



Mark Scheme (Results)

Summer 2019

Pearson Edexcel International GCSE
In Geography (4GE1) Paper 02

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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.

How to award marks when level descriptions are used

1. Finding the right level

The first stage is to decide into which level the answer should be placed in. To do this, use a 'best-fit' approach, deciding which level most closely describes the quality of the answer. Answers can display characteristics from more than one level, and where this happens markers must use the guidance below and their professional judgement to decide which level is most appropriate.

For example, one stronger passage at L4 would not by itself merit a L4 mark, but it might be evidence to support a high L3 mark, unless there are substantial weaknesses in other areas. Similarly, an answer that fits best in L3 but which has some characteristics of L2 might be placed at the bottom of L3. An answer displaying some characteristics of L3 and some of L1 might be placed in L2.

2. Finding a mark within a level

After a level has been decided on, the next stage is to decide on the mark within the level. The instructions below tell you how to reward responses within a level. However, where a level has specific guidance about how to place an answer within a level, always follow that guidance.

Levels containing 2 marks only

Start with the presumption that the work will be at the top of the level. Move down to the lower mark if the work only just meets the requirements of the level.

Levels containing 3 or more marks

Markers should be prepared to use the full range of marks available in a level and not restrict marks to the middle. Markers should start at the middle of the level (or the upper-middle mark if there is an even number of marks) and then move the mark up or down to find the best mark. To do this, they should take into account how far the answer meets the requirements of the level:

- If it meets the requirements *fully*, markers should be prepared to award full marks within the level. The top mark in the level is used for answers that are as good as can realistically be expected within that level
- If it only *barely* meets the requirements of the level, markers should consider awarding marks at the bottom of the level. The bottom mark in the level is used for answers that are the weakest that can be expected within that level
- The middle marks of the level are used for answers that have a *reasonable* match to the descriptor. This might represent a balance between some characteristics of the level that are fully met and others that are only barely met.

Question number	Answer	Mark
1(a)	<p style="text-align: center;">AO1 (1 mark)</p> <p>C a classification system for types of employment</p> <p>C is the correct answer as the other options do not related to economic sectors.</p>	(1)

Question number	Answer	Mark
1(b)	<p style="text-align: center;">AO1 (1 mark)</p> <p>D primary</p> <p>D is the correct answer since the other options exclude agriculture as part of their activity mix.</p>	(1)

Question number	Answer	Mark
1(c)	<p style="text-align: center;">AO1 (1 mark)</p> <p>Award 1 mark for any of the following.</p> <ul style="list-style-type: none"> • the basic material from which a product is made (1). • natural resources which are unprocessed (1). • an unrefined material straight from source / in its natural state (1). • natural resources for use / processing by the secondary sector (1). • naturally occurring (resource) used to make another product (1). <p>Accept any other appropriate response, including forms of energy e.g. crude oil, coal etc.</p> <p>Response must include an idea of it being unprocessed, raw, unfinished or going to be used by the secondary sector for credit.</p>	(1)

Question number	Answer	Mark
1(d)	<p style="text-align: center;">AO3 (1 mark) / AO1 (1 mark)</p> <p>Award 1 mark (AO3) for evidence from the image and a further mark (AO2) for extension through explanation, up to a maximum of 2 marks:</p> <ul style="list-style-type: none"> • There are street sellers selling fruit next to a car (1) as they do not have a fixed building to sell produce from (1) • In the foreground there is a man on a bike carrying goods (1) because the economy is still reliant on the cash economy (1). <p>Accept any other appropriate response.</p> <p>Note evidence must be directly from photograph, not assumed.</p>	(2)

Question number	Answer	Mark
1(e)	<p style="text-align: center;">AO1 (1 mark)</p> <p>Award 1 mark for any of the following.</p> <ul style="list-style-type: none"> • Wind / wind turbines / wind power (1) • Solar / solar PV / solar power / solar energy (1) • Biomass / wood (1) • Geothermal (1) • Hydro / pumped storage / HEP (1) • Tidal (1) <p>Accept nuclear.</p>	(1)

Question number	Answer	Mark
1(f)	<p style="text-align: center;">AO2 (4 marks)</p> <p>Award 1 mark for a reason and a further expansion mark, up to a maximum of 2 marks each.</p> <ul style="list-style-type: none"> • Availability of energy resources (1) places which have a lot, e.g. oil, often consume in high amounts (1). • Price of energy (1) will impact on supply and demand within a region or country (1). • Some places countries have larger populations (1) therefore will demand more energy (1). • In some hot countries, they require more cooling (1) so more energy is needed to operate fridges and air-conditioning (1). <p>Accept any other appropriate response, e.g. related to level of development.</p>	(4)

Question number	Answer	Mark
1(g)	<p style="text-align: center;">AO1 (1 mark) / (AO3) 2 marks</p> <p>Award 1 mark (AO1) for a basic reason and a further 2 marks (AO3) for extension through explanation or description, up to a maximum of 3 marks.</p> <ul style="list-style-type: none"> • The big increase between 2020 and 2040 350-475 BTU (1) due an increase in global population (1) which means overall there will be a substantial increase in consumption (1). • The big increase between 2020 and 2040 350-475 BTU (1) due an increase in consumption per head (1) a people become wealthier they generally have more appliances and devices which use more energy (1). • Asia shows the biggest overall increase approx. 200 to 300 BTU over 2020-2040 (1) this may be caused by the continued growth in manufacturing (1) which uses large amounts of energy in the process (1). <p>Accept any other appropriate response. Note: data not required as part of response.</p>	(3)

Question number	Answer	Mark
1(h)	<p style="text-align: center;">AO2 (4 marks)</p> <p>Award 1 mark for initial explanation and an additional 1 mark for development through further explanation or exemplification. Maximum of 2 marks when no named developing country is used in context, or a developed country is used instead.</p> <p>A range of countries and examples could be chosen, based on either social, economic or environmental problems.</p> <ul style="list-style-type: none"> • In China the government have promoted the use of coal to generate electricity (1) this is because there is an energy gap and coal is plentiful within China (1). • People in China have become wealthier and now many people have cars which need fossil fuel as a source of energy (1). The increased use of cars is contributing to a range of local as well as national pollution issues alongside worries about enhanced greenhouse effect (1). • In China the government has recently encouraged new heavy manufacturing plants to relocation in some cities that are rapidly growing (1) therefore increasing the demand for electricity to run the machinery which is causing local air pollution issues (1). <p>Accept any other appropriate response.</p> <p>Note: Accept a city, e.g. Hong Kong can be accepted as China.</p>	(4)

Question number	Indicative content
1 (i)	<p style="text-align: center;">AO3 (4 marks)/AO4 (4 marks)</p> <p>Marking instructions</p> <p>Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below.</p> <p>Indicative content guidance</p> <p>The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include:</p> <p>AO3</p> <ul style="list-style-type: none"> • The primary sector is working with natural resources which includes farming, fishing, forestry mining and quarrying. • The quaternary sector is involved in information and communications as well as R&D and development. Universities are an important part of this sector.

