

Mark Scheme (Results)

Summer 2019

Pearson Edexcel International A Level
In Geography (WGE01) Paper 1

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General Marking Guidance

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

Question Number	Answer	Mark
1 a (i)	AO2 (1 mark) **C** – North American and Caribbean(1) The following answers are not correct: A – Haiti does not lie near the meeting of these boundaries. B – This boundary affects central American countries D – This boundary would affect southern Caribbean states countries such as Venezuela or Guyana.	**(1)**

Question Number	Answer	Mark
1 a (ii)	AO2 (2 marks) Award 1 mark for an explanation of the movement, plus a relevant extension mark. • Haiti is located on a conservative plate boundary where plates slide past each other (1), leading to a build-up of friction (1); the release of this friction leads to an earthquake (release of energy / seismic waves) (1). • The island of Haiti is also near a destructive plate boundary where the process of subduction occurs / one plate descending beneath another (1); in the subduction zone pressure build up leading to an earthquake / energy release (1).	**(2)**

Question Number	Answer	Mark
1 a (iii)	AO1 (2 marks) Award 1 mark for an explanation and a second mark for an extension of this. • Hurricanes lead to an excessive amount of rainfall saturating the ground (1), leading to movement / failure of the slope and subsequent landslides (1). • Shaking from seismic activity (1) will cause instability in the land triggering slope failure (1). • Inappropriate land use management / unregulated building / inappropriate farming techniques (1) leading to removal of vegetation and an increased risk of slope failure (1). Accept other correct explanations.	**(2)**

Question Number	Answer	Mark
1 (b)	AO1 (4 marks Award 1 mark for an explanation and a further mark for an extension up to a maximum of 2 marks per factor. Population Density • The greater the population density means more vulnerable people in a given area (1), leading to widespread loss basic services and amenities (1) large areas of housing damaged / destroyed (1). Governance of area • Well managed areas will have greater preparations for a natural hazard (1) emergency services will be trained and ready (1), public will have an awareness of the hazard and will be able to take some measures to mitigate the hazard (1); evacuations may be organised with the help of effective communication (1). Credit points relating to poor governance. Mark as 2+2 NB Do not mark as 3 + 1.	**(4)**

<table>
<tr><th>Question number</th><th colspan="2">Answer</th><th>Mark</th></tr>
<tr><td>1 (c)</td><td colspan="2">AO1 (6 marks)
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.
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:
A mega-disaster is a disaster that can have / regional global implications, having an impact on the country of origin but also an impact economically on other nations.
Examples of mega-disasters include large scale hurricanes, high magnitude earthquakes, tsunami, high magnitude volcanic eruptions.
Economic impacts will be unusually large-scale and negative, with disruption to economic activity across a large affected area and an impact on wider areas as they seek to recover from the impacts or they provide support. This will be different to the impacts of a typical hazard which will be more localized in impact.
Damage to transport networks across a larger area may lead to cessation of exports and imports which will have a short (or maybe) long-term impact on the GDP. There will be the implication of damage to an entire network which will impact on relief and lead to a ‘State of Emergency’ relying on financial support from other nations.
Communication networks will cease to operate effectively which can lead to difficulty in every day work and trade. This can lead to unemployment. This could have unusually widespread impacts across a vast area or the entire country impacting on GDP.
A need for outside help from NGOs or aid from other countries. Such large need may have an impact on short and long-term trade as business is unable to function.
NB Max 3 marks if no link to mega-disasters specifically.</td><td>(6)</td></tr>
<tr><td>Level</td><td>Mark</td><td>Descriptor</td><td></td></tr>
<tr><td></td><td>0</td><td>No rewardable material.</td><td></td></tr>
<tr><td>Level 1</td><td>1-2</td><td>Demonstrates isolated elements of geographical knowledge and understanding, some of which may be inaccurate or irrelevant. (AO1)</td><td></td></tr>
</table>

		• Understanding addresses a narrow range of geographical ideas which lack detail. (AO1)
Level 2	**3-4**	• Demonstrates geographical knowledge and understanding, which is mostly relevant and may include some inaccuracies. (AO1) • Understanding addresses a range of geographical ideas which are not fully detailed and/or developed. (AO1)
Level 3	**5-6**	• Demonstrates accurate and relevant geographical knowledge and understanding throughout. (AO1) • Understanding addresses a broad range of geographical ideas which are detailed and fully developed. (AO1)

