



Mark Scheme (Results)

Summer 2018

Pearson Edexcel GCSE

In Geography Spec B (1GB0) Paper 1

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General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

Mark Scheme

Question number	Answer	Marks
1a(i)	<p>A - a liquid layer of 2200km in thickness.</p> <p>Incorrect responses:</p> <p>B - a solid layer with temperatures over 5000° Celsius. The outer core is labelled as being liquid.</p> <p>C - a layer of partly molten and partly solid rock. The outer core is labelled as being liquid.</p> <p>D - a solid layer of 1300km in thickness. The outer core is labelled as being liquid.</p>	1
1a(ii)	<p>C - inner core.</p> <p>Incorrect responses:</p> <p>A, B and D.</p> <p>Density generally increases with depth. The inner core is the layer with the highest density being made mainly of iron and nickel and solid. The outer core is also primarily iron and nickel but as it is molten that lessens the density.</p>	1
1b(i)	<p>Award 1 mark for identifying a physical process causing a tsunami and a further mark for explanation.</p> <ul style="list-style-type: none"> ● Tsunami can be caused by earthquakes (1) caused by plate movement. (1) ● Tsunami can be caused by landslides (1) which causes water to be displaced generating waves. (1) ● Tsunami can be caused by underwater volcanic eruptions (1) which causes water to be displaced giving large waves. (1) ● Tsunami can be caused by large meteor strikes (1) which displaces large quantities of water causing large waves. (1) ● Upward movement of a tectonic plate (1) causing the movement of water. (1) ● The movement of plates (1) causes friction to occur (1) ● Earthquakes (1) transfer energy to the water causing it to move. (1) <p>No mark for simply stating tsunami are large waves. Accept any other appropriate response.</p>	2
1b(ii)	<p>C - destruction of buildings.</p> <p>Incorrect responses:</p> <p>A, B and D</p> <p>These are all secondary tectonic hazards.</p>	1
1c(i)	Award one mark for each descriptive point up to a maximum of 3 marks.	3

	<ul style="list-style-type: none"> ● Carbon dioxide concentrations / mean temperatures fluctuate over the period. (1) ● The trends have a similar pattern. (1) ● Trend in carbon dioxide described (may use numeric data). ● Trend in temperature described (may use numeric data). ● As the concentrations of carbon dioxide rise so do the temperatures in Antarctica. (1) ● There has been an increase in the mean temperature/carbon dioxide ppm over the period. (1) <p>Do not accept mirrored answers. Max 2 marks if only one trend is described. Max 2 marks if no use of data. Data may be manipulated to score marks. For example, ‘the CO2 concentration increased by 140 ppm over the period.’</p> <p>Accept any other appropriate response.</p>	
1c(ii)	<p>Allow 1 mark for identifying a natural cause of climate change and a further mark for explanation.</p> <ul style="list-style-type: none"> ● Volcanic eruptions (1) cause cooling as incoming solar radiation is blocked by volcanic dust. (1) ● Asteroid collisions (1) can cause cooling as large quantities of ash and dust to be kicked up into the atmosphere. (1) ● Increased/decreased sunspots/solar flare activity (1) cause warmer/cooler periods as more/less solar energy is released towards the earth. (1) ● Changes in the earth’s orbit / Milankovitch cycles (1) can cause cooling or warming of the earth as the amount of solar radiation received by earth varies. (1) ● Volcanic eruptions (1) can lead to a warming of the earth as more carbon dioxide is released. (1) <p>Accept any other appropriate response.</p>	2
1d	<p>C - recorded wind speeds.</p> <p>Incorrect responses:</p> <p>A - satellite imagery. This makes no contribution to Saffir-Simpson scale data</p> <p>B - seismometer readings. These focus on tectonic activity.</p> <p>D - thermometer readings. The Saffir-Simpson scale categorises tropical cyclones according to their wind speed.</p>	1