	<ul style="list-style-type: none"> • The relative importance of primary and quaternary sectors (together with secondary and tertiary) is a good indicator of the level of economic development. • In general terms a LHD / developing economy relies heavily on the primary sector, whereas a county with VHHD has a recently, but rapidly growing quaternary sector. • Sectoral shifts are wedded to the development process (pathway) and it is a result of several other factors that come into play, including rural-urban migration, increasing wealth as well as wider considerations such as globalisation and developments in ICT. <p>AO4</p> <ul style="list-style-type: none"> • Figure 1c shows the decrease in primary from the pre-industrial, to industrial to post-industrial stages. • On Figure 1c, it can be seen that the most dramatic (steepest) drop in employment occurs for the primary sector during the industrial phase. • Figure 1c shows that absolute decline in numbers employed in primary sector, post-industrial, are relatively low. • Figure 1c shows that the in the post-industrial phase there is a growth of quaternary, starting from a 0 base. • Overall the percentage employed in quaternary remains low in the post-industrial, peaking at about 5% <p>Note only credit information and discussions around primary and quaternary employment.</p>	
Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1-3	<ul style="list-style-type: none"> • 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 that are supported by limited evidence. (AO3) • Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	4-6	<ul style="list-style-type: none"> • 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) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	7-8	<ul style="list-style-type: none"> • Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises

		<p>relevant understanding coherently leading to judgements that are supported by evidence throughout. (AO3)</p> <ul style="list-style-type: none">• Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)
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Question number	Answer	Mark
2(a)	<p style="text-align: center;">AO1 (1 mark)</p> <p>A Non-Governmental Organisation</p> <p>A is the correct answer as the other options do not have the correct meanings of the term.</p>	(1)

Question number	Answer	Mark
2(b)	<p style="text-align: center;">AO1 (1 mark)</p> <ul style="list-style-type: none"> • An impact / cause / factor / trigger which causes a bad / negative income on the overall economy of an area (1). • A problem that leads to / triggers other issues or problems occurring (1) • A spiral of decline that creates other issues, e.g. depopulation or lowers development and investment (1) • A chain of events that leads to a negative impact on the people / economy of an area (1). • Decline in one area creates decline in another area, e.g. negative feedback loop (1) <p>Accept any other appropriate response.</p> <p>Note: Do not accept “downwards spiral of decline” or “keeps getting worse over time” just on its own.</p>	(1)

Question number	Answer	Mark
2(c)	<p style="text-align: center;">AO1 (1 mark)</p> <p>D tundra</p> <p>D is the correct answer as the other options are smaller scale ecosystems, rather than biomes.</p>	(1)

Question number	Answer	Mark
2(d)	<p style="text-align: center;">AO2 (1 mark) / AO3 (1 mark)</p> <p>Award 1 mark (AO3) for a reason from the image and further mark (AO2) for extension through explanation, up to a maximum of 2 marks:</p>	

	<ul style="list-style-type: none"> • The land-use has changed away from growing crops to one where there are lots of tourists (1) as this will likely be a more profitable use of the land (1). • Lots of visitors and families evident (1) so this is the move away from using a farm traditionally for just crops and livestock (1). • Appears that barns (background) have been converted into spaces for visitors (1) rather than their likely original use as shelter for animals or storing machinery (1). • An area which is now for public use with families (1) which would not be likely in a farm which had not diversified (1). <p>Accept any other appropriate responses.</p>	(2)
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Question number	Answer	Mark
2(e)	<p style="text-align: center;">AO1 (1 mark)</p> <p>Award 1 mark for any of the following.</p> <ul style="list-style-type: none"> • Bed and breakfast / B&B (1) • Camping / caravanning (1) • Vineyard (1) • Camel farming (1) • Organic farming (1) • Selling farm produce / farm shop / farm café (1) • Making / selling cheese (1) • Fruit picking / PYO (1) • Farming crops as well as livestock / changing crops (1) • Energy crops / solar / wind (1) <p>Accept any other appropriate response.</p> <p>Note: Reject animal farms / petting zoo as too similar to (2d).</p>	(1)

Question number	Answer	Mark
2(f)	<p style="text-align: center;">AO2 (4 marks)</p> <p>Award 1 mark for an approach and a further expansion mark, up to a maximum of 2 marks each.</p> <ul style="list-style-type: none"> • Some governments have incentivised change and particular land management (1) e.g. CAP supporting prices for some farmers (1). • Some governments and agencies have supported diversification by offering grants and set-up costs (1) this has allowed the farmer to change land practice through a financial safety-net (1). • Farmers are paid to transform their landscape (1), e.g. there are government subsidies available for managing woodland for conservation (1). • Some developers have been supported to set up new mineral extraction areas / quarries (1) which have facilitated through grants and planning restrictions (1). <p>Accept any other appropriate response, e.g. rural-urban migration or urban-rural migration, counter urbanisation, mechanisation of farming, increasing tourism, green-belt development.</p>	(4)

Question number	Answer	Mark
2(g)	<p style="text-align: center;">AO1 (1 mark) / (AO3) 2 marks</p> <p>Award 1 mark for an identification of a reason and a further 2 marks for extension through explanation or description, up to a maximum of 3 marks.</p> <ul style="list-style-type: none"> • There is an increase in the amount of grain produced 100m tonnes (1949) to 621m tonnes (2015) (1) as farms have become more mechanised (1). They use machines efficiently to produce greater yields (1) • There is an increase in the amount of grain produced 100m tonnes (1949) to 621m tonnes (2015) (1) as farms have become larger (1) and therefore there is more land in agricultural production (1). <p>Accept any other appropriate response, which may include ideas around population increase and globalisation.</p>	(3)

Question number	Answer	Mark
2(h)	<p style="text-align: center;">AO2 (4 marks)</p> <p>Award 1 mark for initial explanation and an additional 1 mark for development through further explanation or exemplification. Maximum of 2 marks when no named developing country is used in context, or a developed country is used instead.</p> <p>A range of countries and groups / organisations could be chosen, based on either increasing production, switching to using “greener” approaches, or reducing demand, e.g. with policies and incentives.</p> <ul style="list-style-type: none"> • In the Vietnam Programme 133 the government has provided credit to farmers (1) and this is linked to local investment in infrastructure to help reduce poverty (1). • In Vietnam, NGOs have worked with the government also to provide better rural health and education services (1) which has lifted some people out of poverty (1). • UNICEF helps children in Africa have a better quality of life (1) by providing food and shelter to some communities (1). <p>Accept any other appropriate response. Note: group or organisation can be implicit or explicit.</p>	(4)

Question number	Indicative content
2 (i)	<p style="text-align: center;">AO3 (4 marks)/AO4 (4 marks)</p> <p>Marking instructions</p> <p>Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below.</p> <p>Indicative content guidance</p> <p>The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include:</p> <p>AO3</p> <ul style="list-style-type: none"> • The goods and services they provide are vital to sustaining well-being, and to future economic and social development. • All goods and services are important, but their significance will vary both spatially and temporally, depending on a range of factors. • There is a complex relationship between soils, climate and vegetation which affect this overall pattern of goods and services provided by a given biome or ecosystem; for example biomes with ample rainfall and warm temperatures may have high productivity and a larger amount of provisioning

	<ul style="list-style-type: none"> The pattern of biomes can be interrupted locally by people, e.g. agricultural systems which can modify the vegetation, although this map (Figure 2c) is unable to directly show these local scale effects. This can result in modification of goods and services. <p>AO4</p> <ul style="list-style-type: none"> Figure 2c shows that there are 4 types of goods and services: regulating, cultural, supporting and provisioning On Figure 2c, it can be seen that there is no hierarchy of goods and services; all are positioned equally within the triangle Figure 2c shows that each of the main goods and services contains a number of sub-ideas and linked systems related to the overarching function. 	
Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1-3	<ul style="list-style-type: none"> 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 that are supported by limited evidence. (AO3) Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	4-6	<ul style="list-style-type: none"> 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) Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	7-8	<ul style="list-style-type: none"> Applies understanding to deconstruct information and provide 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) Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

