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INTERNATIONAL GCSE GEOGRAPHY 9230

Paper 2 Challenges in the Human Environment

Mark scheme

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Mark schemes are prepared by the Lead Assessment Writer and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all associates participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students' responses to questions and that every associate understands and applies it in the same correct way. As preparation for standardisation each associate analyses a number of students' scripts. Alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, associates encounter unusual answers which have not been raised they are required to refer these to the Lead Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

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Level of response marking instructions

Level of response mark schemes are broken down into levels, each of which has a descriptor. The descriptor for the level shows the average performance for the level. There are marks in each level.

Before you apply the mark scheme to a student's answer read through the answer and annotate it (as instructed) to show the qualities that are being looked for. You can then apply the mark scheme.

Step 1 Determine a level

Start at the lowest level of the mark scheme and use it as a ladder to see whether the answer meets the descriptor for that level. The descriptor for the level indicates the different qualities that might be seen in the student's answer for that level. If it meets the lowest level then go to the next one and decide if it meets this level, and so on, until you have a match between the level descriptor and the answer. With practice and familiarity you will find that for better answers you will be able to quickly skip through the lower levels of the mark scheme.

When assigning a level you should look at the overall quality of the answer and not look to pick holes in small and specific parts of the answer where the student has not performed quite as well as the rest. If the answer covers different aspects of different levels of the mark scheme you should use a best fit approach for defining the level and then use the variability of the response to help decide the mark within the level, ie if the response is predominantly level 3 with a small amount of level 4 material it would be placed in level 3 but be awarded a mark near the top of the level because of the level 4 content.

Step 2 Determine a mark

Once you have assigned a level you need to decide on the mark. The descriptors on how to allocate marks can help with this. The exemplar materials used during standardisation will help. There will be an answer in the standardising materials which will correspond with each level of the mark scheme. This answer will have been awarded a mark by the Lead Examiner. You can compare the student's answer with the example to determine if it is the same standard, better or worse than the example. You can then use this to allocate a mark for the answer based on the Lead Examiner's mark on the example.

You may well need to read back through the answer as you apply the mark scheme to clarify points and assure yourself that the level and the mark are appropriate.

Indicative content in the mark scheme is provided as a guide for examiners. It is not intended to be exhaustive and you must credit other valid points. Students do not have to cover all of the points mentioned in the Indicative content to reach the highest level of the mark scheme.

An answer which contains nothing of relevance to the question must be awarded no marks.

Section A – Urban issues and challenges

Question 1

Qu	Part	Marking Guidance	Total marks
01	1	Which city had the largest population increase from 1980 to 2022? Delhi.	1 mark AO4=1

Qu	Part	Marking Guidance	Total marks
01	2	Suggest two reasons for the growth of cities in LICs/NEEs. • Migration. (1) • Natural increase. (1)	2 marks AO2=2

Qu	Part	Marking Guidance	Total marks
01	3	Draw a line of best fit on Figure 2. A line approximately mid-way through the points from between 50-80 on the left hand side to between 70-90 on the right hand side.	1 mark AO4=1

Qu	Part	Marking Guidance	Total marks
01	4	Describe the relationship between the percentage of population living in poverty and the percentage of urban population as shown in Figure 2. 1 mark for a general observation about it being a 'negative' relationship (as urban population increases poverty decreases)/negative correlation. 1 mark for some reference to the strength of the relationship/anomalies (at lower levels of urban population the data is more widespread, at higher levels of urban population the data is more concentrated). If this is expressed simply as 'not a very strong relationship' it should be qualified.	2 marks AO4=2

Qu	Part	Marking Guidance			Total marks
01	5	Explain how urban planning has helped to improve the quality of life for many people in LICs/NEEs.			4 marks AO1=2 AO2=2
		Level 2 (Clear)	3–4 marks	Demonstrates appropriate and clear knowledge and understanding about how urban planning creates opportunities which can improve the quality of life. Some reference to factor(s) which evidence this (improved housing/access to utilities/better roads/access to education/healthcare; improved employment opportunities) and how this relates to 'quality of life'.	
		Level 1 (Basic)	1–2 marks	Demonstrates a basic understanding of how urban planning might improve facilities and the quality of life.	
			0	No relevant content.	
		Indicative content Context should be LIC/NEE, as in the Specification • Quality of life can be considered in a number of ways and can include socio-economic, environmental and political factors. • Urban planning initiatives can build new homes or improve existing homes. • Urban planning can improve infrastructure and give people access to basic facilities such as water, sanitation and energy. • Improved road networks give people better access to social and economic facilities. • Urban planning can create education and health facilities. • Urban planning initiatives create employment opportunities and improve social cohesion.			

