

GEOGRAPHY: PAPER I

MARKING GUIDELINES

Time: 3 hours

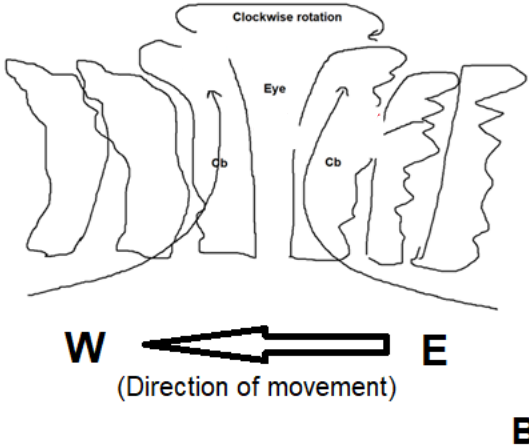
200 marks

These marking guidelines are prepared for use by examiners and sub-examiners, all of whom are required to attend a standardisation meeting to ensure that the guidelines are consistently interpreted and applied in the marking of candidates' scripts.

The IEB will not enter any discussions or correspondence about any marking guidelines. It is acknowledged that there may be different views about some matters of emphasis or detail in the guidelines. It is also recognised that, without the benefit of attendance at a standardisation meeting, there may be different interpretations of the application of the marking guidelines.

QUESTION 1 INTEGRATED QUESTION: MPUMALANGA, SOUTH AFRICA

1.1	Geographical Skills and Techniques											
1.1.1	Name the two countries that share a border with Mpumalanga	Mozambique and Eswatini (no mark for Swaziland)										
1.1.2	Name the national highway that connects Pretoria and Maputo.	N4										
1.1.3	What is the direction of Ermelo from Middleburg?	SE										
1.1.4	Rank the following GIS vector layers from top to bottom as they would appear in a GIS. Use the table below to complete your answer. PROVINCES / GAME RESERVES / TOWNS / TRANSPORT LINKS	<table><tr><td>Top Layer</td><td>Towns</td></tr><tr><td></td><td>Transport links</td></tr><tr><td></td><td>Game Reserves</td></tr><tr><td>Bottom Layer</td><td>Provinces</td></tr></table> Keep to the order as any changes to the bottom two layers would result in GIS not displaying correctly.	Top Layer	Towns		Transport links		Game Reserves	Bottom Layer	Provinces		
Top Layer	Towns											
	Transport links											
	Game Reserves											
Bottom Layer	Provinces											
1.2	Climate and Weather											
1.2.1	How many tropical cyclones preceded Freddy?	5										
1.2.2	List the damage caused by Cyclone Freddy to: (a) Infrastructure (b) People	(a) Ripping roofs off houses, storm surge, flooding. (b) Schooling suspended, transport suspended, one person died.										
1.2.3	(a) Explain why the tropical cyclone strengthened between 22–24 February. (b) With reference to the Figure 1.2B, provide evidence as to why this cyclone is located in the southern hemisphere.	(a) Tropical Cyclone Freddy traveled over the warm Mozambique channel, gaining energy from the warm water. Less friction than over land. (b) Mozambique / Madagascar visible; clouds rotating clockwise.										

1.2.4	Refer to Figure 1.2B, and draw an annotated cross section through Tropical Cyclone Freddy along the line marked A–B. You must label the following elements of the cyclone: Eye / direction of movement / wind direction / cloud types Direction of movement (1) can be awarded for clockwise rotation OR E to W movement			
1.2.5	Explain why countries such as Madagascar and Mozambique may experience more damage from tropical cyclones than the USA.	LEDCs are less wealthy; infrastructure is of a lower quality; emergency services are fewer; have less training and are not well funded, people are more vulnerable, warnings / evacuations are possibly delayed, and not as widespread; therefore, cannot reach everyone.		Any reasonable answer.
1.3	Geomorphology			
1.3.1	(a) Define the term <i>catchment area</i>. (b) Name the fluvial feature at sampling site S6.	An area of rainfall from which a river obtains its water. The area of land from which water flows into a river, lake, or reservoir. Confluence		
1.3.2	(a) In which general direction is the Blyde River flowing? (b) Provide ONE piece of evidence from Figure 1.3A to support your answer in Question 1.3.2 (a). (c) Name ONE tributary of the Blyde River.	N, NNW Angle of confluences points downhill – N. relief-flows from higher altitudes towards lower altitudes. Olifants / Makhutswi / Rietspruit / Ohrigstad.		