1e(i)	<p>Allow 1 mark for each correctly identified feature increasing Haiti's vulnerability and further mark for how this contributes to Haiti's vulnerability, up to a maximum of two marks each.</p> <ul style="list-style-type: none"> ● Haiti has a low GDP (1), therefore the population is less able to afford housing that can withstand extreme events (1), less able to purchase resources needed for disaster response (1), less likely to have insurance policies that help people to recover (1), less likely to have technology to help to alert the population (1). ● Haiti has a low HDI (1), the population are less likely to be educated regarding hurricane preparation (1). ● Most of Haiti is a short distance from the coast (1) which means that it is difficult to evacuate. ● The path of the storm was forecast to hit Haiti in the next 24 hours (1) with the observed location on Oct 3rd being less than 200km away from Haiti (1). <p>Do not accept mirrored answers. Must use Figure 3.</p> <p>Accept any other appropriate response.</p>	4
1e(ii)	<p>Allow one mark for each correctly identified reason why GIS storm track maps can be useful and a further 1 mark for why this feature is useful for preparation, up to a maximum of 2 marks each:</p> <ul style="list-style-type: none"> ● Shows the intensity of wind speed (1) so measures can be put in place to evacuate people (1). ● Shows the speed the storm is moving (1) so populations can be given accurate predictions of when the storm will impact (1). ● Historical data can show the likely track taken by storms (1) so potential areas affected can be identified and measures put in place (1). ● Shows coastal areas which may be affected by storm surges (1) so that appropriate evacuation measures can be put in place (1). ● Enables countries to predict the path of the tropical storm (1) so they know which areas to evacuate. (1) <p>Accept any other appropriate response.</p>	4
1f	<p>Award one mark for Identification of one legitimate area of low pressure and high rainfall e.g. ITCZ (accept equator) or Ferrell/Polar cell boundary at 60 degrees N/S (1).</p> <p>Award one mark for the mechanism for air rising e.g. 'hot air at tropics' or warm/cold air convergence at Ferrell/polar boundary (1).</p> <p>Award one mark for the mechanism that creates rain - rising air = condensation, cloud (1).</p> <ul style="list-style-type: none"> ● The ITCZ/equator is a low pressure area with high rainfall totals (1). Here, warm air rises (1), cools and clouds are created (1). ● A further area of low pressure is found at around 60°N and S of the equator (1). Warmer air rises as it meets colder air (1), and water vapour condenses (1). ● At the equator (1), less dense air rises (1), cools and condenses giving rain (1). <p>Give credit to diagrams taking care not to double credit.</p>	3

1g	<p>AO2 (4 marks) / AO3 (4 marks)</p> <p>AO2 (4 marks)</p> <ul style="list-style-type: none"> ● Developed nations governments are able to provide large amounts of monetary assistance and rapidly mobilise the military to assist the area. E.g. the US government had mobilised 58000 National Guard troops and provided \$62.3bn aid for victims. ● Due to higher levels of development, governments are often able to mobilise medical experts, search and rescue equipment and staff trained in emergency disaster management to aid those affected. ● Accurate tracking of cyclones in developed nations enables a coordinated evacuation programme. ● Emergency accommodation can be rapidly deployed to aid victims although often not enough is supplied by government authorities. ● The international community often responds rapidly to such events. Over 70 countries pledged monetary assistance to the USA following Katrina with NGO's such as the Red Cross providing assistance. ● Following accurate tracking of a cyclone, governments are able to action such as raising sluice gates. <p style="text-align: center;">Expect students to make the distinction between the short-term and long-term responses of a tropical cyclone to access 4 marks in AO2.</p> <p>AO3 (4 marks)</p> <ul style="list-style-type: none"> ● Judgement regarding the effectiveness of the evacuation procedures. For example, the evacuation order of New Orleans was not passed until less than 24 hours before Hurricane Katrina made landfall. ● Judgement regarding the speed of the government response. ● Judgement regarding the effectiveness of restoring basic needs for the population. ● Judgement regarding the effectiveness of disaster management procedures e.g. The New Orleans Superdome was designed to accommodate 800 people whereas over 20,000 arrived). ● Judgement regarding the effectiveness of technology to predict cyclone landfall - developed nations often have many satellites although the US did have many older satellites, some of which had stopped working. ● Judgement about the effectiveness of subsequent preparation measures put in place following a cyclone event e.g. levee height has been raised around New Orleans to protect from a future storm surge. ● Judgement about the effectiveness/ineffectiveness of other response strategies put in place. 	8
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Level	Mark	Descriptor
	0	<ul style="list-style-type: none"> • No acceptable response
Level 1	1-3	<ul style="list-style-type: none"> • Demonstrates isolated elements of understanding of concepts and the interrelationships of places, environments and processes. (AO2) • Attempts to apply understanding to deconstruct information but understanding and connections are flawed. <p>An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3)</p>
Level 2	4-6	<ul style="list-style-type: none"> • Demonstrates elements of understanding of concepts and the interrelationship of places, environments and processes. (AO2) • Applies understanding to deconstruct information and provide some logical connections between concepts. <p>An imbalanced argument that synthesises mostly relevant understanding but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3)</p>
Level 3	7-8	<ul style="list-style-type: none"> • Demonstrates accurate understanding of concepts and the interrelationship of places, environments and processes. (AO2) • Applies understanding to deconstruct information and provides logical connections between concepts throughout. <p>A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout (AO3)</p>