Qu	Part	Marking Guidance			Total marks
01	6	Explain how urban growth has created challenges for LIC/NEE cities.			
		Use Figure 3 and your own understanding.			
		Level 3 (Detailed)	5–6 marks	Uses Figure 3 effectively to identify a number of challenges and demonstrates accurate and detailed understanding and develops an appreciation of how urban growth has created/added to the identified challenges.	
		Level 2 (Clear)	3–4 marks	Uses Figure 3 to identify a number of issues and demonstrates clear understanding and develops an appreciation of how the identified issues create problems for people living in urban areas.	
		Level 1 (Basic)	1–2 marks	Identifies one or two issues from Figure 3 with limited appreciation of why they create problems for people living in urban areas. (For 2 marks either identifies 2 issues OR identifies 1 issue with some basic development; ‘there is water pollution which makes people ill’)	
			0	No relevant content.	
Indicative content					
• Figure 3 suggests a number of issues, including; poor housing, overcrowding, inequality, water and land pollution, issues of waste management, vegetation and habitat loss. • The resource directly suggests a number of challenges, including land and water pollution, slum housing, overcrowding. • The resource indirectly suggests issues such as a lack of infrastructure and a wealth gap. • Population growth is often made up of poorer people who lack resources, adding to slum areas. • Growth puts additional pressure on resources. • Growth makes urban planning a challenge (housing, infrastructure, services etc). • Growth creates social, economic and environmental challenges.					

Qu	Part	Marking Guidance	Total marks
01	7	What is meant by urban sprawl? Some awareness of spatial growth/development on urban fringe areas/increasing density on urban fringe areas/greenfield development.	1 mark AO1=1

Qu	Part	Marking Guidance	Total marks									
01	8	How might urban sprawl create environmental impacts? Use Figure 4 and your own understanding. <table><tr><td>Level 2 (Clear)</td><td>3–4 marks</td><td>Uses Figure 4 to recognise environmental characteristics of areas under pressure of urban sprawl and the types of development taking place in these areas. Shows awareness of how development might impact the environment directly (destruction of habitats/removal of trees/changing steams/rivers) and indirectly (effect of increased traffic/potential water and air pollution).</td></tr><tr><td>Level 1 (Basic)</td><td>1–2 marks</td><td>Uses Figure 4 to offer descriptive points about the environment and how it might be damaged by development.</td></tr><tr><td></td><td>0</td><td>No relevant content.</td></tr></table> Indicative content • Environmental pressure on urban fringe areas. • Loss of habitats. • Changes to rivers (diverted, channelised, polluted). • Land/water pollution. • Encroachment of smaller towns/villages. • Added pressure on infrastructure. • Added waste (waste dumps/landfill/ground and water pollution). • Added traffic/congestion – links to air pollution/water pollution. • Industrial development – water/land/air pollution.	Level 2 (Clear)	3–4 marks	Uses Figure 4 to recognise environmental characteristics of areas under pressure of urban sprawl and the types of development taking place in these areas. Shows awareness of how development might impact the environment directly (destruction of habitats/removal of trees/changing steams/rivers) and indirectly (effect of increased traffic/potential water and air pollution).	Level 1 (Basic)	1–2 marks	Uses Figure 4 to offer descriptive points about the environment and how it might be damaged by development.		0	No relevant content.	4 marks AO2=2 AO4=2
Level 2 (Clear)	3–4 marks	Uses Figure 4 to recognise environmental characteristics of areas under pressure of urban sprawl and the types of development taking place in these areas. Shows awareness of how development might impact the environment directly (destruction of habitats/removal of trees/changing steams/rivers) and indirectly (effect of increased traffic/potential water and air pollution).										
Level 1 (Basic)	1–2 marks	Uses Figure 4 to offer descriptive points about the environment and how it might be damaged by development.										
	0	No relevant content.										