Question Number	Answer	Mark
2 a (i)	AO1 (1 mark) • India	**(1)**

Question Number	Answer	Mark
2 a (ii)	AO1 (2 marks) Award 1 mark for each description: • An overall increase / increase from 1960 and 2005 (1). • Some fluctuations (1). • 1974-76 / 1980-83 declining emissions (1). • A decreasing trend after 2005 (1). NB answers must be for the USA line on Figure 2.	**(2)**

Question Number	Answer	Mark
2 a (iii)	AO2 (2 marks) Award 1 mark for a reason and a further mark for an extension. • Awareness of global warming issues (1) which may lead to citizens reducing their carbon footprint (1). • Kyoto agreement (or subsequent global agreements to reduce GHG) (1) leading to an overall reduction in the carbon output due to the need to meet targets (credit specific target) (1). • Increase in use of renewables / decreasing need for fossil fuels (1) therefore a reduction in carbon output (1). • Rise in use of nuclear fuel (1) which is a 'cleaner' fuel than using traditional fossil fuels thereby lowering	**(2)**

	carbon output / to try and meet international agreements (1). • Improved technologies e.g. electric cars (1) results in lower carbon emissions as more people own / use such vehicles (1). • Trends in deindustrialisation / global shift reducing emissions in the EU (1) because manufacturing has declined / emissions have moved to outsourcing locations (1). Credit any valid reason.	

Question Number	Answer	Mark
2 (b)	AO1 (4 marks) Mark sequential explanations, up to 4 marks. Either one process in detail or several. • In the Arctic / Antarctic increased melting of ice will lead to the exposure of ground / sea (1) which has a lower albedo which will result in a greater amount of heat being absorbed (1) which will contribute to further warming at the surface (1) and therefore a positive feedback loop of ice melt and warming (1). • Warming Arctic temperatures leading to melting permafrost (1) which leads to higher carbon / methane emissions (1); these powerful greenhouse gases (1) further enhance warming and could lead to a tipping point (1). • An increase in temperatures will result in greater periods of drought (1) in forest areas which could lead to 'forest dieback' resulting in less evaporation (1) leading to the formation of savannah grassland leading to increased temperatures due to more arid conditions (1): less forest cover means less carbon sequestration, and more global warming (1). • The thermohaline circulation (NAD/ Gulf Stream) could shut down (1) as cold, fresh water from the Greenland's melting (1) enters the North Atlantic and disrupts normal ocean currents (1) causing changes to the climate of northern Europe (1). Accept any correct answer.	**(4)**

Question number	Answer	Mark
2 (c)	**AO1 (6 marks)** **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. **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: • Climate belts are latitudinal zones with similar annual climates. • Global warming could lead to northward / southward movement of belts, changing annual temperature and precipitation levels (shifts in the ICTZ / rainfall areas). • Climate change could lead to increased climatic extremes e.g. heatwaves, floods, cyclones in new areas - damaging and destroying crops; more unpredictable climate making planning harder. • Increased pests and disease associated with increased temperatures or decreased rainfall, which could lead to reduced crop production / greater food insecurity in some areas. • A greater need for the use of fertilizer to combat the impacts of changing environmental conditions – so higher costs to farmers. • A need for changes in the pattern and use of irrigation to match the shortfall in precipitation in some areas. • Forced conversion of other areas to farmland, which may result in the loss of forest resources (fuelwood) and the subsequent impact on the water cycle. • Ability to grow new crops due to changes in climate (higher incomes, new opportunities), or farmers being forced to abandon existing crops for new ones (additional costs). • In the worst cases: forced migration / environmental refugees. Do not accept rising sea levels. NB Level 3 answers are likely to explicitly link to shifting climate belts. Accept any other valid responses.	**(6)**