Question number	Answer	Mark
3(a)	<p style="text-align: center;">AO1 (1 mark)</p> <p>D population movement from urban areas to the countryside</p> <p>D is the correct answer as the other options do not have the correct meanings of the term.</p>	(1)

Question number	Answer	Mark
3(b)	<p style="text-align: center;">AO1 (1 mark)</p> <ul style="list-style-type: none"> • Idea of different people / groups/ cultures being separated (for some reason) (1) • People forced apart (1) • People living in divided communities (1) <p>Accept any other appropriate response. Allow ideas around exclusion.</p>	(1)

Question number	Answer	Mark
3(c)	<p style="text-align: center;">AO1 (1 mark)</p> <p>C A city with a population over 10 million people</p> <p>C is the correct answer as the other options do not have the correct indication of population or accurate description of the term.</p>	(1)

Question number	Answer	Mark
3(d)	<p style="text-align: center;">AO2 (1 mark) / AO3 (1 mark)</p> <p>Award 1 mark (AO2) for a reason further mark (AO3) for extension through explanation, up to a maximum of 2 marks:</p> <ul style="list-style-type: none"> • High density housing (1) which means that there is limited space for new developments (1). • Some housing appears unplanned / illegal as there is a lack of roads (1) which is often associated with rapid urbanisation (1). • Appears to be no evidence of traffic management, e.g. roads (1) which is an indicated of unplanned / illegal and rapid urban development (1). <p>Accept any other appropriate response.</p>	(2)

Question number	Answer	Mark
3(e)	<p style="text-align: center;">AO1 (1 mark)</p> <p>Award 1 mark for any of the following.</p> <ul style="list-style-type: none"> • (Urban) planners (1) • Local government / local authority (1) • National government / politicians (1) • NGOs / charitable foundations (1) • Developers (1) <p>Accept any other appropriate response, e.g. named organisation, e.g. London Cycling Campaign, TfL, Bedzed, Oxfam, KENSUP, CAFOD, UN, World Bank etc</p>	(1)

Question number	Answer	Mark
3(f)	<p style="text-align: center;">AO2 (2+2 marks)</p> <p>Award 1 mark for a management approach and a further expansion mark, up to a maximum of 2 marks each.</p> <ul style="list-style-type: none"> • Some places have provided grants to developers to build new housing (1) which has allowed people to move from over-crowded areas to newer and better-quality housing (1). • In some cities governments have planned and paid for better access to water and electricity supplies (1) which reduces pollution and allows people to do away with fires for cooking and lighting (1). • Transport routeways and nodes can influence urban quality of life so improving traffic speeds and flows is a solution (1) which will likely go on to improve local air quality conditions (1). • London congestion charge (1) means that people are encouraged to take public transport which reduces city pollution (1). <p>Accept any other appropriate response.</p>	(4)

Question number	Answer	Mark
3(g)	<p style="text-align: center;">AO1 (1 mark) / (AO3) 2 marks</p> <p>Award 1 mark for an identification of a link and a further 2 marks for extension through explanation or description, up to a maximum of 3 marks.</p> <p>Note any factor can be chosen, based on the information in Figure 3b.</p> <ul style="list-style-type: none"> • When there is better environmental quality there may be less pollution locally (1) which means that people can work more with less day's sick (1) which means that they have more disposable income and higher overall quality of life (1). • When there is greater community diversity there is often better community cohesion (1) which means that there may be less crime in an area (1) as the local community is more vigilant and more away and looks after members of their community (1). <p>Accept any other appropriate response.</p>	(3)

Question number	Answer	Mark
3(h)	<p style="text-align: center;">AO2 (4 marks)</p> <p>Award 1 mark for initial development idea and an additional 1 mark for development through further explanation or exemplification. Maximum of 2 marks when no named developing country is used in context, or a developed country is used instead.</p> <p>A range of countries and examples could be chosen, e.g. switching to using "greener" energy, ways of improving quality of life, "hortsiculture", housing, transport etc.</p> <ul style="list-style-type: none"> • In urban areas of Spain, the government have promoted the use of solar panels to generate electricity (1) this generates farm income for people in the rural-urban fringe (1). • In Spain, NGOs have worked with the government to pay for infrastructure improvements (1) which have lifted some people out of poverty as they can travel more easily from the rural area to the cities offering better employment (1). • Adding infrastructure such as public transport (1) which makes it easier for people to commute to work (1). <p>Accept any other appropriate response.</p>	(4)

Question number	Indicative content	
3 (i)	<p style="text-align: center;">A03 (4 marks)/AO4 (4 marks)</p> <p>Marking instructions Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below.</p> <p>Indicative content guidance The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include:</p> <p>A03</p> <ul style="list-style-type: none"> • Urbanisation is the increasing proportion of a countries population living in towns, cities and other urban areas. • Towns and cities are growing in size in most parts of the world. • Globally there is an uneven pattern of both urbanisation and rural living with traditionally lowest levels of urbanisation found in parts of Africa and South-East Asia. • Nowadays some of the most rapid rates of urbanisation can be seen in parts of China as well as India. • There are a number of drivers, but importantly high rates of urbanisation are found in developing economies because most new economic developments are found in big cities and there are push factors operating to drive people away from rural areas. • Projections may not be reliable long-term, so caution should be heeded, especially with regard to the overall population increase. <p>AO4</p> <ul style="list-style-type: none"> • On Figure 3c, it can be seen that there is an overall (linear) increase in total population from 2.5 billion to projected 8+ billion in 2030. • The worlds rural population peaks around 2005 and then there is a small relative decreased projected up to 2030. • The worlds urban population shows a gradual and even rise from 1950 to a predicted rise of up to 5billion in 2030. • Between 2005 and 2010 urban populations overtake rural populations, as a proportion, for the first time. 	
Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1-3	<ul style="list-style-type: none"> • 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 that are supported by limited evidence. (AO3). • Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4).

Level 2	4-6	<ul style="list-style-type: none">• 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)• Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	7-8	<ul style="list-style-type: none">• Applies understanding to deconstruct information and provide 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)• Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

Question number	Answer	Mark
4(a)(i)	<p style="text-align: center;">AO3 (1 mark)</p> <p>Award 1 mark for any of the following.</p> <ul style="list-style-type: none"> • Systematic (1) • Stratified (1) • Random (1) • Pragmatic (1) • Opportunistic (1) <p>Accept any other appropriate response.</p> <p>Note: Title not required for credit.</p>	(1)

Question number	Answer	Mark
4(a)(ii)	<p style="text-align: center;">AO3 (2 marks)</p> <p>Award 1 mark for a reason further mark for extension through explanation, up to a maximum of 2 marks:</p> <ul style="list-style-type: none"> • It allowed find out about the spatial variation in the area of study (1) so that we knew that we would get good spatial coverage to minimise bias (1). • Stratified sampling was used as we had census data about the towns population (1) so we could design a fair sampling frame for the questionnaire about energy that we were using (1). <p>Accept any other appropriate response, e.g. asking "different people" is allowable.</p>	(2)

Question number	Answer	Mark
4(b)	<p style="text-align: center;">A03 (2 marks)</p> <p>Award 1 mark for identifying a risk and a further expansion mark up to a maximum of 2 marks.</p> <p>Nature of risk, and risk management will vary depending on the location as well as the context of the investigation.</p> <ul style="list-style-type: none"> • In the urban area there was lots of traffic so risk the was being struck by a vehicle (1). This was managed by only using a designed crossing (1). • Fieldwork was carried out in winter so there was a small risk of hypothermia (1). Lots of warm clothes were used (1). • The wet pavements in the town presented a slip and trip risk. (1). Non-slip shoes were used to minimise the risk of falling over (1). • I knew that the title focus had published secondary data (1) therefore it was achievable in terms of testing against someone else's findings – reducing risk (1). <p>Accept any other appropriate response. Note – credit ideas related to risk of poor-quality data collection.</p>	(2)