Qu	Part	Marking Guidance			Total marks
01	9	Assess the extent to which an urban regeneration project has been successful.			
		Use an example from either London or New York.			
		Level 3 (Detailed)	7–9 marks	Demonstrates accurate and detailed locational knowledge and understanding about the impact of an urban regeneration project. Applies this effectively to consider the extent to which the project was successful in addressing the issues that it was designed to improve.	
		Level 2 (Clear)	4–6 marks	Demonstrates appropriate and clear locational knowledge and understanding about the impact of an urban regeneration project. Applies this effectively to describe how the project has improved the area and offers some evaluative judgement about the relative success of the project.	
		Level 1 (Basic)	1–3 marks	Offers some understanding of urban regeneration with a basic level of knowledge which describes element(s) of a regeneration project. Limited locational reference. Simplistic attempt to describe how a regeneration project has improved an area.	
			0	No relevant content.	
Indicative content					
• There is an expectation that students will have studied a specific locational example of a regeneration project within either London or New York. • Response can focus on the holistic aspects of a regeneration project (considering social, economic and environmental factors) or one element of the project. • Regeneration projects are often a response to a number of issues, but those issues are not always of equal importance. Consequently, an answer may be dominated by individual requirements (employment, environmental improvement, encouraging social cohesion). • The success of the regeneration project needs to be considered in relation to the original objectives, so some understanding of the initial problems that the project is attempting to resolve will be required at the highest level.					

Section B – The changing economic world

Question 2

Qu	Part	Marking Guidance	Total marks
02	1	Describe the distribution of countries with a GNI per capita of 2000–4999 (US\$) shown on Figure 5. • These countries are mainly found in south-east Asia (1) with a small number in central Asia. (1) • North and south Africa has some. (1) • There are a limited number of countries in South and Central America (1). Isolated countries in the Middle East, Eastern Europe and North Africa. (1) 1 mark for each valid reference to distribution. 2 × 1 marks	2 marks AO4=2

Qu	Part	Marking Guidance	Total marks
02	2	Suggest two limitations of using GNI to compare levels of development. • It is only one factor (development is not just economic). • It is an average/does not show extremes or range. • Data may not be accurate/reliable. • Issues of government corruption. • It does not reflect how money is used. 2 × 1 marks	2 marks AO2=2

Qu	Part	Marking Guidance	Total marks									
02	3	To what extent is there a link between the stages of the Demographic Transition Model (DTM) and the level of development? <table><tr><td>Level 2 (Clear)</td><td>3–4 marks</td><td>Some awareness that as a country develops its population characteristics change, with reference to specific characteristics relating to different phases of development with some explanation ('as countries develop increasing wealth allows more money to be spent on healthcare, so the death rate decreases'). Max Level 1 if just a description of changes in the DTM stages with no attempt to link this to the level of development.</td></tr><tr><td>Level 1 (Basic)</td><td>1–2 marks</td><td>A basic awareness of the Demographic Transition Model which offers some description about how birth and death rates change in relation to the stages. Limited reference to the idea of development.</td></tr><tr><td></td><td>0</td><td>No relevant content.</td></tr></table> Indicative content • There is an expectation that students will have studied the Demographic Transition Model, so they should have an awareness of the elements within it (birth/death rates, natural increase/decrease). • The stages in the model relate to pre-industrial, industrial and post-industrial phases so there is a clear link to development. • Explanation can be linked to both economic and social change. • Economic development may increase wealth which improves living conditions and consequently reduces death rates. • Economic development may increase the amount spent on healthcare, reducing death rates. • Economic development may affect attitudes towards fertility with more gender equality and changing attitudes towards birth control. • There may be more diverse ideas, such as changing age structure which will potentially impact both birth and death rates.	Level 2 (Clear)	3–4 marks	Some awareness that as a country develops its population characteristics change, with reference to specific characteristics relating to different phases of development with some explanation ('as countries develop increasing wealth allows more money to be spent on healthcare, so the death rate decreases'). Max Level 1 if just a description of changes in the DTM stages with no attempt to link this to the level of development.	Level 1 (Basic)	1–2 marks	A basic awareness of the Demographic Transition Model which offers some description about how birth and death rates change in relation to the stages. Limited reference to the idea of development.		0	No relevant content.	4 marks AO1=2 AO3=2
Level 2 (Clear)	3–4 marks	Some awareness that as a country develops its population characteristics change, with reference to specific characteristics relating to different phases of development with some explanation ('as countries develop increasing wealth allows more money to be spent on healthcare, so the death rate decreases'). Max Level 1 if just a description of changes in the DTM stages with no attempt to link this to the level of development.										
Level 1 (Basic)	1–2 marks	A basic awareness of the Demographic Transition Model which offers some description about how birth and death rates change in relation to the stages. Limited reference to the idea of development.										
	0	No relevant content.										

