Mark Scheme (Results)

Summer 2023

Pearson Edexcel GCSE
In Geography B (1GB0)
Paper 01: Global Geographical Issues

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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.

<table>
<tr><th>Question number</th><th>Answer</th><th>Marks</th></tr>
<tr><td>1a (i)</td><td>B. 60°N and 0°

All other answers are incorrect.
The equator has the highest rainfall totals. Here, rising water vapour produces high rainfall totals. At 60°N, rainfall totals are also high due to rising air water vapour at the junction of the Polar and Ferrel cells.</td><td>1</td></tr>
<tr><td>1a (ii)</td><td>Cell X is the Polar cell.
Cell Y is the Hadley cell.

Accept either the correct names of the cells (as below)

<table>
<tr><th>Location</th><th>Atmospheric cell</th></tr>
<tr><td>X</td><td>Polar</td></tr>
<tr><td>Y</td><td>Hadley</td></tr>
</table>

or

<table>
<tr><th>Location</th><th>Atmospheric cell</th></tr>
<tr><td>X</td><td>A</td></tr>
<tr><td>Y</td><td>E</td></tr>
</table>

All other answers are incorrect.</td><td>2</td></tr>
</table>

1b	Allow 1 mark for identifying a source of historical information which provides evidence for climate change and further marks for explanation. ● Records of sea levels (1) can show us evidence of ice melt / warmer oceans (1) and subsequent sea level rise (1). ● Ice cores (1) can be analysed to determine the amount of carbon dioxide in them (1). Higher concentrations of carbon dioxide are associated with warmer / inter-glacial periods (3). ● Tree rings can be analysed (1) with the width between them telling us about past climates (1). A larger distance between the rings indicates a hotter / wetter period / higher carbon dioxide levels (1). ● Historical records such as diaries / newspapers / paintings (1) detailing frost fairs on the River Thames / difficult farming periods (1) may inform us of warmer and cooler periods (1). ● Diaries / newspapers / journals (1) inform us about conditions at the time (1) enabling us to compare former conditions to current conditions 1) ● U-shaped valleys (1) show evidence of previous glaciation (1), indicating the climate in the UK was much colder than present (1). ● Pollen analysis (1) can inform us of ancient plant types no longer existing in an area (1) which are suited to growing in climates very different from those found today (1). ● Historic data on carbon dioxide concentrations can be studied (1). Higher concentrations are associated with inter-glacials / warmer periods (1), lower concentrations are associated with glacial / cooler periods (1). ● Historic temperature data (1) can be compared to current day temperatures (1) indicating warmer / cooler periods (1). ● Rock type / geology (1) provide evidence of sediment deposited by shallow seas (1) which has subsequently risen due to climate change (1). **Accept any other appropriate response.**	3

1c	Award 1 mark for correctly naming the type of volcano. Note that answers may relate to the shape of the volcano **or** the fact that the volcano is clearly active. For example… ● Composite. ● Stratovolcano. ● Active. ● Explosive. **Note: Do not accept steep or conical.** **Accept any other appropriate response.**	1
1d	A – Conservative plate boundaries is the correct answer as volcanoes do not occur at this boundary type. All other answers are incorrect. B – Hotspots is incorrect. Here, volcanoes typically have basaltic magma resulting in shield volcanoes such as Mauna Loa, Hawaii. C – Convergent boundaries is incorrect. Here, volcanoes typically have andesitic magma resulting in stratovolcanoes or composite volcanoes. D – Divergent plate boundaries is incorrect as volcanoes in these locations predominantly have basaltic magma producing shield volcanoes such as Eyjafjallajökull.	1

1e	Allow 1 mark for correctly identifying a reason why some earthquakes are destructive and further marks for explanation of that reason. ● Some earthquakes have a high magnitude (1) this results in lots of energy being released (1) which can cause huge amounts of damage to buildings / property (1). ● High magnitude earthquakes (1) can cause buildings to collapse (1) causing people to die (1). ● Some earthquakes impact countries with a low level of development / lack of financial resources (1). In such locations, a lack of building regulations (1) results in large amounts of building collapse (1). ● The level of preparation is important (1). Areas which have money to invest in aseismic buildings (1) can significantly reduce the amount of building collapse in the event of an earthquake (1). ● Earthquakes can produce avalanches / landslides (1) resulting in destruction of nearby settlements (1) causing people to die (1). ● Some earthquakes have a shallow focus (1) this means that the energy released has a short distance to travel (1) causing large amounts of damage on the surface (1). ● The distance from the epicentre can be important (1). Areas close to the epicentre may experience powerful seismic waves (1) resulting in buildings collapsing (1). ● Some earthquakes can have several aftershocks (1). This further weakens buildings which are already damaged (1) resulting in their collapse (1). ● Earthquakes under the sea can produce tsunamis (1), this is due to an upward thrust of the sea bed / causing the displacement of water (1) causing damage to coastal settlements (1). ● Some earthquakes can affect densely populated areas (1). Densely populated areas can be vulnerable to damage to collapsing buildings (1) and emergency services may be overwhelmed (1).	3