Question number	Answer	Mark
4(c)	<p style="text-align: center;">A03 (3 marks)</p> <p>Award 1 mark for each of the following identifiers:</p> <ul style="list-style-type: none"> • Locations that can be identified e.g. places (1) • Site numbers along a street / locations of sampling etc (1). • Justifications and reasons, developed through explanation and clear geography (2). • Scale and direction arrows, titles, key etc (award a max of 1 mark total) (1). <p>Note: If work does not include annotations or descriptive labels, then max 2 marks.</p>	(3)

Question number	Answer	Mark
4(d)	<p style="text-align: center;">AO3 (4 marks)</p> <p>Award 1 mark for limitation of a method and a further expansion mark, up to a maximum of 2 marks each.</p> <p>Nature of qualitative techniques utilised will vary depending on the location as well as the context of the investigation.</p> <ul style="list-style-type: none"> • Interview data from a number of respondents were used to find out about attitudes towards energy use (1) but it was only a small sample (1) so we could not be convinced about the strength of the conclusions (1). • Digital photographs were taken of the fieldwork equipment to measure noise (1) so that this could be later used to help evaluate the methods and their reliability (1) but the photos did not include an effective scale (1). • Field notes recorded aspects of the site location and a description (1). The notes difficult to do since we did not know the history of the area (1) so I was unable to trust their validity (1). <p>Accept any other appropriate response, allow questionnaires and EQA / Bi-polar (as opinion) as being qualitative data.</p>	(4)

Question number	Indicative content
4(e)	<p style="text-align: center;">AO3 (4 marks)/AO4 (4 marks)</p> <p>Marking instructions</p> <p>Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below.</p> <p>Indicative content guidance</p> <p>The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include:</p> <p>AO3</p> <ul style="list-style-type: none"> • Both Figures 4a and 4b do show some outcomes from the fieldwork surveys, therefore it is possible to make some sense of what the student found. • Perhaps not all data has been presented.

	<ul style="list-style-type: none"> • Figure 4a seems incomplete as the nature of the questions asked is not present on the key so it's difficult to draw conclusions. • Figure 4b only shows one picture, so this might be biased as some could have been missed, therefore this technique is limited in its appropriateness. • Recognition of issue in presentation (both Figure 4a and b) may be flawed in terms of approach and usage. • An evaluation of how far the presentation techniques can be trusted may be provided. <p>AO4</p> <ul style="list-style-type: none"> • In Figure 4a there is no totals column for the Peoples Responses • In Figure 4a, some rows have incorrect addition • In Figure 4a the strongly agree category has been • In Figure 4a the colours may be the wrong choice of plot technique • In Figure 4b only 2 opinions are shown (there may have been more). • In Figure 4b the viewer doesn't know anything about the time the photo was taken, and therefore the frequency of lorry movements etc. • In Figure 4b don't anything about the area / context of where the image is take. 	
Level	Mark	Descriptor
	0	No acceptable response.
Level 1	1-3	<ul style="list-style-type: none"> • 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) • Few aspects of the enquiry process are supported by the use of geographical skills to obtain information, which has limited relevance and accuracy. Communicates generic fieldwork findings and uses limited relevant geographical terminology. (AO4)
Level 2	4-6	<ul style="list-style-type: none"> • 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) • Some aspects of the enquiry process are supported by the use of geographical skills. Communicates fieldwork findings with some clarity, using relevant geographical terminology occasionally. (AO4)

Level 3	7-8	<ul style="list-style-type: none">• Applies understanding to deconstruct information and provide 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)• All aspects of the enquiry process are supported by the use of geographical skills. Communicates enquiry-specific fieldwork findings with clarity, and uses relevant geographical terminology consistently. (AO4)
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Question number	Answer	Mark
5(a)(i)	<p style="text-align: center;">AO3 (1 mark)</p> <p>Award 1 mark for any of the following.</p> <ul style="list-style-type: none"> • Systematic (1) • Stratified (1) • Random (1) • Pragmatic (1) • Opportunistic (1) <p>Accept any other appropriate response.</p> <p>Note: Title not required for credit.</p>	(1)

Question number	Answer	Mark
5(a)(ii)	<p style="text-align: center;">AO3 (2 marks)</p> <p>Award 1 mark for a reason further mark for extension through explanation, up to a maximum of 2 marks:</p> <ul style="list-style-type: none"> • It allowed find out about the spatial variation in the area of study (1) so that we knew that we would get good spatial coverage to minimise bias (1). • Stratified sampling was used as we had census data about the village population (1) so we could design a fair sampling frame for the questionnaire about energy that we were using (1). <p>Accept any other appropriate response, e.g. asking "different people" is allowable.</p>	(2)

Question number	Answer	Mark
5(b)	<p style="text-align: center;">AO3 (2 marks)</p> <p>Award 1 mark for identifying a risk and a further expansion mark up to a maximum of 2 marks.</p>	

	<p>Nature of risk, and risk management will vary depending on the location as well as the context of the investigation.</p> <ul style="list-style-type: none"> • In the urban area there was lots of traffic so risk the was being struck by a vehicle (1). This was managed by only using a designed crossing (1). • Fieldwork was carried out in winter so there was a small risk of hypothermia (1). Lots of warm clothes were used (1). • The wet pavements in the town presented a slip and trip risk. (1). Non-slip shoes were used to minimise the risk of falling over (1). • I knew that the title focus had published secondary data (1) therefore it was achievable in terms of testing against someone else's findings – reducing risk (1). <p>Accept any other appropriate response. Note – credit ideas related to risk of poor-quality data collection.</p>	(2)
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Question number	Answer	Mark
5(c)	AO3 (3 marks)	
	<p>Award 1 mark for each of the following identifiers:</p> <ul style="list-style-type: none"> • Locations that can be identified e.g. places (1) • Site numbers along a street / locations of sampling etc (1). • Justifications and reasons, developed through explanation and clear geography (2). • Scale and direction arrows, titles, key etc (award a max of 1 mark total) (1). <p>Note: If work does not include annotations or descriptive labels, then max 2 marks.</p>	(3)

Question number	Answer	Mark
5(d)	AO3 (4 marks)	
	<p>Award 1 mark for a method and a further expansion mark, up to a maximum of 2 marks each.</p> <p>Nature of qualitative techniques utilised will vary depending on the location as well as the context of the investigation.</p>	

	<ul style="list-style-type: none"> • Interview data from a number of respondents were used to find out about attitudes towards change in rural areas (1) but it was only a small sample (1) so we could not be convinced about the strength of the conclusions (1). • Digital photographs were taken of the fieldwork equipment to measure noise (1) so that this could be later used to help evaluate the methods and their reliability (1) but the photos did not include an effective scale (1). • Field notes recorded aspects of the site location and a description (1). The notes difficult to do since we did not know the history of the area (1) so I was unable to trust their validity (1). <p>Accept any other appropriate response, allow questionnaires and EQA / Bi-polar (as opinion) as being qualitative data.</p>	(4)
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Question number	Indicative content
5(e)	<p style="text-align: center;">A03 (4 marks)/A04 (4 marks)</p> <p>Marking instructions</p> <p>Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below.</p> <p>Indicative content guidance</p> <p>The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include:</p> <p>A03</p> <ul style="list-style-type: none"> • Both Figures 5a and 5b do show some outcomes from the fieldwork surveys, therefore it is possible to make some sense of what the student found. • Figure 5a seems incomplete as the nature of the questions asked is not present on the key so it's difficult to draw conclusions. • Figure 5b only shows one picture, so this might be biased as some could have been missed, therefore this technique is limited in its appropriateness. • Recognition of issue in presentation (both Figure 5a and 5b) may be flawed in terms of approach and usage. • An evaluation of how far the presentation techniques can be trusted may be provided. <p>A04</p> <ul style="list-style-type: none"> • In Figure 5a there is no totals column for the Peoples Responses • In Figure 5a, some rows have incorrect addition