Qu	Part	Marking Guidance	Total marks
02	4	Using Figure 6, describe the changes to the industrial structure of India from 1950–2020. 1 mark for mention of individual sector. 2 marks if 2 or 3 sectors considered. Agriculture – Steady decline. Services – Steady increase. Manufacturing – Gradual increase. Data can be used to express rate of change. Could be expressed as simple individual points or a statement where comparative changes are highlighted (likely between Agriculture and Services).	2 marks AO4=2

Qu	Part	Marking Guidance	Total marks
02	5	What is meant by the global development gap? Some appreciation of the differences in income/quality of life/level of development between countries.	1 mark AO1=1

Qu	Part	Marking Guidance	Total marks												
02	6	‘Of all the strategies used to reduce the development gap, aid is the best option.’ To what extent do you agree with this statement? <table><tr><td>Level 3 (Detailed)</td><td>7–9 marks</td><td>Demonstrates accurate and detailed knowledge and understanding about the impact of aid on receiving countries. Applies this coherently to put forward a discussion which offers some evaluative and balanced judgement about the relative impact of aid in relation to at least two other strategies.</td></tr><tr><td>Level 2 (Clear)</td><td>4–6 marks</td><td>Demonstrates appropriate and clear knowledge and understanding about the impact of aid on receiving countries. Applies this effectively to offer a discussion which offers some evaluative judgement about the impact of aid with some evaluative comparison with at least one other strategy.</td></tr><tr><td>Level 1 (Basic)</td><td>1–3 marks</td><td>A number of largely generic descriptive points which identify how aid might impact receiving countries with limited attempt to offer evaluative or comparative judgement.</td></tr><tr><td></td><td>0</td><td>No relevant content.</td></tr></table> The textbook includes the following examples: • general summation of different types of aid • UK aid (Oxfam) • intermediate technology • fair trade • debt relief • microfinance • tourism. Indicative content • The Specification identifies the following strategies: investment, industrial development, tourism, aid, intermediate technology, Fairtrade, debt relief, microfinance. • Aid is one of a number of strategies used to reduce the development gap. • There are different types of aid (in relation to the question emergency aid and development aid might be considered/compared). • Each strategy will have advantages and disadvantages, the discussion will be determined by the examples that have been studied so there is no definitive, holistic answer.	Level 3 (Detailed)	7–9 marks	Demonstrates accurate and detailed knowledge and understanding about the impact of aid on receiving countries. Applies this coherently to put forward a discussion which offers some evaluative and balanced judgement about the relative impact of aid in relation to at least two other strategies.	Level 2 (Clear)	4–6 marks	Demonstrates appropriate and clear knowledge and understanding about the impact of aid on receiving countries. Applies this effectively to offer a discussion which offers some evaluative judgement about the impact of aid with some evaluative comparison with at least one other strategy.	Level 1 (Basic)	1–3 marks	A number of largely generic descriptive points which identify how aid might impact receiving countries with limited attempt to offer evaluative or comparative judgement.		0	No relevant content.	9 marks AO1=3 AO2=3 AO3=3
Level 3 (Detailed)	7–9 marks	Demonstrates accurate and detailed knowledge and understanding about the impact of aid on receiving countries. Applies this coherently to put forward a discussion which offers some evaluative and balanced judgement about the relative impact of aid in relation to at least two other strategies.													
Level 2 (Clear)	4–6 marks	Demonstrates appropriate and clear knowledge and understanding about the impact of aid on receiving countries. Applies this effectively to offer a discussion which offers some evaluative judgement about the impact of aid with some evaluative comparison with at least one other strategy.													
Level 1 (Basic)	1–3 marks	A number of largely generic descriptive points which identify how aid might impact receiving countries with limited attempt to offer evaluative or comparative judgement.													
	0	No relevant content.													

		• 'Reduce the development gap' can be considered in a number of ways, including the development of economic opportunities, infrastructure projects and improvements to social or living conditions. • The focus may well be on development projects (water, sanitation, electricity, health projects).	
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Section C – Global issues

Water and energy resources or Population and communication

Question 3 – Water and energy resources

Qu	Part	Marking Guidance	Total marks
03	1	Which country in Figure 7 has: The largest number of people without access to clean water? India. The largest proportion of population without access to clean water? Ethiopia.	2 marks AO4=2