Question number	Answer	Marks
2a(i)	<p>A - the total value of goods and services produced within a country during one year.</p> <p>Incorrect responses: B,C,D.</p> <p>GDP is a monetary measure of the value of goods and services produced by a country in a given year. The distractors all refer to a combination of imports and exports.</p>	1
2a(ii)	<p>C - the average number of years attending school.</p> <p>Incorrect responses:</p> <p>A - refers to maternal mortality. B - refers to the fertility rate. D - refers to the economically active population.</p>	1
2b	<p>Award 1 mark for correctly identifying life expectancy as a component of the HDI, and a further mark for explanation of life expectancy or its link to human health.</p> <ul style="list-style-type: none"> ● HDI measures life expectancy (1) which is the average number of years a person is expected to live (1) ● Life expectancy (1) gives an indication of the level of access to health services (1). ● Life expectancy (1) will be influenced by the % of the population with access to safe water (1). ● HDI measures life expectancy (1) a high life expectancy indicates a healthy population (1). <p>Accept any other appropriate response.</p>	2
2c	<p>Award one mark for correctly identifying an obstacle/enabler to development posed by topography and further marks for the explanation of that point up to a maximum of three marks.</p> <ul style="list-style-type: none"> ● The steep relief of mountainous areas (1) makes the construction of transport routes difficult (1) which reduces trade with other areas (1). ● Topography makes growing crops difficult (1) as farm vehicles find it difficult to operate (1), reducing people's income (1). ● Steep slopes (1) are not attractive locations for industry/infrastructure (1) reducing employment / income generation opportunities (1). ● Areas which are flat (1) are often attractive to industrial development (1) creating jobs / increasing income generation opportunities (1). ● Mountain areas are often isolated (1) due to a lack of transport infrastructure (1) making trade with other areas difficult (1). ● Mountainous areas have reduced temperatures/thin soils (1) which makes the growing of crops difficult (1) limiting the ability of the population to earn income (1). ● Harbours with deep water (1) can lead to increased amounts of trade (1) attracting industry to the area (1). <p>Accept any other appropriate response.</p>	3
2d(i)	\$85.2 billion, accept 85.2.	1