		<ul style="list-style-type: none"> • In Figure 5a there is no strongly agree category • In Figure 5a the colours may be the wrong choice of plot technique • In Figure 5b only 2 opinions are shown (there may have been more). • In Figure 5b the viewer doesn't know anything about the time the photo was taken, and therefore the frequency of lorry movements etc. • In Figure 5b don't anything about the area / context of where the image is taken.
Level	Mark	Descriptor
	0	No acceptable response.
Level 1	1-3	<ul style="list-style-type: none"> • 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) • Few aspects of the enquiry process are supported by the use of geographical skills to obtain information, which has limited relevance and accuracy. Communicates generic fieldwork findings and uses limited relevant geographical terminology. (AO4)
Level 2	4-6	<ul style="list-style-type: none"> • 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) • Some aspects of the enquiry process are supported by the use of geographical skills. Communicates fieldwork findings with some clarity, using relevant geographical terminology occasionally. (AO4)
Level 3	7-8	<ul style="list-style-type: none"> • Applies understanding to deconstruct information and provide 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) • All aspects of the enquiry process are supported by the use of geographical skills. Communicates enquiry-specific fieldwork findings with clarity, and uses relevant geographical terminology consistently. (AO4)

Question number	Answer	Mark
6(a)(i)	<p style="text-align: center;">AO3 (1 mark)</p> <p>Award 1 mark for any of the following.</p> <ul style="list-style-type: none"> • Systematic (1) • Stratified (1) • Random (1) • Pragmatic (1) • Opportunistic (1) <p>Accept any other appropriate response.</p> <p>Note: Title not required for credit.</p>	(1)

Question number	Answer	Mark
6(a)(ii)	<p style="text-align: center;">AO3 (2 marks)</p> <p>Award 1 mark for a reason further mark for extension through explanation, up to a maximum of 2 marks:</p> <ul style="list-style-type: none"> • It allowed find out about the spatial variation in the area of study (1) so that we knew that we would get good spatial coverage to minimise bias (1). • Stratified sampling was used as we had census data about the towns population (1) so we could design a fair sampling frame for the questionnaire about urban change that we were using (1). <p>Accept any other appropriate response, e.g. asking "different people" is allowable.</p>	(2)

Question number	Answer	Mark
6(b)	<p style="text-align: center;">A03 (2 marks)</p> <p>Award 1 mark for identifying a risk and a further expansion mark up to a maximum of 2 marks.</p> <p>Nature of risk, and risk management will vary depending on the location as well as the context of the investigation.</p> <ul style="list-style-type: none"> • In the urban area there was lots of traffic so risk the was being struck by a vehicle (1). This was managed by only using a designed crossing (1). • Fieldwork was carried out in winter so there was a small risk of hypothermia (1). Lots of warm clothes were used (1). • The wet pavements in the town presented a slip and trip risk. (1). Non-slip shoes were used to minimise the risk of falling over (1). • I knew that the title focus had published secondary data (1) therefore it was achievable in terms of testing against someone else's findings – reducing risk (1). <p>Accept any other appropriate response. Note – credit ideas related to risk of poor-quality data collection.</p>	(2)

Question number	Answer	Mark
6(c)	<p style="text-align: center;">A03 (3 marks)</p> <p>Award 1 mark for each of the following identifiers:</p> <ul style="list-style-type: none"> • Locations that can be identified e.g. places (1) • Site numbers along a street / locations of sampling etc (1). • Justifications and reasons, developed through explanation and clear geography (2) • Scale and direction arrows, titles, key etc (award a max of 1 mark total) (1). <p>Note: If work does not include annotations or descriptive labels, then max 2 marks.</p>	(3)

Question number	Answer	Mark
6(d)	<p style="text-align: center;">AO3 (4 marks)</p> <p>Award 1 mark for a method and a further expansion mark, up to a maximum of 2 marks each.</p> <p>Nature of qualitative techniques utilised will vary depending on the location as well as the context of the investigation.</p> <ul style="list-style-type: none"> • Interview data from a number of respondents were used to find out about attitudes towards change in urban areas (1) but it was only a small sample (1) so we could not be convinced about the strength of the conclusions (1). • Digital photographs were taken of the fieldwork equipment to measure noise (1) so that this could be later used to help evaluate the methods and their reliability (1) but the photos did not include an effective scale (1). • Field notes recorded aspects of the site location and a description (1). The notes difficult to do since we did not know the history of the area (1) so I was unable to trust their validity (1). <p>Accept any other appropriate response.</p>	(4)

Question number	Indicative content
6(e)	<p style="text-align: center;">AO3 (4 marks)/AO4 (4 marks)</p> <p>Marking instructions</p> <p>Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below.</p> <p>Indicative content guidance</p> <p>The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include:</p> <p>AO3</p> <ul style="list-style-type: none"> • Both Figures 6a and 6b do show some outcomes from the fieldwork surveys, therefore it is possible to make some sense of what the student found. • Figure 6a seems incomplete as the nature of the questions asked is not present on the key so it's difficult to draw conclusions.

	<ul style="list-style-type: none"> • Figure 6b only shows one picture, so this might be biased as some could have been missed, therefore this technique is limited in its appropriateness. • Recognition of issue in presentation (both Figure 6a and 6b) may be flawed in terms of approach and usage. • An evaluation of how far the presentation techniques can be trusted may be provided. <p>AO4</p> <ul style="list-style-type: none"> • In Figure 6a there is no totals column for the Peoples Responses • In Figure 6a, some rows have incorrect addition • In Figure 6a there is no strongly agree category • In Figure 6a the colours may be the wrong choice of plot technique • In Figure 6b only 2 opinions are shown (there may have been more). • In Figure 6b the viewer doesn't know anything about the time the photo was taken, and therefore the frequency of lorry movements etc. • In Figure 6b don't anything about the area / context of where the image is taken. 	
Level	Mark	Descriptor
	0	No acceptable response.
Level 1	1-3	<ul style="list-style-type: none"> • 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) • Few aspects of the enquiry process are supported by the use of geographical skills to obtain information, which has limited relevance and accuracy. Communicates generic fieldwork findings and uses limited relevant geographical terminology. (AO4)
Level 2	4-6	<ul style="list-style-type: none"> • 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) • Some aspects of the enquiry process are supported by the use of geographical skills. Communicates fieldwork findings with some clarity, using relevant geographical terminology occasionally. (AO4)
Level 3	7-8	<ul style="list-style-type: none"> • Applies understanding to deconstruct information and provide 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)

		<ul style="list-style-type: none"> All aspects of the enquiry process are supported by the use of geographical skills. Communicates enquiry-specific fieldwork findings with clarity, and uses relevant geographical terminology consistently. (AO4)
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Question number	Answer	Mark
7(a)(i)	<p style="text-align: center;">AO1 (1 mark)</p> <ul style="list-style-type: none"> Water vapour Carbon dioxide / CO₂ Methane / CH₄ Nitrous oxide / NO Ozone / O₃ Chlorofluorocarbons (CFCs) Hydrofluorocarbons (incl. HCFCs and HFCs) <p>Reject burning fossil fuels with no gas stated. Reject carbon monoxide as it is not considered a greenhouse gas.</p>	(1)