Qu	Part	Marking Guidance	Total marks									
03	2	‘Water availability is about both quantity and quality.’ Explain this statement. <table><tr><td>Level 2 (Clear)</td><td>3–4 marks</td><td>Some awareness that both a lack of water and poor quality water (water pollution) can cause issues, with an appreciation that some areas might have sufficient availability but water contamination is a problem which causes major health issues.</td></tr><tr><td>Level 1 (Basic)</td><td>1–2 marks</td><td>A basic understanding which highlights that a both a lack of water and poor quality water can cause problems OR developed point about either quality OR quantity. MAX Level 1 if only quality OR quantity mentioned.</td></tr><tr><td></td><td>0</td><td>No relevant content.</td></tr></table> Indicative content • The basic idea is that access to water is not simply about physical availability but also about water quality, since contaminated water is considered to be the most significant factor affecting basic levels of wellbeing (United Nations). • In some areas there are water supply issues related to physical, economic or political issues which create particular problems. • In some areas excessive rainfall (monsoon) can create flooding and water contamination issues. • A major problem in many parts of the world is water contamination, especially in urban/industrial areas, where rivers may be used to discharge waste and raw sewage and there are limited regulations to stop discharge into rivers and lakes. • The separation of clean and foul water is not always adequately managed. • In rural areas, agricultural practices might cause water pollution issues. • Foul water transfer and treatment may be limited in some countries. • Water contamination appears to affect more people (in relation to disease/health) than water shortage.	Level 2 (Clear)	3–4 marks	Some awareness that both a lack of water and poor quality water (water pollution) can cause issues, with an appreciation that some areas might have sufficient availability but water contamination is a problem which causes major health issues.	Level 1 (Basic)	1–2 marks	A basic understanding which highlights that a both a lack of water and poor quality water can cause problems OR developed point about either quality OR quantity. MAX Level 1 if only quality OR quantity mentioned.		0	No relevant content.	4 marks AO2=2 AO3=2
Level 2 (Clear)	3–4 marks	Some awareness that both a lack of water and poor quality water (water pollution) can cause issues, with an appreciation that some areas might have sufficient availability but water contamination is a problem which causes major health issues.										
Level 1 (Basic)	1–2 marks	A basic understanding which highlights that a both a lack of water and poor quality water can cause problems OR developed point about either quality OR quantity. MAX Level 1 if only quality OR quantity mentioned.										
	0	No relevant content.										

Qu	Part	Marking Guidance			Total marks
03	3	Explain the impacts of a large-scale water transfer scheme that you have studied.			6 marks AO1=3 AO2=3
		Level 3 (Detailed)	5–6 marks	Demonstrates accurate and detailed knowledge and understanding about a large scale water transfer scheme. Applies this effectively to illustrate how the scheme operated and offers a discussion which offers some appreciation of the advantages and disadvantages of the scheme.	
		Level 2 (Clear)	3–4 marks	Identifies and uses knowledge and understanding about a large scale water transfer scheme effectively to offer a discussion which offers some appreciation of the impacts of the scheme.	
		Level 1 (Basic)	1–2 marks	A number of descriptive points which consider the impact (advantages and/or disadvantages) of a water transfer scheme.	
			0	No relevant content.	
		Indicative content			
		• There is an expectation that students will have studied a large scale water transfer scheme (examples in the textbook include China’s south-north water transfer scheme and The Lesotho Highland Water Project). • Responses might focus on advantages and disadvantages (which are mentioned in the Specification). Answers without an overall discussion which offers a balance between the advantages and disadvantages are unlikely to reach Level 3. • Local/regional advantages might include: access to electricity, potential employment, improvement to quality of life, flood management, potential irrigation, potential fishing, using the lake as a communication route. • Local/regional disadvantages might include: population displacement, loss of homes/communities, damage to local agricultural systems, damage to environments, impacts on downstream areas. • The discussion is likely to focus on social, economic and environmental impacts. • Since the question is focused on a large scale scheme it is appropriate to consider that there may be local and national impacts: it may cause disruption to local people and damage local livelihoods and environments while generating energy which aids development and increases energy security.			