2d(ii)	Allow 1 mark for a calculation format showing knowledge of percentage increase. Difference between two figures / by original figure x 100). 1 mark for answer of 211.5%.	2
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2e	<p>Award 1 mark for identification of a disadvantage, and a further two marks for explanation of this reason, up to a maximum of 3 marks.</p> <ul style="list-style-type: none"> ● Local people’s needs are not adequately considered (1). For example, the Three Gorges Dam project in China forced 1.3 million people to leave their homes (1) breaking up many communities (1) ● By not fully understanding local people’s needs (1), large energy generations projects such as dams can flood farmland (1), causing the loss of valuable farmland (1). ● By disrupting the migration of fish (1), the construction of dams has reduced the population of certain species (1) disrupting food chains (1). ● Growth poles take resources away from peripheral areas (1), creating inequalities (1) and fuelling rural-urban migration (1). ● Top down strategies are often expensive (1), requiring countries to borrow large amounts of money (1) and getting into debt problems (1). ● Funding top-down projects requires large amounts of money (1) which requires external borrowing (1) with conditions often attached to these loans (1). ● Local people’s viewpoints are not taking into consideration (1) which can cause resentment of the strategy (1) and lead to protests / riots (1) ● The local people do not get what they want (1) because the project is run by the government (1). This means that it is rarely used by the community (1). <p>Accept any other appropriate response.</p>	3
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2f(i)	Award 1 mark for any of the following: 5.5:1 550 to 100 55:10 550:100 110:20 (or 110 to 20) 22:4 (or 22 to 4) 11:2 (or 11 to 2)	1
2f(ii)	Award one mark for the identification of a suitable data presentation technique and a further mark for how it would show the increasingly urban nature of China's population. <ul style="list-style-type: none"> ● A line graph could be constructed (1) with lines drawn showing the urban and rural change over time with dates on the x axis (1). ● A bar chart could be constructed (1) with the urban population figures on the y axis and the years data on the x axis (1). ● Three compound bar graphs could be drawn for each year (1) showing the increasing urban / decreasing rural population over time (1). ● Line graphs (1) could be used to show how the urban/rural population changes over time (1). ● Pie charts (1) could be drawn for each year showing the changing percentages of rural/urban populations over time (2). <p>Accept any other appropriate response.</p>	2
2f(iii)	Award one mark for identifying a negative impact on human health and a further mark for explanation of this impact, up to a maximum of two marks. Must have cause and effect. <ul style="list-style-type: none"> ● A major problem in urban areas is air pollution caused by vehicle emissions/industrial activity/power generation/waste generation (1) This causes many health problems such as heart disease/lung disease/bronchitis (1). ● Water pollution is caused by the unsafe disposal of sewage / groundwater pollution from pit latrines / industrial discharge / agricultural runoff (1). This causes cholera/ dysentery/ typhoid (1). ● Increased agricultural runoff (1) can lead to cancers (1). ● Global climate change (1) has resulted in extreme heat and depletion of water sources (1). ● Urban medical services are being overrun (1) due to increasing migration to urban areas (1). ● Increasing disposable income (1) is leading to obesity (1). ● Increased car ownership (1) leads to air pollution (1). <p>Accept any other appropriate response.</p>	2