1.3.3	Figure 1.3B shows flow hydrographs measured along the course of the Blyde River. (a) Identify the location of each flow hydrograph labelled A and B in Figure 1.3A by referring to the sampling sites in Figure 1.3B. (b) Provide evidence from Figure 1.3B to support your answer in Question 1.3.3 (a). (c) Explain how the use of flow hydrographs can assist people in managing the drainage basin area in terms of water supply and flood control.	<table><tr><th>Sampling Sites</th><th>Hydrograph</th></tr><tr><td>S3</td><td>A</td></tr><tr><td>S7</td><td>B</td></tr></table> A – Shorter lag time; high flood peak = narrower valley and closer to source. B – Longer lag time = further downstream. Flow hydrographs can assist people to understand the likelihood and duration of floods; areas at risk can be identified and populations warned / evacuated; property can be protected.	Sampling Sites	Hydrograph	S3	A	S7	B	Any reasonable answer. Must refer to water supply AND flood control.
Sampling Sites	Hydrograph								
S3	A								
S7	B								
1.3.4	Figure 1.3C shows a section of the Blyde River at Bourke's Luck. (a) Identify the fluvial erosion features shown in the photograph. (b) Select the correct word from the options in bold that makes the following statement true. Write only the correct word in the space provided. This feature was created by erosion / deposition processes. (c) Explain how the river's load influences the formation of this fluvial feature visible in Figure 1.3C.	Potholes Erosion Pebbles and stones caught in the water swirl against the riverbed (abrasion) gouging out the potholes.							

1.4	Settlement Geography Terminology			
	Match the definitions in Column B with their corresponding terms in Column A. Write only the selected letter in the space provided, e.g. 1.4.1 M			
1.4.1	Ribbon development	C		
1.4.2	Urban hierarchy	F		
1.4.3	Green belt	A		
1.4.4	Invasion and succession	B		
1.4.5	Heavy industry	E		
1.5	Settlement Geography			
1.5.1	Identify the land uses on the map marked A to D.	A school / college / recreation / fields B residential, suburban housing C transport / railway / infrastructure D industry – manufacturing (light) / warehousing		
1.5.2	(a) Explain how the Facebook post benefits the residents of Mbombela. (b) With reference to Figure 1.5, discuss the potential difficulties the Rob Ferreira Hospital may experience on that day. (c) Suggest how a GIS can assist the above hospital in overcoming these difficulties.	It is useful in informing residents of potential traffic jams and allows them to plan alternative routes. Both major roads bordering the hospital are to be blocked off and so patients / general public / medical staff will have difficulty in accessing the hospital. This may prevent ambulances from getting to the hospital in an emergency. GIS can suggest alternate routes for the ambulances to access the hospital. Live tracking can indicate traffic jams. Estimated times for alternate routes can be provided. Provide information / data for traffic apps.		
1.5.3	Discuss the advantages of the location of the Pick 'n Pay shopping centre.	Highly visible to customers; crossroads of major transport routes; close to residential areas where customers live; accessible.		

1.6	Economic Geography											
1.6.1	(a)	People were drawn to Mpumalanga in the 1870s by the abundant hunting and gold mining. These activities fall into the following economic sector:	<table><tr><td>Primary</td><td>X</td></tr><tr><td>Secondary</td><td></td></tr><tr><td>Tertiary</td><td></td></tr><tr><td>Quaternary</td><td></td></tr></table>	Primary	X	Secondary		Tertiary		Quaternary		
Primary	X											
Secondary												
Tertiary												
Quaternary												
	(b)	In modern times, people are drawn to Mpumalanga for the hiking and fishing. These activities fall into the following economic sector:	<table><tr><td>Primary</td><td></td></tr><tr><td>Secondary</td><td></td></tr><tr><td>Tertiary</td><td>X</td></tr><tr><td>Quaternary</td><td></td></tr></table>	Primary		Secondary		Tertiary	X	Quaternary		
Primary												
Secondary												
Tertiary	X											
Quaternary												
1.6.2	(a)	Provide the latitude and longitude of this feature (Figure 1.6.1).	24.6728° S, 30.8071° E									
	(b)	Explain why this feature would be erected by Mpumalanga Tourism.	Tourists will take photos, good publicity, tag the location and post on social media thus providing free advertising to attract more tourists. Assist with GPS devices.									
1.6.3	Both photographs (Figures 1.6.3A and 1.6.3B) depict informal vendors in Mpumalanga.											
	(a)	Explain why these vendors are categorised as part of the informal economy.	Not formally registered; do not pay tax; unregulated.									
	(b)	Contrast the impact of the support supplied by Mpumalanga Tourism to the vendors in each of the images.	Figure 1.6.3A – vendors have formal buildings in which to display their wares. Protected from elements. Some attempt to 'formalise' informal trading. Figure 1.6.3B vendors have no protection apart from what they provide for themselves. More exposed to the elements.									