	● The time of day can be important (1). If an earthquake occurs at night, more people will be in their homes (1) and be vulnerable to building collapse (1). ● The weather / time of year can be important (1). If people become homeless (1) they may be exposed to frostbite / hypothermia (1). **Note: Do not credit lack of money or significant financial resources unless accompanied by an explanation as seen in example 3 above.** **Allow any other appropriate response.**	
1f (i)	B – Bangkok (10.45 million) All other answers are incorrect.	1
1 f (ii)	Award 1 mark for candidates calculating that 87% of 117 billion is 101.79 billion. (1) Award a further mark for deducting 101.79 billion from 117 billion = 15.21 billion. (1) **Also allow 15.2 or 15 as the correct answer.** There are several routes to the correct answer of 15.21 billion. 117 billion/100 = 1.17 billion. 1.17 x 87 = 101.79 billion (1) 117 billion – 101.79 billion = 15.21 billion (1) OR Award 2 marks to candidates who identify a reduction of 87% from the 2020 figure equates to 13% remaining. 117 billion x 0.13 (1) = 15.21 billion (1) 117 x (1-0.87) (1 mark) = 15.21 (1)	2

1 g	Award 1 mark for identifying a condition which is required for the formation of tropical cyclones and a further mark for explanation up to a maximum of 2 marks for each explanation. ● A warm ocean / ocean with a temperature over 26.5°/27°C (1) results in formation of a warm body of air / causes warm air to rise (1). ● Warm sea temperatures (1) provide the cyclone with energy (1). ● Strong winds in the upper atmosphere / troposphere (1) result in warm air to rising rapidly from the ocean (1). ● Tropical cyclones require a rotational force / the Coriolis force (1). This means they form away from the equator (1). ● Winds that do not vary greatly with height / a low wind shear (1) allows the storm clouds to rise to a great height (1). ● Converging winds near the ocean surface (1) forcing air to rise and form storm clouds (1). ● High levels of humidity in the lower atmosphere (1), can results in rapid convection (1). Accept any other appropriate response.	4

1h	Award 1 mark for identifying a reason why some countries have a high level of vulnerability and a further mark for explanation up to a maximum of 2 marks for each explanation. ● Some countries lack the finances to put adequate protective measures in place (1). ● In poorer countries (1) the population may be less prepared for a tropical cyclone (1). ● Poorer countries (1) are often more vulnerable as buildings may be poorly constructed (1). ● Poorer countries may suffer from a lack of emergency services (1). ● Some countries lack satellite technology (1) due to a lack of money (1). ● Some countries lack infrastructure (1) to alert their citizens to oncoming cyclones (1). ● Countries with access to satellite technology (1) can alert their population when a tropical cyclone is due to make landfall (1). ● Countries lacking financial resources (1) struggle to construct storm-surge defences (1). ● Low lying countries (1) are vulnerable to storm surges / coastal flooding (1). ● Countries which are isolated (1) may find it difficult to receive aid (1). ● Countries with large numbers of people living in coastal areas are vulnerable to the impact from storm surges / coastal flooding (1). ● An elderly / ageing population (1) may find it difficult to evacuate (1). ● The population may lack access to information relating to the cyclone (1) therefore may not evacuate in time (1). ● Some locations have removed natural defences such as mangroves (1) leaving themselves vulnerable to the coastal flooding / storm surges (1). **Note: Either two well-explained social reasons, two well-explained economic reasons or one social reason and one economic reason are all equally valid ways to achieve 4 marks.** **Additionally, reasons to do with the physical geography of countries (for example their low-lying nature) should be credited as they do create social/economic vulnerability.** **Accept any other appropriate response.**	4