2f(iv)	<p>Award 1 mark for correctly identifying a socio-economic difference (up to 2 marks) with further marks for explanations of the difference. The answer will largely depend on the chosen emerging country but differences could include:</p> <ul style="list-style-type: none"> ● Examples of socio-economic differences that could be identified - Population density and rates of growth, average income levels, ethnic differences, migration history and trends, levels of economic growth and structure, health and education provision. (max 2 marks) ● Reasons given to explain the differences - geographic location/isolation and the ease of historical trade, differences in land fertility and topography, the development of industry and the cycle of growth idea, a flow of skilled labour to the core, government policies. (max 2 marks). <ul style="list-style-type: none"> ● In India, Maharashtra has a higher population density than Bihar (1). Mumbai is in Maharashtra which attracts migrants from rural areas for work (1). ● Shanghai has a higher population density than Gansu (1), Shanghai's coastal location has seen it grow as an important port attracting workers (1). <p>Do not credit very generic differences such as the core is rich and the periphery is poor.</p> <p>Accept any other appropriate response.</p>	4
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2g	<p>A02 4 marks / A03 4 marks</p> <p>A02 4 marks</p> <ul style="list-style-type: none"> ● TNC investment / outsourcing creates employment and taxes being paid to the host government, boosting GDP. ● Tax revenue is invested in the local economy resulting in rising living standards. ● TNC's often take advantage of tax incentives, minimising the economic benefit to the host country. ● Globalisation creates increased employment opportunities and brings foreign currency to the host country. ● TNC investment / outsourcing results in advances in communication and transport technology. For example, new companies often develop transport links in the local area. ● TNC's can compete unfairly with indigenous companies. ● Outsourcing leads to TNC's exploiting cheap labour with local people often badly paid. ● Globalisation enables workers to migrate more easily. Some emerging countries find it difficult to keep their best skilled workers, who are attracted by higher wages elsewhere e.g Indian doctor migration to the UK. ● FDI can result in the transfer of managerial expertise from developed to emerging economies. ● Emerging economies are more affected by the global economic cycle. For example, a deep recession in developed nations will effect emerging economies. The global credit crunch had a very damaging impact on emerging countries' economies. ● TNC's are footloose and globalisation means that they can transfer their business out of an emerging country to another location at any time. <p>A03</p> <ul style="list-style-type: none"> ● Some areas may benefit economically from globalisation whereas others lose out, for instance, the concentration of TNC's in urban areas can lead to increased regional differences between core and periphery areas. ● Comments regarding the income inequalities caused by globalisation at a local (city-wide) and national level. ● Makes judgement regarding the overall economic contribution of TNC's. For example, many profits from foreign TNC's often return to developed nations with little overall economic benefit in emerging countries. ● The impacts from such globalisation are often linked. For example whereas government/TNC investment may create growth poles in one area this may be to the detriment of peripheral areas leading to increased rates of rural-urban migration. ● Overall evaluation as to whether the economic costs or benefits are more significant drawing upon evidence. 		8
Level	Mark	Descriptor	
	0	<ul style="list-style-type: none"> ● No acceptable response 	
Level 1	1-3	<ul style="list-style-type: none"> ● Demonstrates isolated elements of understanding of concepts and the interrelationships of places, environments and processes. (A02) ● Attempts to apply understanding to deconstruct information but understanding and connections are flawed. <p>An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (A03)</p>	
Level 2	4-6	<ul style="list-style-type: none"> ● Demonstrates elements of understanding of concepts and the interrelationship of places, environments and processes. (A02) 	

		<ul style="list-style-type: none"> • Applies understanding to deconstruct information and provide some logical connections between concepts. <p>An imbalanced argument that synthesises mostly relevant understanding but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3)</p>
Level 3	7-8	<ul style="list-style-type: none"> • Demonstrates accurate understanding of concepts and the interrelationship of places, environments and processes. (AO2) • Applies understanding to deconstruct information and provides logical connections between concepts throughout. <p>A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout (AO3)</p>

Marks for SPGST		
Performance	Marks	Descriptor
SPaG 0	0	<p><i>No marks awarded</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Learners write nothing. <input type="checkbox"/> Learner's response does not relate to the question. <input type="checkbox"/> Learner's achievement in SPaG does not reach the threshold performance level, for example errors in spelling, punctuation and grammar severely hinder meaning.
SPaG 1	1	<p><i>Threshold performance</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Learners spell and punctuate with reasonable accuracy. <input type="checkbox"/> Learners use rules of grammar with some control of meaning and any errors do not significantly hinder meaning overall. <input type="checkbox"/> Learners use a limited range of specialist terms as appropriate.
SPaG 2	2-3	<p><i>Intermediate performance</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Learners spell and punctuate with considerable accuracy. <input type="checkbox"/> Learners use rules of grammar with general control of meaning overall. <input type="checkbox"/> Learners use a good range of specialist terms as appropriate.
SPaG 3	4	<p><i>High performance</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Learners spell and punctuate with consistent accuracy. <input type="checkbox"/> Learners use rules of grammar with effective control of meaning overall. <input type="checkbox"/> Learners use a wide range of specialist terms as appropriate.