Level	Mark	Descriptor
	0	No rewardable material.
Level 1	**1-2**	• Demonstrates isolated elements of geographical knowledge and understanding, some of which may be inaccurate or irrelevant. (AO1) • Understanding addresses a narrow range of geographical ideas which lack detail. (AO1)
Level 2	**3-4**	• Demonstrates geographical knowledge and understanding, which is mostly relevant and may include some inaccuracies. (AO1) • Understanding addresses a range of geographical ideas which are not fully detailed and/or developed. (AO1)
Level 3	**5-6**	• Demonstrates accurate and relevant geographical knowledge and understanding throughout. (AO1) • Understanding addresses a broad range of geographical ideas which are detailed and fully developed. (AO1)

Question Number	Answer	Mark
3 a (i)	AO2 (1 mark) **B –** Asia (1) The following answers are incorrect because: A – Africa only increases by 81 million (highest is 251 million) C – Europe increases by 140 million D – ME increases by 93 million	**(1)**

Question Number	Answer	Mark
3 a (ii)	AO1 (1 mark) / AO2 (1 mark) Award 1 mark for each valid comparison; data is not required. • Europe is projected to have a higher number of tourist arrivals compared to Asia between 2015 and 2030 (1). • Between 2015-2030 Europe will increase by 150% whereas Asia will increase by over 600% based on 1995 values (1). • Between 1995 and 2015 Asia increases by over 3 x whereas Europe only increases by just under double (1).	**(2)**

Question Number	Answer	Mark
3 (b)	AO1 (3 marks) Credit 1 mark for basic reason and further marks for extended explanations. • Jet air travel has dramatically speeded up travel (1) and connects places that there previously isolated (1) so very few places now feel distant / switched-off (1); air travel has contributed to increased migration (1). • Low cost airlines have reduced prices (1), therefore more people are more able to afford to travel more widely (1), so experiencing new cultures and places as never before (1). • Containerisation has led to greater trade in cargo (1) reducing the cost of transport and increasing trade volumes (1), and TNCs can locate cost-effectively in distant places (1). Accept other correct answers, including historical ones about railways and steamships.	**(3)**

Question Number	Answer	Mark
3 (c)	AO1 (3 marks) Award one mark for each explanations, plus extension marks if applicable. • Mobile phone technology makes travel easier (1) using booking/ rating / navigation apps (1), and researching new places to visit (1); greater travel promotes greater cultural contact and mixing (1). • The technology to track orders globally exists using mobile phone technology (1) therefore controlling the logistics of operations (1) using mobile technology and monitor orders at the touch of a button (1). • The development of 3G/4G technology means that people's access to the internet is greatly improved (1) so can use mobiles for business purposes (1) such as ordering online / keeping track of employees / organising virtual meetings (1). • Mobile phones / social networks allow people to keep in touch more easily than ever before (1), such as with family and friends over long distances (1) so reduces the friction of distance / makes migration e.g. RUM easier (1). Accept other valid responses. NB answers must be about mobile phones, not the internet in general.	**(3)**

<table>
<tr><th>Question number</th><th colspan="2">Answer</th><th>Mark</th></tr>
<tr><td>3 (d)</td><td colspan="2">AO1 (6 marks)
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.
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:
• Deindustrialisation (the decline in manufacturing industry, and other linked sectors such as primary extraction and processing) has resulted in factory closures, increased unemployment in communities that once depended on it e.g. cars in Detroit, Steel in Sheffield.
• Difficulty in finding new employment for workers (male, middle-aged) in deindustrialised areas as the workers do not have the correct skills to find employment in tertiary or alternative employment sectors.
• This may result in government intervention to improve training for workers which comes at cost; need to regenerate run-down areas.
• An inability of workers to maintain their lifestyle due to a lack of income: decline and deprivation in some communities.
• People may be forced to sell their homes or move to find alternative employment or become heavily dependent on the welfare system.
• There may also be an increase in social tension as a consequence of the increased deprivation.
• References to examples of northern UK cities, or cities in the USA which have undergone significant change as a consequence of deindustrialization.</td><td>(6)</td></tr>
<tr><td>Level</td><td>Mark</td><td>Descriptor</td><td></td></tr>
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• Understanding addresses a narrow range of geographical ideas which lack detail. (AO1)</td><td></td></tr>
<tr><td>Level 2</td><td>3-4</td><td>• Demonstrates geographical knowledge and understanding, which is mostly relevant and may include some inaccuracies. (AO1)</td><td></td></tr>
</table>