1.7	Economic – Extended Writing		
	- Please DO NOT tick when marking an essay – this confuses the checkers. - Rather, underline valid and appropriate points and use the code system	GEOGRAPHY ESSAY CODES E – Excellent G – Good V – Vague R – Repetition I – Irrelevant F – Fair CONTENT: _____ Underline relevant points if correct. Circle incorrect points EVIDENCE: () Bracket evidence	
	Write a geographical essay in which you evaluate the strengths and weaknesses of Mpumalanga's economic activities. Use the following subheadings in your essay: - Primary activities - Secondary activities - Energy supply - Imports and exports Writing skills - Take into consideration structure and presentation. - Use of a brief introduction and conclusion. - Logical discussion and use of subheadings.	Primary activities (4 marks) Numerous and varied mineral deposits, e.g. gold, platinum, chromite, zinc, cobalt, copper, iron and manganese, and coal (80% of SA's reserves). Agriculture includes pulp and paper resources, sugar, citrus fruit, vegetables, and forestry. Give % contribution. Secondary activities (4 marks) Secondary activities / manufacturing includes Sasol petrochemical production, McCain vegetables, Nestlé dairy and confectionary products, Mondi and Sappi paper products. Textiles are also produced. Evraz produces steel; Xstrata produces ferrochrome. PepsiCo Fertilisers, chemical cellulose. Energy supplies (4 marks) Energy supplies are provided by coal from the local mines. Also, gas is imported via pipeline from Mozambique. Eleven coal-fired power stations; electricity generation. Liquid petrochemical pipelines. Imports and exports (3 marks)	

	Supporting evidence – analysis and understanding • The ability to analyse and evaluate the topic is assessed in this category. • Reference must be made to case study material / fact file / source material. • If appropriate, reference must be made to familiar / local, or other examples.	The transport links, rail and roads provide excellent service in moving imports and exports through the region. All these activities support: • the export of coal, • generate revenue for the local economy, • support employment, • assists the provision and improvement of facilities and infrastructure, • support local businesses who in turn improve employment, and • generate tax revenue for provincial and national government. Ensure that marks are awarded for identifying strengths (elements that generate revenue and improve standards of living) as well as weaknesses (elements that detract from revenue generation and create barriers to development).		
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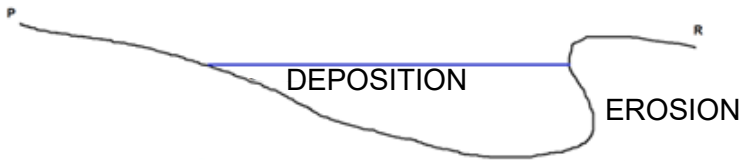
2.1	Physical Geography			
2.1.1	The term 'anti-cyclonic' refers to air that has the following characteristics in the southern hemisphere ... A stable, converging and rotating clockwise. B unstable, converging and rotating anti-clockwise. C unstable, diverging and rotating clockwise. D stable, diverging and rotating anti-clockwise.	D		
2.1.2	The term 'isohyet' defines a line that joins places of the same ... A air pressure. B rainfall. C altitude. D temperature.	B		
2.1.3	The term which best describes a wind blowing from a consistent direction is a ... A gradient wind. B geostrophic wind. C prevailing wind. D anabatic wind.	C		
2.1.4	A tropical cyclone is associated with ... A heavy rainfall, high wind speeds and storm surge. B heavy rainfall, low wind speeds and storm surge. C low rainfall, low wind speeds and storm surge. D low rainfall, high wind speeds and storm surge.	A		
2.1.5	A katabatic wind occurs during the ... A night and blows uphill. B day and blows uphill. C night and blows downhill. D day and blows uphill.	C		