Question number	Answer	Mark
7(a)(ii)	<p style="text-align: center;">AO1 (1 mark)</p> <p>B warming of the Earth's atmosphere resulting from human activities</p> <p>B is the correct answer as the other options do not have the correct meanings of the term.</p>	(1)

Question number	Answer	Mark
7(a)(iii)	<p style="text-align: center;">AO1 (1 mark)</p> <p>A cyclical movement of the Earth's orbit around the sun</p> <p>A is the correct answer as the other options do not have the correct meanings of the term.</p>	(1)

Question number	Answer	Mark
7(b)(i)	<p style="text-align: center;">AO3 (2 marks)</p> <p>Award 1 mark for any of the following, up to a maximum of 2 marks.</p> <p style="margin-left: 40px;">Most = China (1) Least = Kenya (1)</p>	(2)

Question number	Answer	Mark
7(b)(ii)	<p style="text-align: center;">AO2 (2 marks) / AO3 (2 marks)</p> <p>Award 1 mark for the identification of a possible reason for the pattern shown on Figure 7a (AO3) and a further mark for an explanation of the reason (AO2), up to a maximum of 2 marks per idea.</p> <ul style="list-style-type: none"> • Energy consumption can be linked to development (1) so countries which are rich and developed, e.g. USA have greater energy demands (1). • Low population densities mean that there is least energy consumed (1) so smaller amount of total emissions (1). • Manufacturing in places like China (1) helps explain the countries high total carbon footprint (1). • Cheap availability of oil, e.g. Middle East creates demand for carbon-based energy (1) as the fuel is lower cost and affordable (1) <p>Accept any other appropriate response.</p>	(4)

Question number	Answer	Mark
7(c)	<p style="text-align: center;">AO1 (2 marks) / AO2 (2 marks)</p> <p>Award 1 mark (AO1) for identification of effect and a further mark (AO2) for an explanation of the reason, up to a maximum of 2 marks per idea:</p> <ul style="list-style-type: none"> • Loss of species richness from increased heat and heatwaves (1) so this means increased temperatures will greatly affect places where ecosystems are already under stress (1). • Sea level rise affecting many low lying coastal areas and world cities (1). Linked effects of salinization and loss of biodiversity (1). 	

	<ul style="list-style-type: none"> • Droughts, and prolonged drought for some areas (1) leading to loss of health and ecosystem stress (1). • Knock-on effects may be increased tensions over natural resources at risk from climate change (1) and even greater risk of conflict in areas with fragile environments (1). <p>Accept any other appropriate response, e.g. can be linked effects on people through environmental degradation.</p>	(4)
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Question number	Answer	Mark
7(d)(i)	<p style="text-align: center;">(AO4) 2 marks</p> <p>Award 1 mark for a correct answer and one mark for working:</p> <p>1960 = 0.1 and 2015 = 2.7 (1) or working out with similar numbers, i.e. understands idea of difference / subtraction (highest and lowest values).</p> <p>Range = 2.6 (1)</p> <p>Allow 2.4-2.8 as correct.</p> <p>Note units not required.</p>	(2)

Question number	Answer	Mark
7(d)(ii)	<p style="text-align: center;">A03 (2 marks)</p> <p>Award 1 mark for the identification of a trend and 1 mark for further detail through evidence from the resource from the resource, up to a maximum of 2 marks.</p> <ul style="list-style-type: none"> • Overall there has been a substantial increase in CO₂ emissions 0.3- just under 10 gigatonnes (1). The greatest increase was in the last 15 years (1). • Overall there has been a substantial increase in CO₂ emissions 0.3- just under 10 gigatonnes (1). The rate of increase was however slower between 1960 1995 compared to the period after that (1). <p>Accept any other appropriate response. Must state an overall trend, i.e. increase, for credit. Data not required for credit.</p>	(2)

Question number	Indicative content	
7(e)	<p style="text-align: center;">AO3 (3 marks)/AO4 (3 marks)</p> <p>Marking instructions Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below.</p> <p>Indicative content guidance The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include:</p> <p>AO3</p> <ul style="list-style-type: none"> • The most important factors locally are likely to be conversion of forest to agriculture, illegal logging and mining. But the impacts of these will vary spatially and will depend on the geo-political arrangements in that country / region. • Longer term climate-change is a worrying factor because of its scale of impacts and the positive feedback / amplification mechanism so, conversion of forest to livestock farming is an example • Development and globalisation are underlying factors that drive air travel, and increasing demand for energy. These are linked to population growth in some parts of the world so play a significant role. • Drivers are often interlinked and there can be a chain of effects that increase the likelihood of climate change. <p>AO4</p> <ul style="list-style-type: none"> • Figure 7c shows a range of different drivers which are all linked to human activity and climate change. • Figure 7c shows drivers that can operate at different geographical scales and have very different root causes. • Figure 7c shows that deforestation has an indirect impact, whereas the others are more direct causes and rivers. • Figure 7c indicates that there is only a limited number of drivers, but for some places there may be more which are not on the diagram. 	
Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	<ul style="list-style-type: none"> • 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 that are supported by limited evidence. (AO3) • Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	4–6	<ul style="list-style-type: none"> • 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)

		<ul style="list-style-type: none"> • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
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Question number	Indicative content
7 (f)	<p style="text-align: center;">AO2 (4 marks), AO3 (4 marks), AO4 (4 marks)</p> <p>Marking instructions Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below.</p> <p>Indicative content guidance The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include:</p> <p>AO2</p> <ul style="list-style-type: none"> • Responses to climate change are many and varied. • Responses can be shorter-term as well as longer term and they can be mitigate (reduce cause) or adaptation (live with impacts) • Responses can be localised, e.g. managing traffic, more sustainable buildings and heating systems. • Responses can be based round “polluter pays” principle or more of an incentivised solution, e.g. FITs to encourage green energy technology. <p>AO3</p> <ul style="list-style-type: none"> • Countries, places and regions which have the greatest carbon footprints do not always have the most robust solutions in terms of responses. • Cutting of CO2 emissions is complex, controversial and politically difficult, especially taken as a long-term objective where growth and development might be at risk. • In order for mitigation responses to be effective, many would argue that they need to be global, rather than country or even regionally-based. • Some places might see adaptation as the best responses as they have the resources and technical capability to withstand shorter and longer-term climate change shocks and impacts. • The development pathways to secure money for climate change responses going from the richest nations to the poorest to counter the most significant drivers is seen as a good approach. <p>AO4</p> <ul style="list-style-type: none"> • Figure 7a shows “hotspots” in China, India and USA especially as well as much of Europe if taken as a region in itself. • Figure 7a shows some countries and regions have made very little contribution to carbon emissions, e.g. parts of Sub-Saharan Africa.