Qu	Part	Marking Guidance	Total marks
03	4	Compare the different sources used to generate electricity in the two regions shown in Figure 8. 1 mark for each • Middle East uses more oil. • Middle East uses more gas. • South America uses more coal. • South America uses more hydroelectricity. • South America uses more renewables. • Middle East uses more fossil fuels.	2 marks AO4=2

Qu	Part	Marking Guidance			Total marks
03	5	Suggest reasons for the differences in the sources used to generate electricity in the two regions shown in Figure 8.			4 marks AO2=2 AO3=2
		Level 2 (Clear)	3–4 marks	Applies clear knowledge and understanding about how available sources might dictate the electricity energy mix in each region with reference to Figure 8. 'South America might have more rainfall and fast flowing rivers, so hydro-electricity will be more available'.	
		Level 1 (Basic)	1–2 marks	Basic understanding that different areas might use different sources according to how available they might be with limited development. 'Some areas might be able to use rivers for generating electricity'.	
			0	No relevant content.	
		Indicative content			
		• Geology dictates the availability of fossil fuels. • Fossil fuels are more easily available under land masses. • Renewables are dependent on particular physical characteristics. • Available investment may dictate the use of expensive technology. • South America has higher rainfall and an abundance of fast flowing rivers. • Different renewables may be dictated by the physical landscape and geographical position. • Political decisions with regard to energy policy.			

Qu	Part	Marking Guidance	Total marks
03	6	Suggest two ways that economic development increases energy consumption. 1 mark for a basic point and 2 marks for a developed point which offers a clear cause-effect link. • The development of industry (1) • means that more energy is needed to run factories. (1) • People are wealthier and can afford energy (1) • in their homes or for powering appliances. (1) • Industry needs resources (1) • which means more heavy vehicles using fuel. (1) • More people have cars (1) • adding to the demand for petrol. (1) • Increasing building work (1) • which requires energy using equipment. (1) • Agriculture is more mechanised (1) • and machines require energy. (1) 2 × 2 marks	4 marks AO3=4

Qu	Part	Marking Guidance	Total marks
03	7	Use Figure 9 to identify which one of the following statements is correct. Shade one circle only. C (The largest predicted increase in energy demand is in India.)	1 mark AO4=1

Qu	Part	Marking Guidance	Total marks
03	8	In Africa, the predicted increase in energy demand between 2017 and 2040 is 470 MTOEs. Which of the following proportional symbols should be used to represent this information on Figure 9? Shade one circle only. B  Accept answer if candidate shades the actual circle rather than the lozenge.	1 mark AO4=1

Qu	Part	Marking Guidance			Total marks
03	9	To what extent might the growth in energy demand shown in Figure 9 have negative environmental impacts?			6 marks AO2=3 AO3=3
		Level 3 (Detailed)	5–6 marks	Uses Figure 9 effectively to identify that there is a significant predicted increase in the global demand for energy and that this demand will need to be satisfied in some way. Shows an understanding that the increasing demand can be met by using renewable and non-renewable methods, which will have potentially varying environmental impacts.	
		Level 2 (Clear)	3–4 marks	Uses Figure 9 effectively to identify that there is a predicted increase in the global demand for energy. Shows an understanding that meeting this increase in demand will put pressure on the environment with some appreciation that this will vary in terms of how the increasing demand is managed.	
		Level 1 (Basic)	1–2 marks	Uses Figure 9 to identify a predicted increase in energy demand makes basic points about how this might affect the environment.	
			0	No relevant content.	
Indicative content					
• Figure 9 suggests a significant likely increase in energy demand. • There are different ways that an increase in energy demand can be satisfied; each will have different environmental impacts. • Use of fossil fuels can cause both local and global environmental issues (local impact of mining/global impact – acid rain/global warming). • The use of fossil fuels requires transportation and this can affect environments directly (building pipelines) and indirectly (accidents). • Use of renewable energy creates less air pollution but may affect local environments (land flooded for HEP/habitats disturbed by building wind turbines/solar farms). • The overall environmental impact will be determined by how any increase in demand is satisfied. • There may be cleaner types of energy developed in the next 40 years. • Technological change may reduce the environmental impact of using fossil fuels. • Increased efficiency may mean that the predictions of future energy demand are over-stated.					

Question 4 – Population and communication

Qu	Part	Marking Guidance	Total marks
04	1	Which continent is projected to have the largest population increase between 2000 and 2100? Africa.	1 mark AO4=1

Qu	Part	Marking Guidance	Total marks
04	2	Calculate how much the world population is projected to increase between 2020 and 2100. 1.4 billion (7.4 to 8.8 billion)	1 mark AO4=1

Qu	Part	Marking Guidance	Total marks
04	3	Suggest two reasons why population growth in Asia is projected to decline after 2050. 1 mark for identifying a basic idea and 2 marks for a developed point which offers a clear cause-effect link. • Economic development (1) • often leads to families having fewer children. (1) • Changing position of women (1) • means that women are able to have more control over the size of families. (1) • Access to healthcare (1) • means fewer deaths so less pressure to have children. (1) • Access to birth control (1) • will reduce the birth rate. (1) • An aging population (1) • will lead to lower birth rates. (1) 2 × 2 marks	4 marks AO4=4