1i	A02 4 marks / AO3 4 marks **AO2 4 marks** ● Human activities such as industry, transport, energy production and farming produce greenhouse gases such as carbon dioxide and methane that have enhanced the greenhouse effect leading to global warming. ● Greenhouse gases trap heat in the atmosphere, acting like a blanket and lead to increases in the temperature of the Earth. ● Greenhouse gases can be produced by both human activity and natural causes. Carbon dioxide, methane and nitrous oxide occur naturally in the atmosphere although human activity has significantly enhanced their concentration. Other greenhouse gases such as chlorofluorocarbons (CFCs) are only produced by human activity. ● In recent times, human activities have had a significant impact on climate change and the associated enhanced greenhouse effect. ● Variations in solar output can take place due to sunspot activity. ● Increased sunspot activity has been recorded in periods of increased temperatures with decreased sunspot activity being recorded in cooler periods of the Earth's history. ● Periods of increased volcanic activity have been associated with periods where there has been a reduction in global temperatures as a consequence of ash clouds reflecting solar energy. ● In the long-term, research has suggested that volcanic activity can have a warming effect due to the emission of carbon dioxide, contributing to the greenhouse effect. ● Milankovitch cycles have also been attributed to changes in the earth's climate. ● Changes in the Earth's orbit, the Earth's tilt and the Earth's wobble have resulted in variations in the amounts of solar energy reaching the Earth's surface. ● Large asteroid collisions cause dust particles to be transferred to the upper atmosphere, reducing the amount of solar radiation reaching the Earth's surface leading to a cooling effect. ● More recently, human activities have had a significant impact on climate change and the associated enhanced greenhouse effect. **AO3 (4 marks)** ● Judgement regarding the significance of various human activities and their impact on rapidly rising concentrations of greenhouse gases. ● Judgement regarding the significance of the various causes of natural climate change. ● Judgement regarding the longer-term historical significance of natural causes versus the more recent contribution of human activity to climate change. ● Judgement regarding the significance of natural causes of climate change versus more the more recent contribution of humans to climate change. ● Assessment of the view, with supporting and counterarguments.	8

Level	Mark	Descriptor
	0	● No acceptable response
Level 1	1-3	● 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. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3)
Level 2	4-6	● 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. An imbalanced argument that synthesises mostly relevant understanding but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3)
Level 3	7-8	● 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. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout (AO3)

2a (i)	D – Malaysia. All other answers are incorrect.	1

2a (ii)	Award 1 calculation mark for the mean calculation (addition of the five GDP per capita values and division by five) and a further mark for the correct answer given to one decimal place. 20,363 / 5 (1) = 4072.6 (1). 2608 + 1547 + 2270 + 3526 + 10,412 / 5 (1) = 4072.6 (1)	2
2a (iii)	Award 1 mark for the identification of a suitable data presentation technique and another mark for description of the technique. ● A bar chart (1) with countries along the x-axis and literacy rate % on the y-axis (1). ● A choropleth map(s) (1) with shading showing literacy rates for 2011 and 2020 (1). ● A line graph (1) with literacy rates on the y-axis and a line representing each country (1). ● A divided bar chart (1) with literacy rates on the y-axis and countries on the x-axis (1) Note: Candidates may draw an example of a data presentation technique rather than provide a written answer. If the technique is valid and both axis are labelled accurately then award two marks. **Accept any other appropriate response.**	2

2a(iv)	Award one mark for identification of a reason why literacy rates may be improving and a further mark for explanation of that reason. ● Improved access to education (1) results in a improved school attendance (1). ● More money will be spent on schools / training teachers (1) meaning more children can attend school (1). ● Improving women's rights (1) results in a greater proportion of girls attending school (1). ● In some areas, improved literacy has been a focus for charities (1) resulting in additional resources being invested in this area (1) ● Governments are investing more in education (1) building more schools (1). **Accept any other appropriate response.**	2
2b	Award one mark for identifying an advantage of development work led by Non-Governmental Organisations (NGO's) and further marks for explaining why this is advantageous. ● Local needs are met (1) directly improving the quality of life (1). ● NGO led development often involves consultation with local people (1) this helps to directly address locals needs (1) improving their living conditions (1). ● NGO development focuses on local needs (1) improving their living conditions (1). ● Development of this kind makes use of intermediate / appropriate technology (1) this can more easily be used by local people (1) and can be repaired if it breaks down (1). ● This approach is low-cost (1) and is more affordable to poorer communities (1) avoiding the need to take costly loans (1). ● These projects have less of an impact on the environment (1) as they are smaller in scale (1) and have require less construction / building materials (1). **Accept any other appropriate response.**	3
2c (i)	C – 38% All other answers are incorrect.	1