Question number	Indicative content	
	<ul style="list-style-type: none"> • Figure 7b shows a range of different drivers which are all linked to human activity and climate change. • Figure 7b shows causes that can operate at different geographical scales. • Figure 7b shows that deforestation can be linked to agricultural land conversion e.g. livestock farming. 	
Level	Mark	Descriptor
	0	No acceptable response.
Level 1	1–4	<ul style="list-style-type: none"> • Demonstrates isolated elements of understanding of concepts and the interrelationship between 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) • Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	5–8	<ul style="list-style-type: none"> • Demonstrates elements of understanding of concepts and the interrelationship between 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) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	9–12	<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. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) • Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

Question number	Answer	Mark
8(a)(i)	<p style="text-align: center;">AO1 (1 mark)</p> <p>C people moving across international borders</p> <p>C is the correct answer as the other options do not have the correct meaning of the term.</p>	(1)

Question number	Answer	Mark
8(a)(ii)	<p style="text-align: center;">AO1 (1 mark)</p> <p>C International Monetary Fund</p> <p>C is the correct answer as the other options do not have the correct meaning of the term.</p>	(1)

Question number	Answer	Mark
8(b)	<p style="text-align: center;">AO1 (1 mark)</p> <p>Award 1 mark for any of the following:</p> <ul style="list-style-type: none"> • The reasons why people leave a particular area (1) • Negative factors / influences causing people to move away from a particular area (1). <p>Accept any other reasonable interpretation.</p>	(1)

Question number	Answer	Mark
8(c)(i)	<p style="text-align: center;">AO3 (2 marks)</p> <p>Award 1 mark for any of the following, up to a maximum of 2 marks.</p> <p>Highest: Sweden (1) Lowest: Madagascar (1)</p>	(2)

Question number	Answer	Mark
8(c)(ii)	<p style="text-align: center;">AO2 (2 marks) / AO3 (2 marks)</p> <p>Award 1 mark for the identification of a pattern shown on the map (AO3) and a further mark for an explanation of the reason (AO2), up to a maximum of 2 marks. per idea.</p> <ul style="list-style-type: none"> • Low connectivity (red) e.g. places in SE Asia (1) due to government corruption so no money spent on infrastructure (1). • Low levels of internet speeds in parts of Africa (1) due to low levels of a country's development (1). • High levels of connectivity such as USA (1) as the country / region is wealthy has a good R&D base (1). • Places that have wars and conflict have low speeds (1) this is because of a lack of government stability (1). <p>Accept any other appropriate response. Idea must be based on something from the map.</p>	(4)

Question number	Answer	Mark
8(d)	<p style="text-align: center;">AO1 (2 marks) / AO2 (2 marks)</p> <p>Award 1 mark (AO1) for identification of impact and a further mark (AO2) for an explanation of the reason, up to a maximum of 2 marks per idea:</p> <ul style="list-style-type: none"> • A bigger pool and choice of labour (1) so this means increased efficiency in local economy (1). • Wealth is generated locally by migrants (1) so local shops and other services all benefit from the spending power of migrants in the destination country. (1). • Migrants often do many unskilled jobs for a very little wage (1) so returns by employers on productivity gains can be realised (1). • Immigrants provide the cultural diversity in many places (1). Diversity helps people to better appreciate humanity and human rights in general (1). <p>Accept any other appropriate response.</p>	(4)

Question number	Answer	Mark
8(e)(i)	<p style="text-align: center;">AO4 (2 marks)</p> <p>Award 1 mark for a correct answer and one mark for working:</p> <p>Highest score = 78 and lowest = 20 (1) or working out with similar numbers, i.e. understands idea of difference / subtraction (highest and lowest values).</p> <p>Range = 58 (1).</p> <p>Allow 56-60 as correct.</p>	(2)

Question number	Answer	Mark
8(e)(ii)	<p style="text-align: center;">A03 (2 marks)</p> <p>Award 1 mark for the identification of a difference and 1 mark for further detail through description, OR an additional difference from the resource, up to a maximum of 2 marks.</p> <ul style="list-style-type: none"> • There is considerable variation in averages between Europe and Sub-Saharan (1) where the average score is about 20 points lower (1). • Europe has a much higher “lowest” score than S-S Africa (1) but the means are closer together (1). <p>Accept any other appropriate response, including those that use range data for comparison. Must use comparison / difference for credit.</p> <p>Note: Explicit data not required for 2 marks.</p>	(2)

Question number	Indicative content	
8(f)	<p style="text-align: center;">AO3 (3 marks)/AO4 (3 marks)</p> <p>Marking instructions Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below.</p> <p>Indicative content guidance The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include:</p> <p>AO3</p> <ul style="list-style-type: none"> • There is now a global economy and few regions are not affected, or part of globalisation although they have different levels of connectivity. • The most important factors are likely to be transport technology and ICT. But the effects of these will vary spatially and will depend on the geo-political arrangements in that country / region. • Others would argue global shift and changes in the operations of TNCs (remote-working and outsourcing) have been a key driver and some places, this is a factor that in the future will likely be very significant. • Causal factors are often interlinked and there can be a chain of events that encourage and enable globalisation • There could be some factors that in some regions are local or cultural which are not on this list and should not be overlooked. <p>AO4</p> <ul style="list-style-type: none"> • Figure 8c shows a range of different causes which are all possible drivers of globalisation • Figure 8c shows causes that can operate at different geographical scales. • Figure 8c indicates that there is only a limited number of causes, but for some places there may be more. 	
Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	<ul style="list-style-type: none"> • 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 that are supported by limited evidence. (AO3) • Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	4–6	<ul style="list-style-type: none"> • 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)

	<ul style="list-style-type: none"> • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
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Question number	Indicative content
8 (g)	<p style="text-align: center;">AO2 (4 marks), AO3 (4 marks), AO4 (4 marks)</p> <p>Marking instructions</p> <p>Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below.</p> <p>Indicative content guidance</p> <p>The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include:</p> <p>AO2</p> <ul style="list-style-type: none"> • The term globalisation is complex; it can be defined in a range of ways, often to suit different arguments • There are a range of impacts of globalisation, some negative and some positive affecting people and their economies. It creates winners and losers • The causes of globalisation are many and varied. They include: communication technology, transport technology, TNCs and global businesses as well as the removal of trade barriers. <p>AO3</p> <ul style="list-style-type: none"> • The distributed impacts of globalisation depends on the operation of the causes and process, e.g. global shift of manufacturing, increased connectivity etc. • Unquestionably globalisation has delivered many benefits for many people including greater consumer choice, poverty reduction. But it has been coupled with losses of jobs in some areas where other places, especially SE Asia have seen big job increases in the last 20-40 years. • The challenge of globalisation of the issue is that crosses international boundaries – and therefore international cooperation is crucial– but these agreements are never straight forward to arrive at, or to implement. Different countries and places will have different approaches to trade agreements and barriers. • Globalisation is very strongly linked to mass and international migration. In the future as people become more connected, then globalisation will increase globally in otherwise “unconnected” areas (e.g. those in Figure 8a). • Globalisation impacts which are viewed as negative by some can vary spatially and temporally, which means that management solutions often have to be tailored locally or regionally, so the global aspect is difficult.