		• Understanding addresses a range of geographical ideas which are not fully detailed and/or developed. (AO1)
Level 3	**5-6**	• Demonstrates accurate and relevant geographical knowledge and understanding throughout. (AO1) • Understanding addresses a broad range of geographical ideas which are detailed and fully developed. (AO1)

Question Number	Answer	Mark
4 a (i)	AO2 (1 mark) • **B** Delhi A, C and D are incorrect. Delhi increases by 10 million.	**(1)**

Question Number	Answer	Mark
4 a (ii)	AO2 (4 marks) Credit 1 mark for a reason and a further mark for an extended explanation. Some developed world cities no longer appear in the top ten rankings for 2030 • Relatively slower rates of growth in developed nations due slow population growth / RUM (1), cities experience both re-urbanisation and counter urbanisation and therefore growth rate is limited (1). • Deindustrialisation and stagnation of developed economies (1) has led to movement away from cities by both companies' and residents (1); especially with the growth of the internet and footloose nature of employment (1). • Counter-urbanisation (1) is leading to an increased shift away from cities by middle-class families more willing to commute (1). Some developing world cities have entered the top ten ranking for 2030: • A movement away from the agriculture towards secondary industry (1) which is often located in cities (1) therefore increased RUM towards cities. • Very rapid population (internal) growth (natural increase) and high birth rates has led to rapid growth of major cities (1) plus widespread RUM due to economic opportunities in cities /poverty and problems in the countryside (1). Accept references to examples and allow any relevant response.	**(4)** **2+2**

Question Number	Answer	Mark
4 (b)	AO1 (4 marks) Credit 1 mark for a reason and a further mark for an extended explanation. • Air pollution from the unregulated number of informal businesses (1) set up in slum areas or in factories which do not comply with environmental regulations (1).	**(4)**

	• Air pollution as car ownership increases and there are greater problems with congestion (1) leading to issues such as smog (1). • Deforestation and inappropriate construction on slopes (1) leading to an increased risk of landslides and flooding (1) • Issues of raw sewage on the streets particularly in slums areas (1) increasing the risk of water borne diseases such as cholera and Hepatitis A (1). Accept any valid response. (Mark as 2+2) NB do not accept purely social problems.	

Question number	Answer	Mark
4 (c)	**AO1 (6 marks)** **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. **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: COSTS: • Erosion of culture – globalisation increases use of social media, greater commercialization: adverse impact on local cultures. • Social strains between older generations (rural) and younger generations (urban); families split up by RUM. • Increased inequality between wealthy and poor; often with an urban / rural dimension or divide within urban areas. • Could result in the younger generation leaving the local areas to seek employment either abroad or in the major cities creating greater differences between urban and rural communities. BENEFITS: • Improvements in the quality of education as there is a greater demand for educated and skilled youth. Parents will place greater emphasis on schooling and career. • Better jobs and more opportunities, so higher incomes (but issues of long-hours, poor working conditions); spread of democracy and human rights. • Long-term improvement in infrastructure, services and amenities as investment leads to improvements in conditions.	**(6)**

	• Rising wealth leads to improving quality of life and housing (at least for some). Accept any valid responses. NB Focus must be Asia and candidates may refer to any parts of Asia. A social focus is required, not environmental or economic. Level 3 answers must have costs and benefits.	

Level	Mark	Descriptor
	0	No rewardable material.
Level 1	**1-2**	• Demonstrates isolated elements of geographical knowledge and understanding, some of which may be inaccurate or irrelevant. (AO1) • Understanding addresses a narrow range of geographical ideas which lack detail. (AO1)
Level 2	**3-4**	• Demonstrates geographical knowledge and understanding, which is mostly relevant and may include some inaccuracies. (AO1) • Understanding addresses a range of geographical ideas which are not fully detailed and/or developed. (AO1)
Level 3	**5-6**	• Demonstrates accurate and relevant geographical knowledge and understanding throughout. (AO1) • Understanding addresses a broad range of geographical ideas which are detailed and fully developed. (AO1)