2c (ii)	Award one mark for correctly calculating the difference between the 2010 and 2020 service industry figures. 14% (1). There is no need to show working out, but it's calculated this way. 2010 service industry percentage is 34%. In 2020, it is 48%. 48% - 34% = 14% Note : Some candidates may calculate the difference as a percentage increase. Please accept such answers. For example….. 48-34 = 14. 14/34 x 100 = 41.18% (1) or rounded to one decimal place = 41.2% (1).	1
2d	Award 1 mark for identification of a reason why the percentage of people employed in agriculture decreases as a country develops and further marks for explanation of this reason. ● More people work in factories (1) as these jobs are often higher paid (1). ● Industrialisation occurs (1) resulting in more people moving into manufacturing jobs (1) ● As a result of increased mechanisation (1), less workers are needed in agriculture (1). ● There is a move from jobs in the primary to secondary / tertiary / quaternary sector (1) as these jobs are often higher paid (1). ● As the wealth of the population increases (1) there is more demand for financial services (1). ● Food is increasingly imported from overseas (1) meaning fewer farmers are required (1). ● Investment from TNC's (1) which offer higher paid salaries than those available in agriculture (1). ● Salaries in manufacturing / service industries may be higher than agriculture (1) resulting in people seeking employment in these sectors (1) ● Rural – urban migration occurs due to opportunities in urban areas (1) as a result of investment in creating alternative job opportunities (1). **Accept any other appropriate response.**	4

2e	Award 1 mark for identification of a reason why greenhouse gas emissions may change as a country undergoes economic development and award further marks for explanation of this reason. ● More money leads to the increased usage cars (1). This results in more petrol / fossil fuels being burnt (1) ● More money is available to invest in renewable technology (1). Meaning less fossil fuels are burnt (1). ● Countries may reduce the burning of fossil fuels (1) and adopt more renewable energy (1). ● Environmental laws/legislation (1) encouraging the use of cleaner technology (1). ● Increasing awareness of the health impacts of emissions (1) can encourage the public to put pressure on governments to reduce emissions (1). ● Environmental pressure groups (1) can influence the behaviour of governments to reduce emissions (1). ● More money is available to invest in manufacturing industries (1) leading to increasing consumption of fossil fuels (1). ● Countries with an absence of strong environmental laws (1) may become attractive destinations for polluting TNCs (1). ● Moving from an economy based mainly on agriculture to one based on manufacturing (1) will increase the burning of fossil fuels (1). ● Deindustrialisation (1) leads to fewer fossil fuels being burnt (1). Note: It is valid for candidates to argue that countries may reduce pollution as they move from a manufacturing to service-based economy or increase pollution as they move from an economy based mainly on agriculture to one with an increasing focus on manufacturing. Do not credit more money in isolation. This needs to be expanded with what the money is being used for as shown in examples 1 and 2. **Accept any other appropriate response.**	2

2f	Award 1 mark for identification of a way the international role of a named emerging country has changed and a further mark for explanation. ● China / India has become a hugely important trading partner for many countries (1) due to its skilled workforce / good infrastructure (1). ● China / India has attracted a large number of TNCs / FDI (1) who are attracted by its cheap labour / well-educated population (1). ● More trade as a consequence of globalisation (1) has established more links with other countries (1). ● India is taking a more important role in global efforts to reduce greenhouse gas emissions (1). It has done so by making commitments to global climate targets (1). ● India has increased its contribution of soldiers to UN peacekeeping missions (1) and is the largest contributor of any nation in the world (1). ● India now donates more aid than it receives (1) as a result of rapid improvements to its GDP (1). ● China has made significant investments in many African nations (1). This has resulted in infrastructure improvements (1). ● China / India is a leader in the space race (1) and has launched many satellites into space (1). ● An increasing number of companies from China/India have entered the Fortune 500 (1) as a consequence of their increasing profits (1). ● China and India are members of the G20 (1) a group of countries responsible for stabilising the global economy (1). ● Nigeria has become an important trading partner for China (1) who have invested billions in infrastructure developments in the country (1). ● Nigeria has increased its participation in UN peacekeeping missions (1) contributing large numbers of troops to improve security in other countries (1). **Accept any other appropriate response.**	4