Question number	Indicative content	
	<ul style="list-style-type: none"> • Globalisation remains a hotly contested idea and there is a curtly and anti-globalisation movement growing in some political circles. <p>AO4</p> <ul style="list-style-type: none"> • Figure 8a shows red “not-spots” of central Africa and parts of the Middle East, South America and SE Asia. • Figure 8a shows that Europe, N America and Australia for example have high scores of internet speed. • Figure 8b Shows there is variation in ease of doing business across regions, but highest scores are similar, between 70-80. • Figure 8b Latin America and Sub-Saharan Africa have the lowest scores, with Sub -Saharan Africa having the lowest average. • Figure 8c shows a range of different causes which are all possible drivers of globalisation • Figure 8c shows causes that can operate at different geographical scales. • Figure 8c indicates that there is only a limited number of causes, but for some places there may be more. 	
Level	Mark	Descriptor
	0	No acceptable response.
Level 1	1-4	<ul style="list-style-type: none"> • Demonstrates isolated elements of understanding of concepts and the interrelationship between 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) • Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	5-8	<ul style="list-style-type: none"> • Demonstrates elements of understanding of concepts and the interrelationship between 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) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	9-12	<ul style="list-style-type: none"> • Demonstrates accurate understanding of concepts and the interrelationship of places, environments and processes. (AO2)

Question number	Indicative content	
		<ul style="list-style-type: none"> 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) Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

Question number	Answer	Mark
9(a)(i)	AO1 (1 mark)	
	<p>A a person's well-being in terms of health and happiness</p> <p>A is the correct answer as the other options do not have the correct meaning of the term.</p>	(1)

Question number	Answer	Mark
9(a)(ii)		
	<p>D unequal access to resources and services</p> <p>D is the correct answer as the other options do not have the correct meaning of the term.</p>	(1)

Question number	Answer	Mark
9(b)	AO1 (1 mark)	
	<ul style="list-style-type: none"> The widening difference in levels of development between the world's richest and poorest countries (1). Differences in development between countries (1). Differences in development within a country (1). A "gap" or disparity between the richest and poorest people (in the world) (1). <p>Accept any other appropriate response, including ideas around inequality and uneven development globally, regionally or within a country.</p>	(1)

Question number	Answer	Mark
9(c)(i)	<p style="text-align: center;">AO3 (2 marks)</p> <p>Award 1 mark for any of the following, up to a maximum of 2 marks.</p> <ul style="list-style-type: none"> • Highest = South Africa (1) • Lowest = Norway (1) 	(2)

Question number	Answer	Mark
9(c)(ii)	<p style="text-align: center;">AO2 (2 marks) / AO3 (2 marks)</p> <p>Award 1 mark for the identification of a possible reason for the pattern shown on Figure 9a (AO3) and a further mark for an explanation of the reason (AO2), up to a maximum of 2marks per idea.</p> <ul style="list-style-type: none"> • In countries with high inequality, e.g. China (1) have different historical contexts which have lead to inequality (1). • In countries with high inequality such as many LICs (1) they are less wealthy and possibly more corrupt (1). • In countries with low inequality such as Norway (1) then they have fairer political systems (1). <p>Accept any other appropriate response.</p> <p>Note: Specific countries or regions do not need to be identified for credit.</p>	(4)

Question number	Answer	Mark
9(d)	<p style="text-align: center;">AO1 (2 marks) / AO2 (2 marks)</p> <p>Award 1 mark (AO1) for the identification of a strategy and a further mark (AO2) for an explanation of the reason, up to a maximum of 2 marks per idea:</p> <ul style="list-style-type: none"> • Official aid can be used to provide loans to some people (1) so that they are able to buy equipment in order to farm more efficiently (1). • Bilateral aid works by a government giving aid to another countries government (1) so this could be used to help an economy develop, e.g. supporting the development of natural resources (1). 	

	<ul style="list-style-type: none"> Trade can be used as a tool to stimulate economic development (1) by encouraging the flows of goods and services between nations (1). <p>Accept any other appropriate response.</p>	(4)
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Question number	Answer	Mark
9(e)(i)	<p style="text-align: center;">AO4 (2 marks)</p> <p>Award 1 mark for a correct answer and 1 mark for working:</p> <p>1980 = 0.495 (or 0.49) and 2016 = 0.74 (1) or working out with similar numbers, i.e. understands idea of difference / subtraction (highest and lowest values).</p> <p>Range = 0.25 or 0.245 (1)</p> <p>Allow 0.24 - 0.26 as correct.</p>	(2)

Question number	Answer	Mark
9(e)(ii)	<p style="text-align: center;">AO3 (2 marks)</p> <p>Award 1 mark for the identification of a change and 1 mark for further detail through description from the resource, up to a maximum of 2 marks.</p> <ul style="list-style-type: none"> It has increased (1) but then decreased since 2010. (1). It has increased (1) but rates of increase vary considerably over the time period. (1). It has overall increased (1) with the steepest rate of increase between 1980 and 2000 (1). There is mostly a gentle rate of increase (1), although the period 2000-2010 shows a more rapid rate of change (1). <p>Accept any other appropriate response.</p> <p>Explicit data not required for 2 marks.</p>	(2)

Question number	Indicative content	
9(f)	<p style="text-align: center;">AO3 (3 marks)/AO4 (3 marks)</p> <p>Marking instructions Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below.</p> <p>Indicative content guidance The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include:</p> <p>AO3</p> <ul style="list-style-type: none"> • The most important factors are likely to be governments and the availability of resources. But the effects of these will vary spatially and will depend on the geo-political arrangements in that country / region. • Longer term, climate change is perhaps most significant as nations become both more developed and more populous – therefore the scale of this one is large. • Food and water security may be more localised in some regions and some places, but with increased globalisation, this is a factor that in the future will likely be very significant. • Causal factors are often interlinked and there can be a chain of events that encourage uneven development • There could be some factors that in some regions are local or political which are not on this list and should not be overlooked. <p>AO4</p> <ul style="list-style-type: none"> • Figure 9c shows a range of different causes which are all possible drivers of uneven global development. • Figure 9c shows causes that can operate at different geographical scales. • Figure 9c indicates that there is only a limited number of causes, but for some places there may be more. 	
Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	<ul style="list-style-type: none"> • 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 that are supported by limited evidence. (AO3) • Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	4–6	<ul style="list-style-type: none"> • 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) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)

Question number	Indicative content
9 (g)	<p style="text-align: center;">AO2 (4 marks), AO3 (4 marks), AO4 (4 marks)</p> <p>Marking instructions Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below.</p> <p>Indicative content guidance The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include:</p> <p>AO2</p> <ul style="list-style-type: none"> • There are arrange of factors that control uneven development including social, economic, political as well as environmental • Uneven development is strongly associated with the development gap • There are different strategies from local, regional, national and international that can be used in an attempt to reduce inequality <p>AO3</p> <ul style="list-style-type: none"> • A main impact of inequality lack of available and access to resources. However, different groups of people have different opinions about which strategy is the best/most effective – so this is complex to manage. • The challenge of global management of the issue is that crosses international boundaries – and therefore international cooperation is crucial- but these agreements are never straight forward to arrive at, or to implement. Different countries and placers will have different approaches to sustainability. • Fertility and IMR is very strongly linked to sustainable development, and some would argue the “gap”. Solutions based on family planning may be national as well as international • Inequality can vary spatially and temporally, which means that management solutions often have to be tailored locally or regionally, so the global aspect is difficult. • Each (sustainable) development strategy has its own advantages and disadvantages. <p>AO4</p> <ul style="list-style-type: none"> • Figure 9a shows that big differences global inequality rates in 2017 • Figure 9a shows red “hotspots” of South Africa and parts of the S America, Russia and China, whereas the lowest rates are in Canada and Scandinavia in northern Europe • Figure 9b shows a range of different trends for different regions based on HDI. • Figure 9b shows Tunisia and Brazil have had marked decreases in the HDIs since 2010.

Question number	Indicative content	
	<ul style="list-style-type: none"> • Figure 9b shows on comparison most regions have had similar rates of increase in HDI, but since 2010 the rates have increase has slowed in most regions. • Figure 9c shows causes that can operate at different geographical scales. • Figure 9c indicates that there is only a limited number of causes, but for some places there may be more. 	
Level	Mark	Descriptor
	0	No acceptable response.
Level 1	1–4	<ul style="list-style-type: none"> • Demonstrates isolated elements of understanding of concepts and the interrelationship between 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) • Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	5–8	<ul style="list-style-type: none"> • Demonstrates elements of understanding of concepts and the interrelationship between 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) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	9–12	<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. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) • Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