Question number	Answer	Marks
3a	<p>D - an increasing proportion of a country's population living in urban areas.</p> <p>Incorrect responses:</p> <p>A - refers to suburbanisation B - refers to counter-urbanisation C - the process of urbanisation refers to an increasing proportion of a population living in urban areas, not necessarily an increasing number. This distractor also purely focuses on city-centre locations.</p>	1
3b(i)	<p>Accept any of the following characteristics of informal employment:</p> <ul style="list-style-type: none"> ● Income is not taxed (1). ● Activities are not recognised by the government (1). ● People work for themselves (1). ● Low-skilled work (1). ● May be at home or on the streets (1). ● No health and safety protection (1). ● Little capital needed to establish business (1). ● No contract (1). ● Not legal (1). ● No insurance (1). ● No sick pay (1). <p>Accept any other appropriate response.</p>	1
3b(ii)	<p>Award one mark for correctly identifying that there are often an insufficient number of job opportunities being created in the formal sector and a further mark for explanation. Must have the idea of why the informal sector is growing rapidly to gain the 2nd mark.</p> <ul style="list-style-type: none"> ● There are not enough jobs in the formal sector (1) to cater for rapid population growth caused by migration (1). ● Jobs in the formal sector are not being created quickly enough (1) to cope with the high rates of rural-urban migration (1). ● Large numbers of rural migrants (1) have a skill shortage for formal employment in the city (1). <p>Accept any other appropriate response.</p>	2
3c (i)	<p>Location X - C - Residential. Location Y - D - Commercial.</p> <p>Incorrect responses:</p> <p>Location X - A,B,D,E</p> <p>The satellite image shoes a suburban street pattern indicating residential land use. The correct answer is therefore C.</p> <p>Location Y - A,B,C,E</p> <p>The satellite image shows a high density concentration of buildings and the key indicates that this is the central business district of Sunderland. The correct answer is D as CBD's are dominated by commercial land use.</p>	2

3c (ii)	Award one mark for each correctly described feature of the location of Sunderland's CBD up to a maximum of 3 marks.	3
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	<ul style="list-style-type: none"> • The CBD is found close to the coast/harbour/bridge/River Wear (1), in the East/South-East of the city (South-East corner of the map.) (1) • The CBD is found to the South of the River Wear (1). • The CBD is found approximately 2km (1) to the South-East of the new Wear crossing (1). • The CBD is found approximately 4km (1) to the East of the A19 (1) <p>Maximum 1 mark for proximity to a feature. Do NOT credit descriptions of the situation of the CBD. 'It is surrounded by housing'. Accept any other appropriate response.</p>	
3c (iii)	<p>Award one mark for identifying a factor influencing the location of the IAMP, and a further mark for extension of that factor, up to a maximum two marks each.</p> <ul style="list-style-type: none"> • The IAMP is located close to the A19 (1), so that manufactured goods can be transported easily to other parts of the country (1). • The IAMP is located next to the Nissan Car Plant (1). This may help as manufacturing resources/expertise can be shared (1). • The IAMP is located on the outskirts of the city (1), it is a large site so low cost land will be important (1). • The IAMP is close to the proposed new River Wear crossing (1), better transport links will make it easier to transport manufactured goods to other parts of the country (1). • The IAMP requires a large site (over 5km²) (1), the proposed edge of city location has a large amount of available land (1). • Government incentives (1) may encourage industry to locate in the area (1) • The area is a greenfield site (1) which is less expensive to build on (1). <p>Accept any other appropriate response.</p>	4
3d (i)	<p>Award one mark for demonstrating understanding of calculating the mean of the population growth of the three South American cities. Allow one calculation format (addition of three figures) division by 3 (1).</p> <p>Final answer is 15.3% or 15.3 (1).</p>	2
3d (ii)	<p>Award one mark for identifying a social challenge caused by the rapid rates of growth and further marks for explanation of the social challenges caused by the rapid rate of growth, up to a maximum of three marks.</p> <ul style="list-style-type: none"> • Housing shortages (1) result in people living in squatter settlements (1) without access to basic services (1) • The majority of employment in developing country megacities is in the informal sector (1), workers have no protection (1) and work is irregular/hours are long (1). • Increased air pollution (1) caused by traffic congestion/increasing vehicle emissions/ineffective regulations (1) causes serious health issues including breathing disorders (1) • Low percentages of people are connected to public sewer systems (1). Septic tanks and pit latrines can overflow into open drains (1) which leads to the spread of disease (1). • Residential land is too expensive for many people (1). Many are forced into crowded slums (1) with poor access to basic services (1). • Job shortages (1) as a result of large numbers of migrants (1) with the city not having enough formal employment (1) 	3