2g	**AO2 4 marks / AO3 4 marks** **A02 4 marks** ● India has a dominant position in the Indian Ocean which offers it close contact with the Middle East, Africa and Europe from its west coast whereas its east coast gives it trade opportunities with the Asian Tigers in South Eastern Asia. ● India acts as a transit point connecting sea routes from Europe with countries in South Eastern Asia. ● India has a huge coastline which facilitates trade with other nations. ● Other historical factors have been important in the development of India. Colonialisation exploited the Indian economy resulting in India becoming an exporter of cheap raw materials. ● Economic liberalisation in India in 1991 resulted in the rapid expansion of foreign direct investment. Whereas this policy has been credited with significantly reducing poverty, it has also been argued it has increased inequality and worsening rural living standards. ●The Himalayan Mountain range acts as a barrier to land-based trade between India and China. ● India has a tense relationship with neighbouring Pakistan with the two countries in conflict over Kashmir. ● In recent years, India has proven to be an attractive destination for investment from TNCs due to its educated workforce, relaxation of corporate taxes and increasingly developed infrastructure. ● The development of India has not been even with more favourably located coastal areas such as Mumbai becoming attractive destinations for TNCs whereas inland India has remained relatively undeveloped. ● Significant differences in development exist between regions of India. Bihar's landlocked location discourages foreign direct investment as there is no access to the coast to directly export goods. ● China's location with a huge eastern seaboard has enabled it to become a major exporter of products to the rest of the world and an attractive destination for TNCs. ● China's position, with a coastline on the Pacific Ocean is strategically important giving it access to the American markets. ● China's is in close proximity to rapidly growing markets in South Eastern Asia. ● Whereas China's eastern seaboard has developed rapidly in recent years, development has not been even with inland China's development lagging behind areas with a more favourable coastal location.	8

	AO3 4 marks ● Judgement regarding the overall importance of the emerging country's location in its development. ● Judgement regarding the overall importance of the emerging country's location, evaluating positive and negative aspects. ● Judgement regarding the importance of other factors influencing the development of the emerging country. ● Judgement regarding the relative importance of other factors influencing the development of the emerging country versus the importance of its location.	