2.2	Sub-tropical Anticyclones																			
	(a) From the list below, select the correct label for the lines marked A and B on the synoptic chart. RIDGE, TROUGH, TROPICAL CYCLONE, MID-LATITUDE CYCLONE (b) Select the correct weather conditions experienced in Cape Town as a result of the sub-tropical anticyclone to the south. Circle the correct answer in the table below. <table><tr><th>WEATHER</th><th>OPTION 1</th><th>OPTION 2</th><th>OPTION 3</th></tr><tr><td>AIR MOVEMENT</td><td>STABLE, DESCENDING, CLOCKWISE</td><td>RISING, UNSTABLE, CLOCKWISE</td><td>STABLE, DESCENDING, ANTICLOCKWISE</td></tr><tr><td>HUMIDITY</td><td>DECREASING</td><td>REMAINS THE SAME</td><td>INCREASING</td></tr><tr><td>AIR TEMPERATURE</td><td>DECREASING</td><td>REMAINS THE SAME</td><td>INCREASING</td></tr></table> (c) Explain how the weather conditions selected in Question 2.2 (b) encourage the incidence of fires in the area. (d) Explain how climate change is promoting a greater incidence of fires in the area.	WEATHER	OPTION 1	OPTION 2	OPTION 3	AIR MOVEMENT	STABLE, DESCENDING, CLOCKWISE	RISING, UNSTABLE, CLOCKWISE	STABLE, DESCENDING, ANTICLOCKWISE	HUMIDITY	DECREASING	REMAINS THE SAME	INCREASING	AIR TEMPERATURE	DECREASING	REMAINS THE SAME	INCREASING	A TROUGH B RIDGE Warming air, low humidity, dry conditions, windy conditions spread flames. No chance of rain. Longer and hotter summers, drier winters, and prolonged periods of drought, more heat waves, reduced rainfall, greater climate extremes. Effects of HP / anticyclonic system.		
WEATHER	OPTION 1	OPTION 2	OPTION 3																	
AIR MOVEMENT	STABLE, DESCENDING, CLOCKWISE	RISING, UNSTABLE, CLOCKWISE	STABLE, DESCENDING, ANTICLOCKWISE																	
HUMIDITY	DECREASING	REMAINS THE SAME	INCREASING																	
AIR TEMPERATURE	DECREASING	REMAINS THE SAME	INCREASING																	

	(e) Evaluate the effectiveness of using remote sensor technology, such as the satellite image, in fighting the spread of the fires.	Remote sensing can identify sources of flames and direct firefighters more efficiently. Infrared images see through smoke to identify sources. Sensors can indicate wind direction and so help with prevention of fire spread. Could assist with dispatching helicopters dropping 'water bombs', determining where to 'back burn'.		
2.3	Valley Climates			
2.3.1	In which season does Stellenbosch receive most of its annual rainfall?	Winter		
2.3.2	With reference to the photograph, Figure 2.3B, name the wind that will blow during the night and early hours of the morning as indicated by the arrow.	Katabatic		
2.3.3	What potential threat does this wind pose to the farm?	Cold winds can damage / destroy crops. Bring freezing conditions. In summer, warm / dry winds could dry out grapes; could spread fires.		
2.3.4	Suggest a possible solution a farmer can implement to protect their crop from the winds.	Plant trees as a wind break / cover fruit with netting at night.		

