓
(ANY TWO) (2 x 2) (4)

4.6.4 Create employment opportunities ✓✓
Increased buying power due to improved salaries ✓✓
Increases productivity of the region and GDP contribution ✓✓
Better standard of living (improves schools, medical facilities) ✓✓
Skills development to improve earning potential ✓✓
Will reduce rural-urban migration through development of rural areas✓✓
Local entrepreneurship encourages small business enterprise eg. barber✓✓
Small business development encourages local people to promote their arts and crafts to tourists ✓✓
(ANY FOUR) (4 x 2) (8)

[75]

TOTAL MARKS: 225