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Level 1	1-3	● 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. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3)
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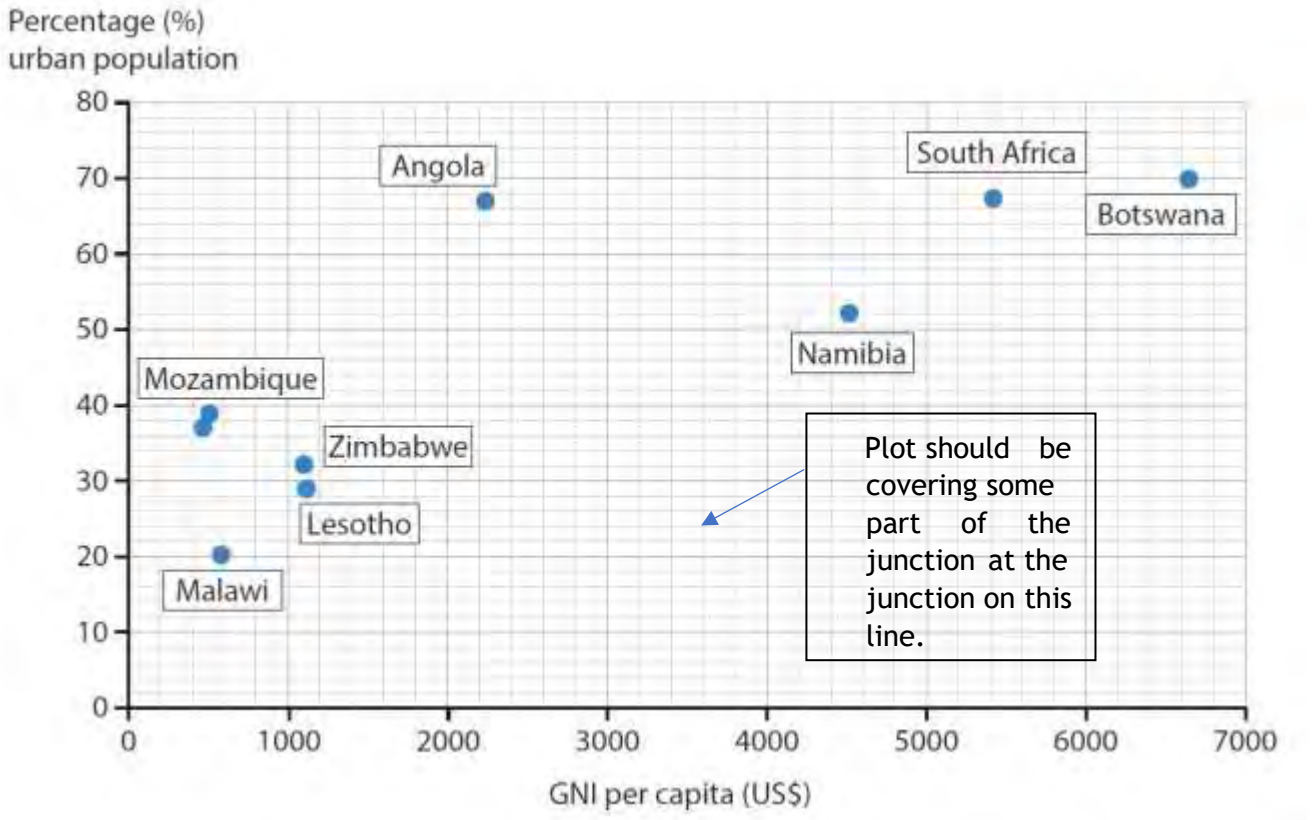
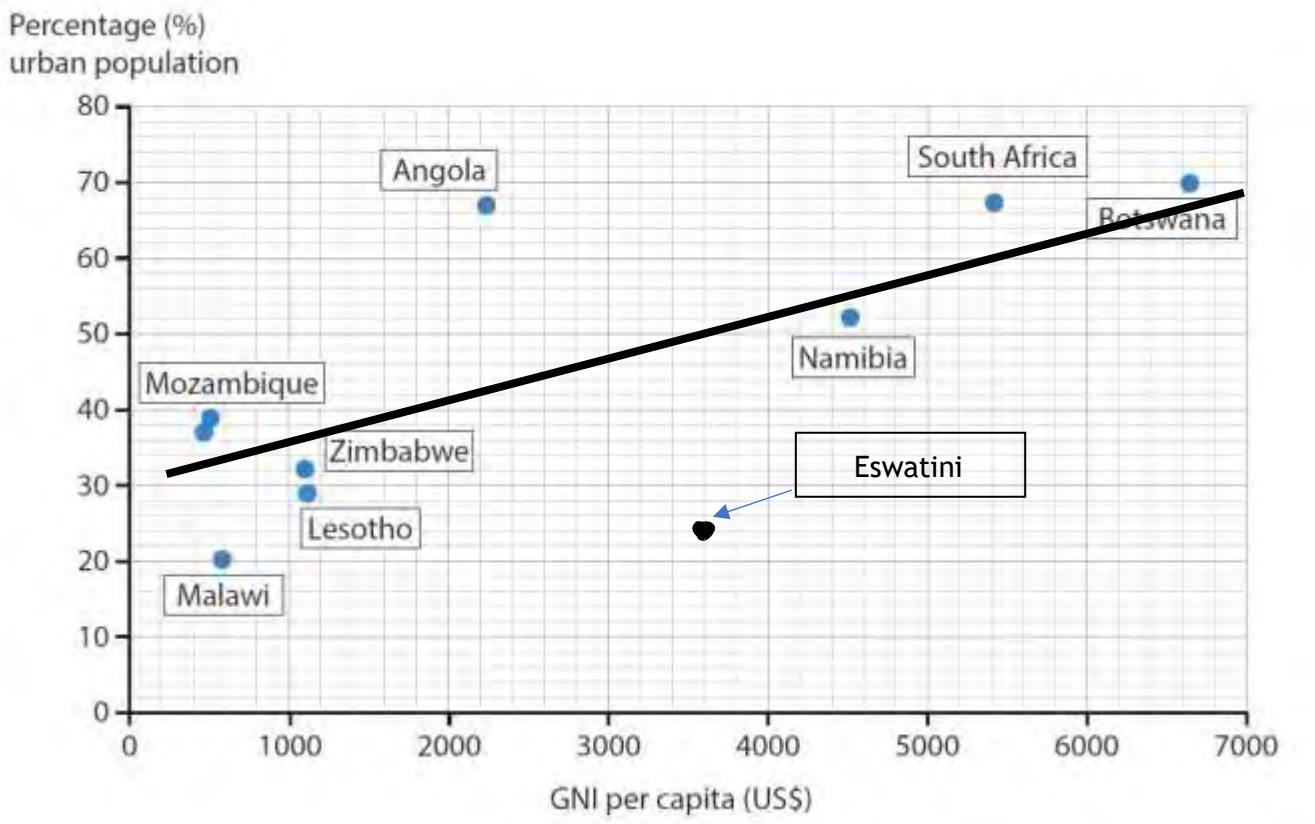
Performance	Marks	Descriptor
SPaG 0	0	*No marks awarded* ● Learners write nothing. ● Learners response does not relate to the question. ● Learners achievement in SPaG does not reach the threshold performance level, for example severe errors in spelling, punctuation and grammar severely hinder meaning.
SPaG 1	1	*Threshold performance* ● Learners spell and punctuate with reasonable accuracy. ● Learners use rules of grammar with some control of meaning and any errors do not significantly hinder meaning overall. ● Learners use a limited range of specialist terms as appropriate.
SpaG 2	2-3	*Intermediate performance* ● Learners spell and punctuate with considerable accuracy. ● Learners use rules of grammar with general control of meaning overall. ● Learners use a good range of specialist terms as appropriate.
SpaG 3	4	*High performance* ● Learners spell and punctuate with considerable accuracy. ● Learners use rules of grammar with effective control of meaning overall. ● Learners use a wide range of specialist terms as appropriate.