Question number	Suggest how the factors shown contribute to drought risk in locations such as the Sahel.
5 (a)	**AO1 (5 marks)/AO2 (5 marks)** **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. **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: AO1: • Deforestation has increased due to fuelwood demand. This has affected an additional 300,000 hectares of land each year in the Sahel region. • The need for fuelwood is a product of limited resources available and need to maintain a subsistence lifestyle. • Global warming has led to increased temperatures and reduced rainfall which can increase aridity and lead to drought. • ENSO cycles have meant that areas are subject to periods of greater / less rainfall and can impact the pattern of seasonal rainfall. AO2: • Increased demand for fossil fuels by developed and emerging economies have led to the increase in carbon dioxide in the atmosphere which has led to global warming. Despite agreements to reduce this impact, it is regions like the Sahel which are already vulnerable which are affected most. • Overgrazing of livestock on already dry lands as either nomads are forced to become more sedentary or due to the mismanagement of commercial famers or overuse of land by subsistence farmers has led to increased soil erosion which has led to reduced food production. • Farming in the Sahel has removed vegetation which has an impact on the local water cycle which can affect rates of evaporation and ultimately lead to reduced precipitation in the region. • The impact of ENSO cycles may have worsened in recent years leading to prolonged dry periods (linked to global warming) and mismanagement of resources which have led to sustained periods of drought therefore forcing people to travel further for water supply or use potentially contaminated supplies. • ENSO cycles have also led to increased drought through more frequent high pressure conditions in the Sahel region bringing dry air to the region. • Poverty in the Sahel means a high risk that drought will lead to problems, because of the lack of management measures. Answers may include information about places which are not featured on the Figure.

Level	Mark	Descriptor
	0	No rewardable material.
Level 1	**1–4**	• Demonstrates isolated elements of geographical knowledge. (AO1) • Demonstrates isolated elements of geographical understanding, some of which may be inaccurate. (AO1) • Applies knowledge and understanding to geographical information / ideas, making limited logical connections / relationships. (AO2) • Applies knowledge and understanding to geographical information / ideas to produce an interpretation that is not relevant and / or supported by evidence. (AO2)
Level 2	**5-7**	• Demonstrates geographical knowledge, which is mostly relevant and may include some inaccuracies. (AO1) • Demonstrates geographical understanding, which is mostly relevant and may include some inaccuracies. (AO1) • Applies knowledge and understanding to geographical information / ideas logically, making some relevant connections / relationships. (AO2) • Applies knowledge and understanding to geographical information / ideas to produce a partial but coherent interpretation that is mostly relevant and supported by evidence. (AO2)
Level 3	**8-10**	• Demonstrates accurate and relevant geographical knowledge throughout. (AO1) • Demonstrates accurate and relevant geographical understanding throughout. (AO1) • Applies knowledge and understanding to geographical information / ideas logically, making relevant connections / relationships. (AO2) • Applies knowledge and understanding to geographical information / ideas to produce a full and coherent interpretation that is relevant and supported by evidence. (AO2)

Question number	Assess the extent to which successful management of global warming is limited by the attitudes of some groups and organisations.
5 (b)	**AO1 (5 marks)/AO2 (15 marks)** **Marking instructions** Markers must apply the descriptors in line with the general marking guidance (page 3) and the qualities outlined in the levels-based mark scheme below. Responses that demonstrate only AO1 without any AO2 should be awarded marks as follows: • Level 1 AO1 performance: 1 mark • Level 2 AO1 performance: 2 marks • Level 3 AO1 performance: 3 marks • Level 4 AO1 performance: 4 marks **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: AO1 • There are many different attitudes towards global warming – these may be reflected by different governments, organisations working in different industrial sectors, people on a local scale. • Global warming is caused by naturally occurring factors such as volcanic eruptions, changes to climatic cycles and changes to ocean circulation. There are also positive feedbacks which may create the impression of increased warming. • Other people question the accuracy and relevance of scientific data or the extent of rates of warming (due to differences in modelling). • Human activity is believed to be contributing to an increase in warming as a result of an increasing rate of release of greenhouse gases into the atmosphere leading to an advanced greenhouse effect. The consequence of this is global climate change. AO2 • Government organisations may or may not be in favour of taking action towards climate change. Some low polluters e.g. Scandinavian countries, or those with a more ecological outlook e.g. Costa Rica are more willing to take action. They may be self-sufficient in renewable energy production or believe a sustainable approach is a way forward. • Countries tied into oil production e.g. Russia or Saudi Arabia may be less inclined to take action. So if the politically held view is negative this could impact the management of global warming. • Level of development may determine the decision to take action. Those that are in lower stages of economic development may choose to continue to use fossil fuels to power manufacturing as this may represent a more direct avenue to development. • More developed nations may be in a position to reduce their reliance; however this is sometimes dependent on energy security.