Qu	Part	Marking Guidance	Total marks
04	4	Which area in Figure 11 has: the highest median age of population? Europe. the same median age of population as Asia? South America. 2 × 1 marks	2 marks AO4=2

Qu	Part	Marking Guidance	Total marks
04	5	The median age of the population in Africa is 18 years. Which of the following proportional symbols should be used to represent this information on Figure 11? Shade one circle only. B  Accept answer if candidate shades the actual circle rather than the lozenge.	1 mark AO4=1

Qu	Part	Marking Guidance	Total marks
04	6	In 2100, what percentage (%) of the world's children (age 0–4 years) will live in Africa? Shade one circle only. C (45%)	1 mark AO4=1

Qu	Part	Marking Guidance			Total marks
04	7	Suggest how age structure might influence population growth.			4 marks AO2=2 AO3=2
		Level 2 (Clear)	3–4 marks	Clear awareness of how age structure might affect population growth, with links clearly explained (youthful population – higher rates of fertility, higher birth rates/lower death rates, higher population growth).	
		Level 1 (Basic)	1–2 marks	A basic understanding which identifies in simplistic terms how a younger population might lead to higher population growth. Links between factors not expressed/developed.	
			0	No relevant content.	
		Indicative content • This part of the Specification focuses on how the age structure of a population might affect population growth. • The Specification implies a global understanding of population change with some degree of locational perspective and some appreciation of why population growth rates vary globally. • Figure 11 has some useful information which might be usefully incorporated in an answer. • This topic also features in Section B – The Changing Economic World. • The basic idea is that younger populations have higher rates of fertility and consequently this might be reflected in higher birth rates.			

Qu	Part	Marking Guidance			Total marks
04	8	To what extent might a youthful population create positive economic impacts?			6 marks AO2=3 AO3=3
		Level 3 (Detailed)	5–6 marks	Demonstrates a detailed understanding of population structure and how a youthful population creates both opportunities and challenges. Applies this effectively to put forward a coherent discussion which offers a balanced judgement about the likely effects of a youthful population.	
		Level 2 (Clear)	3–4 marks	Demonstrates a clear understanding of population structure and describes some of the challenges and pressures of having a youthful population. Applies this understanding to offer some evaluative judgement.	
		Level 1 (Basic)	1–2 marks	Shows a basic awareness of population structure and makes an attempt to identify the challenges and opportunities of having a youthful population. MAX Level 1 if the answer is largely focused on demographic impacts with marginal reference to the economic impact of the identified demographic observations.	
			0	No relevant content.	
		Indicative content • The focus of the question is ‘economic impacts’, NOT ‘demographic impacts’. • This topic is identified in the Specification in two main ways: ‘the impact of age structure in relation to population change’ and ‘the economic and environmental impacts linked to age structure’. • ‘To what extent’ suggests a discussion which considers that a youthful population may have a variety of economic impacts, some of which might be positive, and some negative. • A youthful population will mean high fertility rates and this may create additional population pressure which may have cost implications. • A rapidly growing population will put additional pressure on resources (education, particular health needs, demand for housing and infrastructure). • A youthful population may suggest higher rates of migration, which in turn can create positive and negative economic impacts. • A youthful population may provide a larger and more dynamic workforce. • A youthful population may mean a higher dependency ratio (‘youthful’ in relation to non-working age). • A youthful population may mean additional cost to social services such as healthcare and education.			