	<ul style="list-style-type: none"> • The overuse of groundwater supplies (1) leads to water shortages (1) and can lead to subsidence (1) • Rapid rates of growth exceed the ability of local authorities to provide services (1) such as an adequate water supply (1), leading to the spread of disease (1) <p>Accept any other appropriate response</p>	
3e (i)	<p>Accept any one from:</p> <ul style="list-style-type: none"> • Rural - urban migration (accept migration, in-migration or immigration) (1). • Natural increase (1). <p>Pull factors such as:</p> <ul style="list-style-type: none"> • More job opportunities (1). • Better educational prospects (1) • Better access to healthcare (1) <p>Push factors such as:</p> <ul style="list-style-type: none"> • Drought (1) • Lack of investment (1) • Commercialisation of agriculture (1) <p>Accept any other appropriate response</p>	1
3e (ii)	<p>Award one mark for identifying an indicator of quality of life and further marks for explaining why it varies.</p> <ul style="list-style-type: none"> • There are income variations within Mexico City(1) with high levels in La Condensa compared to Neza (1). The lack of a formal education can prevent residents accessing formal sector work (1). • Levels of pollution can vary between residential areas (1). Air (water) pollution is often higher close to industrial areas (1) this negatively impacts on human health. • The quality of housing shows large variations (1), shanty towns are found on areas of marginal land (1) often with a lack of basic sanitation facilities (1) • Higher quality housing (1) is often found close to the central business district (1) therefore there is a wider range of amenities (1) <p>Max 2 marks if the answer is generic and makes no reference to residential areas in the megacity.</p> <p>Allow any other acceptable response.</p>	3

3e (iii)	<p>A02 (4 marks) / A03 (4 marks)</p> <p>Expect many candidates to discuss top-down and bottom-up development projects.</p> <p>A02 (4 marks)</p> <ul style="list-style-type: none"> ● Sustainability involves meeting the needs of the present without compromising the ability of future generations to meet their needs. ● Sustainability can be measured in terms of social, economic and environmental costs and benefits. ● Sustainability can be viewed as a quadrant focussing on equality, the future, public participation and environmental impact. ● Details of social, economic and environmental impacts of the chosen strategies. <p>A03 (4 marks)</p> <ul style="list-style-type: none"> ● Judgement regarding overall social sustainability - whereas top down-projects often fail to fully consider the needs of local people, bottom-up strategies tend to inherently consider their needs. ● Bottom-up strategies whilst often being more sustainable often benefit a smaller number of people whereas top-down projects may have a huge impact - over 100 million people are protected by flooding by the Three Gorges Dam. ● Judgement regarding overall economic sustainability - Huge cost involved in top-down strategies. For example, the government-led Dharavi redevelopment project cost an estimated \$2bn. Such projects often result in overseas debt from the loans borrowed to fund schemes. ● Judgement regarding overall environmental sustainability - In Rio de Janeiro, the BYD electric buses are zero emission and have led to significant reductions in particulate matter along the Water to Santa Carioca line. ● Judgement about which factor has the greatest influence on sustainability. <p>Accept any other appropriate response</p>	8
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Level	Mark	Descriptor
	0	<ul style="list-style-type: none"> • No acceptable response
Level 1	1-3	<ul style="list-style-type: none"> • Demonstrates isolated elements of understanding of concepts and the interrelationships of places, environments and processes. (A02) • Attempts to apply understanding to deconstruct information but understanding and connections are flawed. <p>An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (A03)</p>
Level 2	4-6	<ul style="list-style-type: none"> • Demonstrates elements of understanding of concepts and the interrelationship of places, environments and processes. (A02) • Applies understanding to deconstruct information and provide some logical connections between concepts. <p>An imbalanced argument that synthesises mostly relevant understanding but not entirely coherently, leading to judgements that are supported by evidence occasionally. (A03)</p>
Level 3	7-8	<ul style="list-style-type: none"> • Demonstrates accurate understanding of concepts and the interrelationship of places, environments and processes. (A02) • Applies understanding to deconstruct information and provides logical connections between concepts throughout. <p>A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout (A03)</p>