2.4	Fluvial Geomorphology																																			
2.4.1	Terminology Select the correct definition for the following terms. Write only the letter of the correct answer in the space provided below. <table><thead><tr><th>NUMBER</th><th>DEFINITION</th><th>LETTER</th><th>TERM</th></tr></thead><tbody><tr><td>1.</td><td>The upper surface of underground water.</td><td>A</td><td>Rejuvenation</td></tr><tr><td>2.</td><td>The volume of water that passes a point on the river course in a certain time.</td><td>B</td><td>Confluence</td></tr><tr><td>3.</td><td>Relationship between length of stream and area of drainage basin.</td><td>C</td><td>Water table</td></tr><tr><td>4.</td><td>Process where a river regains energy through isostatic uplift.</td><td>D</td><td>Turbulent flow</td></tr><tr><td>5.</td><td>Water with many vertical and horizontal eddies caused by obstructions in the channel.</td><td>E</td><td>Discharge</td></tr><tr><td></td><td></td><td>F</td><td>Drainage density</td></tr><tr><td></td><td></td><td>G</td><td>Infiltration</td></tr></tbody></table>	NUMBER	DEFINITION	LETTER	TERM	1.	The upper surface of underground water.	A	Rejuvenation	2.	The volume of water that passes a point on the river course in a certain time.	B	Confluence	3.	Relationship between length of stream and area of drainage basin.	C	Water table	4.	Process where a river regains energy through isostatic uplift.	D	Turbulent flow	5.	Water with many vertical and horizontal eddies caused by obstructions in the channel.	E	Discharge			F	Drainage density			G	Infiltration	1 C 2 E 3 F 4 A 5 D		
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2.4.2	Refer to Figure 2.4.2, the topographic map extract of the region near Franschhoek, Western Cape, South Africa. (a) Explain the hairpin bends in the road, indicated by the letter 'P'. (b) Describe the drainage density of the area displayed in the map (Figure 2.4.2). (c) Identify the stream pattern within the rectangle in Figure 2.4.2. (d) Account for your answer in Question 2.4.2 (c) by providing evidence from the map. (e) Based on your answer in Questions 2.4.2 (d), describe the underlying geology of the area. (f) Provide TWO pieces of evidence from the map to indicate that rainfall is not all year round.	Road is doubling back as a result of the steep gradient. Follows contours as closely as possible. Best route keeping gradient in mind for cars. Low density / coarse. Trellis / dendritic. Trellis: Long primary stream with tributaries joining at right angles owing to fold mountains. In places streams are flowing parallel to one another. Dendritic: tributaries join at acute angles; treelike pattern. Fold mountain ranges – long valleys / uniform rock type. Non-perennial streams / many reservoirs and dams to store water.		
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	(g) Refer to the line Q–R where it crosses the meander of the Dutoitsrivier. (i) In the space below, draw a sketch cross section from Q to R. (ii) On your sketch's channel cross section, indicate the areas of erosion and deposition. 			
2.4.3	(a) The photograph (Figure 2.4.3) was taken in the middle course of the river. Provide evidence from the photograph to support this statement.	Broad channel / flood plain / laminar flow / heavy load / murky water / no evidence of turbulent flow.		
	(b) With reference to the above photograph (Figure 2.4.3), suggest TWO reasons why this river is advantageous for farming.	Flat / flood plain / good for cultivation / fertile soil from river (alluvium) deposition / dense vegetation indicates fertility.		

3.1	Settlement (rural and urban) and Economic Geography			
	State whether the following statements are TRUE or FALSE.			
3.1.1	A dry point settlement is found in an area where water is plentiful.	TRUE		
3.1.2	The pattern of an urban settlement is always dispersed.	FALSE		
3.1.3	A specialist concentration is also referred to as 'functional magnetism'.	TRUE		
3.1.4	Intensive farming is most commonly practiced in high rainfall areas.	TRUE		
3.1.5	A settlement that services the surrounding rural area can be called a 'gap town'.	TRUE		
3.2	Rural Settlement			
3.2.1	Identify the settlement pattern illustrated in this photograph.	Dispersed / isolated		
3.2.2	List TWO advantages and TWO disadvantages of this settlement pattern.	Advantages Independence / sole profit / no sharing of decision-making / privacy / peace and quiet. Disadvantages Increased vulnerability / distance from services and stores / isolation, security risk / can't ask neighbours for assistance or to use equipment.		Any reasonable answers. (2 marks each)
3.2.3	With reference to the photograph (Figure 3.2), explain how the topography of the land has promoted the intensive farming of nuts.	Flat ground allows for easy access and the entire plot of land to be used. Easy to cultivate land, harvest nuts, e.g. use of tractors, sprayers, etc.		