		• A youthful population may be more dynamic and stimulate economic development. • A youthful population may be more engaged with current technology. • A youthful population may create additional demand across a range of sectors, generating a positive multiplier effect. • Younger people may be more inclined to migrate after being educated/trained.	
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Qu	Part	Marking Guidance	Total marks									
04	9	‘Access to technology is growing globally, but not always equally.’ Discuss this statement. Use Figure 12 and your own understanding. <table><tr><td>Level 2 (Clear)</td><td>3–4 marks</td><td>Demonstrates clear knowledge of the ways in which access to technology is growing globally, but the rate of growth and access to different types of technology may vary. Uses Figure 12 effectively to support this idea by identifying the differences in terms of both general and specific access to different types of technology.</td></tr><tr><td>Level 1 (Basic)</td><td>1–2 marks</td><td>Makes a number of general points about how access to technology is growing. Uses Figure 12 in a superficial way by identifying that some areas might have greater overall access to technology than others.</td></tr><tr><td></td><td>0</td><td>No relevant content.</td></tr></table> Indicative content • The resource (Figure 12) suggests that all areas have access to mobile phone technology but the more advanced economies (HICs) generally have higher levels of overall access and higher levels of the latest technology (smartphones). • Mobile phones are only one example of technology, focus might also be on computer based technology. • The pattern may not be simple, in some countries there may be significant investment in technology linked to economic development (technology hubs/call centres).	Level 2 (Clear)	3–4 marks	Demonstrates clear knowledge of the ways in which access to technology is growing globally, but the rate of growth and access to different types of technology may vary. Uses Figure 12 effectively to support this idea by identifying the differences in terms of both general and specific access to different types of technology.	Level 1 (Basic)	1–2 marks	Makes a number of general points about how access to technology is growing. Uses Figure 12 in a superficial way by identifying that some areas might have greater overall access to technology than others.		0	No relevant content.	4 marks AO2=2 AO3=2
Level 2 (Clear)	3–4 marks	Demonstrates clear knowledge of the ways in which access to technology is growing globally, but the rate of growth and access to different types of technology may vary. Uses Figure 12 effectively to support this idea by identifying the differences in terms of both general and specific access to different types of technology.										
Level 1 (Basic)	1–2 marks	Makes a number of general points about how access to technology is growing. Uses Figure 12 in a superficial way by identifying that some areas might have greater overall access to technology than others.										
	0	No relevant content.										

Qu	Part	Marking Guidance	Total marks												
04	10	‘The development of airports can create challenges.’ Explain the statement above with reference to an airport development or proposed airport development you have studied. <table><tr><td>Level 3 (Detailed)</td><td>5–6 marks</td><td>Demonstrates accurate and detailed knowledge and understanding about an airport development. Applies this effectively to illustrate the characteristics of the development and offers a discussion which offers some evaluative and balanced judgement about the socio-economic and environmental impacts of the development.</td></tr><tr><td>Level 2 (Clear)</td><td>3–4 marks</td><td>Demonstrates appropriate and clear knowledge and understanding about an airport development. Applies this effectively to offer a discussion which offers some evaluative judgement about the impact of the identified development.</td></tr><tr><td>Level 1 (Basic)</td><td>1–2 marks</td><td>A number of largely descriptive points which identify an airport development with limited attempt to offer evaluative judgement.</td></tr><tr><td></td><td>0</td><td>No relevant content.</td></tr></table> Indicative content • Accept an airport expansion or the development of a new airport. • There is an expectation that students will have studied an airport development (Specification, ‘a case study of airport expansion’). • The development of a new airport or the expansion of an existing airport are suitable examples. • Responses might focus on advantages and disadvantages. Answers without an overall discussion which offers a degree of judgement about the balance between the advantages and disadvantages are unlikely to reach Level 3. • The discussion is likely to focus on social, economic and environmental impacts. • Since the question is focused on an airport which is likely to be international it is appropriate to consider that there may be a conflict between local and national impacts.	Level 3 (Detailed)	5–6 marks	Demonstrates accurate and detailed knowledge and understanding about an airport development. Applies this effectively to illustrate the characteristics of the development and offers a discussion which offers some evaluative and balanced judgement about the socio-economic and environmental impacts of the development.	Level 2 (Clear)	3–4 marks	Demonstrates appropriate and clear knowledge and understanding about an airport development. Applies this effectively to offer a discussion which offers some evaluative judgement about the impact of the identified development.	Level 1 (Basic)	1–2 marks	A number of largely descriptive points which identify an airport development with limited attempt to offer evaluative judgement.		0	No relevant content.	6 marks AO1=3 AO2=3
Level 3 (Detailed)	5–6 marks	Demonstrates accurate and detailed knowledge and understanding about an airport development. Applies this effectively to illustrate the characteristics of the development and offers a discussion which offers some evaluative and balanced judgement about the socio-economic and environmental impacts of the development.													
Level 2 (Clear)	3–4 marks	Demonstrates appropriate and clear knowledge and understanding about an airport development. Applies this effectively to offer a discussion which offers some evaluative judgement about the impact of the identified development.													
Level 1 (Basic)	1–2 marks	A number of largely descriptive points which identify an airport development with limited attempt to offer evaluative judgement.													
	0	No relevant content.													