3a (i)	B – The movement of people towards the edge of a city. All other answers are incorrect. A is the definition for rural to urban migration. C refers to movement between cities. D is the definition for re-urbanisation.	1
3a (ii)	Award one mark for identifying a reason why people are moving out of urban areas and a further mark for explanation of that reason. Typically, the reason identified will be a rural pull or urban push factor. ● Housing in rural areas is often cheaper (1) which causes people to leave expensive locations near the centre of the city (1). ● Housing in city centre / urban locations is often expensive (1) which causes people to move to cheaper locations in rural areas (1). ● Land prices are high in urban areas (1) therefore people cannot afford to live there (1). ● A better quality of life in rural areas (1) such as quieter with less traffic noise and/or less pollution (1). ● A lower quality of life in urban areas (1) due to traffic congestion / pollution (1). ● Increased car ownership (1) has resulted in people being able to live further from their place of work (1). ● The growth of working from home (1) has resulted in people being able to live further away from city centre locations where offices may be based (1). ● Locations in rural areas are generally safer (1) encouraging people to move away from urban areas / inner city areas which often have more crime (1). ● Rural areas have a quieter / more peaceful way of life (1) which is particularly appealing for retired people (1). ● New home construction in rural areas (1) has caused people to leave expensive urban locations (1). ● Higher rates of crime in urban areas (1) encourage people to move to rural areas which may be safer (1). ● As people retire (1) they no longer need to live close to their place of work (1). **Accept any other appropriate response.**	2

3b (i)	Award one mark for a plot on the line shown below.	1



3b (ii)	Award one mark for a line drawn with between 5-7 plots either side (above or below) as shown in the example below.  **Note : Do not penalise if Eswatini plot is not labelled.** **Note : Do not penalise if best fit line is not extended to y-axis.**	1
3b (iii)	Award one mark for the calculation, identifying that the highest value is 70% and the lowest value is 20% (1). Award a further mark for the correct answer for the range of these values of 50% (1). For example: 70%-20% (1) = 50% (1). **Note : Allow for the answer not being written on the dotted line. It will frequently be shown as 70-20 = 50 in the space allowed for 'you must show your working'.**	2

3b (iv)	Award one mark for each correct statement relating to the relationship shown on the scattergraph. ● There is a positive relationship (1). ● As GNI per capita increases, the % of the urban population increases (1). ● Angola / Eswatini are anomalies (1). ● Eswatini has a lower % of the population urban than would be expected given its GNI per capita (1). ● Angola has a higher % of the population urban than would be expected given its GNI per capita (1). ● Botswana has the highest GNI per capita – over $US6600 (1). ● Botswana has the highest % of the population urban at 71% (1). ● Malawi has the lowest % of the population urban at 18% (1). **Note: max 2 if no use of data. Please note that the data might be country names rather than numerical data.** **Accept any other appropriate response.**	3
3c	Award one mark for identifying a factor influencing land use and a further mark for explanation of this point. ● Land in city centres / CBD is expensive (1). Therefore, only commercial businesses /shops/offices which can afford the high rents dominate in this area (1). ● Land is cheaper on edge of town locations (1). Therefore, residential land use dominates in these areas (1). ● Land is cheaper on edge of town locations (1). Therefore, out of town shopping centres are found in these areas (1). ● The expensive land use in city centre locations (1) results in taller buildings found here to minimise the cost of ground rent (1). ● The CBD is very accessible (1). This attracts retail which requires high footfall (1). ● Edge of town locations are accessible by ring roads / motorways (1). This attracts manufacturing industry which needs to move its goods to markets (1). ● Edge of town locations are accessible via main roads (1) which attract housing developments with residents valuing accessibility to workplaces (1). ● Inner city areas are often less accessible with congested road networks (1), these sites are unattractive to industries requiring rapid access to marketplaces (1). ● Planning regulations (1) often encourage the construction of new developments on brownfield locations (1). ● Deindustralisation (1) has led to the dereliction of buildings (1). ● Urban planning will control what can be built where (1) sometimes protecting open spaces such as parks (1). ● Government / local government policy (1) may seek to focus regeneration on brownfield sites (1). **Accept any other appropriate response.**	4

3d (i)	Award 1 mark for any of the following correct answers. ● 12.1:36.3 ● 1:3 ● 2:6 **Note : do not penalise candidates who do not use a colon to separate their numbers – allow 1/3 or 1.3.**	1