	• Organisations will have a variable opinion – organisations involved in direct energy production using fossil fuels, or use oil-based products are far less likely to want to take action as it will affect their productivity and profit margin. • Those organisations which operate in a more sustainable fashion or produce products in direct competition with oil-based companies are more willing to support. All large corporations are encouraged to adopt a more sustainable approach; however all companies have a carbon footprint. • Individual action is dependent largely on cultural and social beliefs. Often a greater level of education can lead to a more ethical and sustainable outlook. Many people in more developed nations live a materialistic lifestyle which involves consumerism and therefore by definition contributes with a large carbon footprint (cars driven, flights taken, products purchased, power used). • People in emerging nations may aspire to a more consumer-led lifestyle therefore not have a concern over the resources used. They may not be educated and therefore understand the global issues facing them. • Understanding of the issue is variable and therefore willingness to act is disparate therefore it seems that in many cultures there is an unwillingness to act at an appropriate level.

Level	Mark	Descriptor
	0	No rewardable material.
Level 1	**1–5**	• Demonstrates isolated elements of geographical knowledge and understanding, some of which may be inaccurate or irrelevant. (AO1) • Applies knowledge and understanding of geographical ideas, making limited and rarely logical connections / relationships. (AO2) • Applies knowledge and understanding of geographical information / ideas to produce an interpretation with limited coherence and support from evidence. (AO2) • Applies knowledge and understanding of geographical information / ideas to produce an unsupported or generic conclusion, drawn from an argument that is unbalanced or lacks coherence. (AO2)
Level 2	**6–10**	• Demonstrates geographical knowledge and understanding, which is occasionally relevant and may include some inaccuracies. (AO1) • Applies knowledge and understanding of geographical information / ideas with limited but logical connections / relationships. (AO2) • Applies knowledge and understanding of geographical ideas in order to produce a partial interpretation that is supported by some evidence but has limited coherence. (AO2) • Applies knowledge and understanding of geographical information / ideas to come to a conclusion, partially supported by an unbalanced argument with limited coherence. (AO2)
Level 3	**11-15**	• Demonstrates geographical knowledge and understanding, which is mostly relevant and accurate. (AO1)

		• Applies knowledge and understanding of geographical information / ideas to find some logical and relevant connections / relationships. (AO2) • Applies knowledge and understanding of geographical ideas in order to produce a partial but coherent interpretation that is supported by some evidence. (AO2) • Applies knowledge and understanding of geographical information / ideas to come to a conclusion, largely supported by an argument that may be unbalanced or partially coherent. (AO2)
Level 4	**16-20**	• Demonstrates accurate and relevant geographical knowledge and understanding throughout. (AO1) • Applies knowledge and understanding of geographical information / ideas to find fully logical and relevant connections / relationships. (AO2) • Applies knowledge and understanding of geographical information / ideas to produce a full and coherent interpretation that is supported by evidence. (AO2) • Applies knowledge and understanding of geographical information / ideas to come to a rational, substantiated conclusion, fully supported by a balanced argument that is drawn together coherently. (AO2)