3.3	Urban Hierarchies			
	Refer to Figure 3.3, which shows the spheres of the influence of three towns.			
3.3.1	(a) The RANGE / THRESHOLD POPULATION refers to the distance a customer is prepared to travel to purchase a product or service.	RANGE		
	(b) HIGH / LOW order functions are frequently used and are usually at a low cost.	LOW		
	(c) THRESHOLD POPULATION / SPHERE OF INFLUENCE describes the minimum number of customers required for a business to operate successfully.	THRESHOLD POPULATION		
3.3.2	(a) Discuss TWO advantages of shopping at Fourways Mall in comparison to Coachman's Crossing.	Greater variety of shops / one-stop event / higher order goods and low order goods present / more parking available / can compare prices between shops / more entertainment options, restaurants, etc.		Discuss – must have detail of each of two advantages. (2 × 2)
	(b) Explain why customers will still frequent the Coachman's Crossing centre.	For low order goods / more convenient shopping during a commute than having to go into a large mall. May be closer to where they live / may offer special deals to attract customers / familiarity – shop keepers know their customers.		
3.4	Informal Settlements			
	Refer to Figure 3.4, which shows Diepsloot, an informal settlement on the northern outskirts of Johannesburg, Gauteng, South Africa.			
3.4.1	List TWO urban problems evident in the photograph (Figure 3.5).	Litter / lack of water / lack of electricity / unsafe homes / overcrowding / no sewerage system / no waste removal.		
3.4.2	Suggest ONE solution to one of the problems you identified in Question 3.4.1.	Must link to answer in Question 3.4.1.		Must link to answer in 3.4.1.

3.5	Economic Terminology			
3.5.1	Forestry is an example of a ... activity. A primary B secondary C tertiary D quaternary	A primary		
3.5.2	An iron-ore smelter is classified as a ... industry. A light B heavy C footloose D ubiquitous	B heavy		
3.5.3	A break of bulk point describes the process where ... A minerals are refined to remove impurities. B crops are processed to make food products. C finished products are packaged for sale. D there is a change in the mode of cargo transport.	D there is a change in the mode of cargo transport.		
3.5.4	The process of a country's government taking ownership of industries or farms is known as ... A nationalisation. B monoculture. C magnetism. D privatisation.	A nationalisation.		
3.5.5	Cooperative farming refers to the practice of ... A a government controlling agricultural activities. B farmers pooling resources such as the purchase of seeds and fertilisers. C production of biofuels and other sustainable energy sources. D using genetically modified seeds to increase resistance to drought.	B farmers pooling resources such as the purchase of seeds and fertilisers.		

3.6	Informal Economy			
	Refer to Figure 3.6, an infographic of South Africa's informal economy.			
3.6.1	Distinguish between the formal and the informal economy.	Formal – registered / pays tax / has contracts with employees. Informal – unregistered / frequent use of cash rather than electronic banking / pays no tax / employs casual labour.		
3.6.2	From the infographic, Figure 3.7, rank the top THREE contributing sectors to the informal economy.	• FMCG superettes mobile, etc., R180B. • Taverns R110B. • Catering Kasi Kos Amplati and Kota catering, R90B.		
3.6.3	Discuss TWO advantages of the informal economy for the population of a southern African country.	People can be employed without formal contracts / cash is easy to use / products are easily accessible / flexibility / income generator / goods close to where people live / prices may be more affordable than in formal shops / creates employment / stimulates the economy.		Credit all geographically correct answers.
3.6.4	Explain why most governments do not restrict the growth of the informal economy, despite not gaining a direct financial benefit from this sector.	Products reach people / people support themselves and generate livelihoods / less social pressure on government for support. Credit all relevant responses.		

3.7	Transport Infrastructure			
	Refer to Figure 3.7, the map of the boundary between the Eastern Cape and Kwazulu-Natal and the photograph of the Msikaba Bridge.			
3.7.1	Why will the Masikaba Bridge make travel time between Durban and East London shorter?	Distance is shorter (by 80 km) as the route is more direct, no need to travel inland via Kokstad.		
3.7.2	Why does this benefit the economies of Durban and East London?	Shorter travel time / lower transport costs / more efficient / goods are sold sooner / link urban – rural areas – good for business.		
3.7.3	Predict the effect of the construction of the bridge on the economy of Kokstad.	Kokstad will be bypassed so its services will be less frequently used. Lower income and stagnation in its economy.		
3.7.4	The multiplier effect explains how one project can have many other socio-economic benefits for the region. Discuss how the construction of the Msikaba Bridge improves the standards of living the surrounding communities.	While the bridge is being built, labourers require housing – more construction companies engaged. More retailers / services in the area to sell goods to labourers – improves income and employment rates. Roads and other infrastructure are upgraded – more employment and revenue generated.		Credit any geographically relevant point.

Total: 200 marks