3d (ii)	Award 1 mark for each comparative comment up to a maximum of 3 marks. ● The number has increased / will increase (1) from 13 to 34 and /or more than doubled (1). ● The number of megacities in Asia is forecast to rise / has risen considerably (1). ● There are more megacities in the tropics in 2025 (1). ● In 2000, the countries with the most megacities (two) were Japan and the USA. By 2025, India is forecast to have the most megacities. (1) ● The number of megacities in Asia is forecast to rise considerably (1). ● In 2000 there is only 1 megacity in South America whereas in 2025 it is forecasted there will be 4. (1). ● There are forecast to be 3 more megacities in Africa by 2025 (1). ● North America is forecast to have the same number of megacities by 2025 (1). **Accept any other appropriate response.**	3
3diii	Award 1 mark for identifying a reason for the increasing numbers of megacities and a further mark for explanation. ● The number of megacities is rising rapidly in Asia due to rural-urban migration (1) due to job opportunities in urban areas (1). ● People are moving to megacities in Asia (1) due to job opportunities (1). ● A lack of access to healthcare facilities in rural areas (1) results in rural to urban migration (1). ● Natural increase (1) as a consequence of a high number of young people living in urban areas (1). ● Birth rates are higher than death rates in urban areas (1) due to a younger population living in urban areas (1). ● A perceived improved quality of life (1) is an urban pull factor to megacities in emerging countries (1). ● The number of megacities has risen due to urban job opportunities (1). This has led to increased rural to urban migration. Note: Please do not accept birth rates in isolation. There needs to be some reference to death rates too and the fact that birth rates exceed death rates (the concept of natural increase). Max 3 if no use of evidence/data from Figures 7a and 7b. This evidence can be numeric or written as shown in examples 1 and 2 above. Data needs to be in only one of the answers or can be both. Accept any other appropriate response.	

3e	**AO2 4 marks / AO3 4 marks** **AO2 4 marks** ● Sustainability involves meeting the needs of present generations without compromising the ability of future generations to meet their own needs. ● Sustainability can be viewed as making social, economic and environmental improvements in a community. ● Bottom-up development strategies are often led by Non-Governmental Organisations who involve local people in the project. ● Bottom-up development strategies are planned and controlled by local communities. ● In Mumbai, SPARC is an Indian NGO who works with local communities to build toilet blocks. ● Local communities help to build the toilet blocks and can then purchase low cost monthly permits to make use of them. ● In Mumbai, the Hamara Foundation provides education for street children so that they have a better quality of life. ● Bottom-up projects are low-cost; however, they can have less of a city-wide impact than top-down projects. ● In Lagos, the Makoko floating school has been constructed on stilts on the edge of Lagos Lagoon to provide an education for children from some of the poorest communities in the city. ● The school was built from sustainable materials making use of bamboo and timber, widely available in the local area. ● The school educates a relatively small number of children in the Lagos Lagoon area – around 100. ● The school was constructed in a marginal area and collapsed following a period of heavy rain in 2016. ● Top-down development strategies often involve decision making by governments or large communities. ● Top-down development involves external decision makers identifying a country's needs and implementing large scale, large cost projects with funding coming from IGO's (intergovernmental organisations organisations) such as the World Bank. ● Local people often have no say in the nature of top-down development projects or their implementation. ● Vision Mumbai is a top-down development project aimed at improving the quality of life in Mumbai. ● Whereas the project has re-homed thousands of former slum dwellers, many people are not happy as alternative housing is of poor quality and communities have been split up. ● Newly constructed apartments often have a high rent which former slum dwellers struggle to afford.	8
	AO3 4 marks ● Evaluative comments regarding the strengths and weaknesses of bottom-up strategies for example, whilst often being more sustainable often benefit a smaller number of people whereas top-down projects such have Vision Mumbai impact a larger proportion of the population. ● Evaluative comments regarding the social, economic and environmental successes of bottom-up strategies. ● Evaluation might suggest that urban infrastructure projects have to be top-down given their scale and the nature of networks.	

	● Evaluative comments regarding the social, economic and environmental successes of bottom-up strategies. ● Judgement about which impact has been the greatest success of named top-down strategies. ● Judgement about which impact has been the greatest success of named bottom-up strategies. ● Judgement regarding the relative success of the top-down versus bottom strategies.	

Level	Mark	Descriptor
	0	● No acceptable response
Level 1	1-3	● 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. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3)
Level 2	4-6	● 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. An imbalanced argument that synthesises mostly relevant understanding but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3)
Level 3	7-8	● 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. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3)

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