Question number	Suggest how the migrant flows shown have different impacts on countries such as Germany. (10 marks)
6 (a)	**AO1 (5 marks)/AO2 (5 marks)** **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. **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: AO1 • Low-skilled workers from EU countries are economic migrants, moving freely as part of the EU Single Market; they fill skills gaps and low paid jobs. • People trafficking from countries such as Romania and Bulgaria is illegal immigration, of vulnerable people – including children, illegal workers (prostitution) and raises many social and human rights issues: Bulgaria / Romania are transit countries. • High-skill elite migrants often work for TNCs and / or are high net worth individuals; numbers may be quite small compared to low skill workers: they are legal but may not stay for very long: sources include the USA, China and other developed / emerging countries • Refugees and Asylum seekers are vulnerable populations accepted (legal immigration) as part on international agreements: they move from war zones and conflict zones in the Middle East, North Africa and recently in large numbers. AO2 • Migrants can have a positive impact on countries such as Germany as they bring cultural variety, new skills and a willingness to work. • High-skilled migrants will contribute to the economy and most likely invest in the country i.e. setting up new businesses and creating jobs; high tax contribution - however some of their money could leave the country. • Low-skilled migrants are important economically; they fill many low pay jobs – but this can depress local wages; low income migrants could live in poor conditions and perhaps fail to integrate. These workers provide a much needed supply of labour and show willingness to work long hours in the roles that may not be easily filled amongst the wider population of the country. • Political tensions in some countries due to large volumes of EU migration, and other migration. • High costs to some coastal countries of patrolling the sea to deal with migrants coming across the Mediterranean – they receive little financial support to undertake this task: political tensions are some countries have an 'unfair' burden.

		• Facilities for asylum seekers – different countries employ different methods to hold migrants, from camps to detention: burden on the local population near such areas such as potential increased crime, unease and unhappiness over the situation. • Migrants passing through countries have become stranded in transit as their destination countries have tightened the borders making it difficult to pass through. Local border control may also result in difficulty of movement. There may be an increase in racial tension in these countries as a result. • Possibility that illegally trafficked migrants contribute to crime / criminal gang operating in some countries; links to drugs and money laundering.
Level	Mark	Descriptor
	0	No rewardable material.
Level 1	**1–4**	• Demonstrates isolated elements of geographical knowledge. (AO1) • Demonstrates isolated elements of geographical understanding, some of which may be inaccurate. (AO1) • Applies knowledge and understanding to geographical information / ideas, making limited logical connections/relationships. (AO2) • Applies knowledge and understanding to geographical information / ideas to produce an interpretation that is not relevant and/or supported by evidence. (AO2)
Level 2	**5-7**	• Demonstrates geographical knowledge, which is mostly relevant and may include some inaccuracies. (AO1) • Demonstrates geographical understanding, which is mostly relevant and may include some inaccuracies. (AO1) • Applies knowledge and understanding to geographical information / ideas logically, making some relevant connections / relationships. (AO2) • Applies knowledge and understanding to geographical information / ideas to produce a partial but coherent interpretation that is mostly relevant and supported by evidence. (AO2)
Level 3	**8-10**	• Demonstrates accurate and relevant geographical knowledge throughout. (AO1) • Demonstrates accurate and relevant geographical understanding throughout. (AO1) • Applies knowledge and understanding to geographical information / ideas logically, making relevant connections/relationships. (AO2) • Applies knowledge and understanding to geographical information / ideas to produce a full and coherent interpretation that is relevant and supported by evidence. (AO2)

Question number	Assess the extent to which current global population trends are likely to lead to a shortage of resources in the future. (20 marks)
6 (b)	**AO1 (5 marks)/AO2 (15 marks)** **Marking instructions** Markers must apply the descriptors in line with the general marking guidance (page 3) and the qualities outlined in the levels-based mark scheme below. Responses that demonstrate only AO1 without any AO2 should be awarded marks as follows: • Level 1 AO1 performance: 1 mark • Level 2 AO1 performance: 2 marks • Level 3 AO1 performance: 3 marks • Level 4 AO1 performance: 4 marks **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: AO1 • Global population is increasing at an exponential rate – it has grown from approximately 1.7 billion in 1900 to 4.4 billion in 1980 and to 7.4 billion by 2015. Projections suggest that global population could rise to over 11 billion by 2100 but after then the rate will potentially fall. • With increasing population is a greater demand on resources, water and food (accept a wider interpretation of resources as well). Increasing population equals an increasing need to supply water. The increasing need for water leads to an increasing stress on water and therefore greater numbers of areas are facing water scarcity. Of the projected 2 million people added by 2050 it is expected that 90% of these will suffer water scarcity. • Food production (while being altered by GM cropping and strain resistant crops) needs to maintain pace with rising populations, influenced by rising demand for water. By 2050 there is expected to be at least an increase of 50% in food. • Malthus argued that increasing populations will lead to a critical point beyond which population will crash. • Boserup argued that with increases in population will come improvements in innovation therefore allowing technology to overcome our shortages with resources. • The Club of Rome is a group of organisations and individuals which deal with overcoming global issues such as the issue of population versus resource supply. AO2 • Population rise is greatest in the less developed world. There seems to be a cycle of population growth linked to development – increased development equals increased growth rate (DTM) in population leading to, ultimately, an ageing population and subsequent decline. Therefore those who can afford supply often overuse resources, whereas those areas in greatest need

	(countries with greatest rising populations), often cannot afford the luxury of supply. • The variation in water supply is likely to be spatially variable. Greatest increases in population density, are likely to be found in emerging economies, many of which are found in tropical or sub-tropical regions which, due to global warming are suffering from climatic water stress. • Relief can also determine supply – some areas benefiting from relief driven rainfall which contributes to a good supply, whereas some benefiting from ice or snow melt supply which may in future be limited. Seasonal rainfall may also be more varied with the impact of global climate change therefore monsoon rainfall may be less predictable causing further water stress. Even in developed nations people living in large concentrations may be affected by increased aridity (e.g. California) or suffer from old or inefficient infrastructure. • Development of improved infrastructure, or emplacement of large water storage facilities or desalination plants may improve local supply, however this is likely to have a negative impact on other areas – this will largely affect populations in a downstream location in areas where they cannot implement their own water storage e.g. impact of Nepalese Dams impacting water supply in India / Bangladesh. • Variation in food supply will again be determined by changes in climate. Some places benefiting from improved climate, due to climate change, may be able to grow different types of crop. Others will be less able and suffer shortages. Development of GM technology, controlled breeding programmes or global schemes such as the Green Revolution could help improve supply. Areas of increased population rise without ability to develop food supply could see an increase in famine – for example Sub-Saharan African countries. • Education about less wastage or more sustainable approaches to food may also mean that the distribution of food is organised in a more effective manner – however this is more prevalent in higher income countries where population / actions can be managed. • It appears that in the short term, wealth will determine access and therefore those areas where there are much greater populations could suffer the consequences of reduced resources. • Need to develop alternative approaches and alternative technologies to either adopt a more environmental approach to resource use or to manage the use of resources we have.

Level	Mark	Descriptor
	0	No rewardable material.
Level 1	**1–5**	• Demonstrates isolated elements of geographical knowledge and understanding, some of which may be inaccurate or irrelevant. (AO1) • Applies knowledge and understanding of geographical ideas, making limited and rarely logical connections / relationships. (AO2)

		• Applies knowledge and understanding of geographical information / ideas to produce an interpretation with limited coherence and support from evidence. (AO2) • Applies knowledge and understanding of geographical information / ideas to produce an unsupported or generic conclusion, drawn from an argument that is unbalanced or lacks coherence. (AO2)
Level 2	**6–10**	• Demonstrates geographical knowledge and understanding, which is occasionally relevant and may include some inaccuracies. (AO1) • Applies knowledge and understanding of geographical information / ideas with limited but logical connections/relationships. (AO2) • Applies knowledge and understanding of geographical ideas in order to produce a partial interpretation that is supported by some evidence but has limited coherence. (AO2) • Applies knowledge and understanding of geographical information / ideas to come to a conclusion, partially supported by an unbalanced argument with limited coherence. (AO2)
Level 3	**11-15**	• Demonstrates geographical knowledge and understanding, which is mostly relevant and accurate. (AO1) • Applies knowledge and understanding of geographical information / ideas to find some logical and relevant connections / relationships. (AO2) • Applies knowledge and understanding of geographical ideas in order to produce a partial but coherent interpretation that is supported by some evidence. (AO2) • Applies knowledge and understanding of geographical information / ideas to come to a conclusion, largely supported by an argument that may be unbalanced or partially coherent. (AO2)
Level 4	**16-20**	• Demonstrates accurate and relevant geographical knowledge and understanding throughout. (AO1) • Applies knowledge and understanding of geographical information / ideas to find fully logical and relevant connections / relationships. (AO2) • Applies knowledge and understanding of geographical information / ideas to produce a full and coherent interpretation that is supported by evidence. (AO2) • Applies knowledge and understanding of geographical information / ideas to come to a rational, substantiated conclusion, fully supported by a balanced argument that is drawn together coherently. (AO2)

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