Mark Scheme (Results)

January 2019

Pearson Edexcel International Advanced A Level In Geography (WGE01) Paper 01

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January 2019
Publications Code WGE01_01_2019_MS

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) **D** = 4°C (1) The answer cannot be A, B or C because the X is marked in the dark orange section which is associated closely with a rise of 4°C	**(1)**

Question Number	Answer	Mark
1 a (ii)	AO2 (2 marks) • During periods of La Niña the central Pacific near the Equator region has a sea surface temperature anomaly (SSTA) of -– 4°(1) • In the western Pacific the value is closer to 0° compared to the eastern Pacific (1). • SSTA values increase towards the Tropic of Cancer and Capricorn (1) but at a greater rate in the southern hemisphere (1). • There is a variation in SSTA along the tropic of Cancer / Capricorn (1) Accept other correct comparative descriptions of pattern; may include data.	**(2)**

Question Number	Answer	Mark
1 a (iii)	AO1 (2 marks) During periods of El Niño flooding occurs in central and South America. The flooding is caused by a change in normal conditions: • Due to a weakening of the trade winds/low pressure conditions (1) occur	**(2)**

	off the coast of South and Central America leading to heavy rainfall (1), • El Nino conditions lead to wetter than normal conditions (1) which could lead to saturated lands and flooding (1). Accept other correct explanations.	

Question Number	Answer	Mark
1 (b)	AO1 (4 marks) Award 1 mark for identifying and describing one global and one local action {interpret as small scale but could be the implementation of a national scheme at a local/small scale} and a further expansion mark explaining how the action has reduced emissions, up to a maximum of 2 marks each. Local action • Implementation of road / transport measures, for example low emission zones (1) leading to restrictions or fines for high polluting cars (1). • Encourage the use of green technology, for example in energy creation (1) leading to a reduced reliance on energy sourced from power stations with high GHG emissions (1). Global action • Montreal Protocol (1987) aimed to regulate the production and use of chemicals that contribute to the depletion of the Earth's ozone layer (1). Initially signed by 46 it now has over 200 signatories. The treaty is considered a success as the ozone layer is expected to recover in mid-latitudes by 2049, or 2065 in Antarctica (1) • Kyoto Protocol(1) emerged from UNFCCC Earth Summit in Rio, finalised in 1997 the agreement was to reduce carbon by an average of 5.2% by 2012 compared to 1990	**(4)**

	levels (1). The two biggest emitters USA and China emitted more GHG than all signatories during the period of Kyoto (1). During Kyoto worldwide emissions increased by over 40% (1). • The Paris agreement of 2015 aimed to keep the global average of warming below 2°, above pre-industrial levels (aiming to limit the increase to 1.5°) (1). Most believe that these targets are not achievable unless there is cooperation between the largest polluters and those emerging economies. (1) Accept any other correct global/local actions. Mark as 2+2 NB Do not mark as 3 + 1.	

<table>
<tr><th>Question number</th><th>Answer</th><th>Mark</th></tr>
<tr><td>1 (c)</td><td>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:

• Physical conditions or geographical proximity mean that some places are more susceptible than others.
• Building adaptations have been implemented in countries where the risk is high and they are able to afford the changes, such as houses built on stilts in emerging economies. Therefore these countries are adapt more easily.
• Less developed / emerging countries may have populations which are not able to adapt due to low financial viability to undertake a scheme
• Some nations have government programs, such as in the UK the National Adaptation Program which aims to raise awareness, increase resilience, develop long-lead time measures and improve gaps in evidence.
• More developed nations such as the UK have agencies, such as the Environmental Agency whose aim is to address the risk of coastal erosion and flooding by building flood and coastal defences, flood storage reservoirs, land use management and portable defences.
• IPCC raise awareness of the issues of climate change on a global scale identifying areas most at risk. Those places most at risk may choose to act.
• Land use management allows adaptation – in places coastal development is not permitted in areas deemed to be vulnerable.</td><td>(6)</td></tr>
</table>

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
2 a (i)	AO1 (1 mark) • Rocky Point (1)	**(1)**

Question Number	Answer	Mark
2 a (ii)	AO2 (4 marks) Allow one mark for the identification of the point and a further mark for explanation. One mark for an appropriate event and a further mark link to hazard. Land could become saturated (1) leading to an increased instability resulting in landslides (1). This could lead to blockages in roads / damage to properties (1) Flooding as a result of intense rainfall / storm surges (1) Could intensify risk and create damage to coastal properties. High wind speeds / stronger winds (near to eye) (1) could cause structural damage to buildings and infrastructure / injury or death (1). Allow reference to secondary hazards Mark as 2+2	**(4)**

Question Number	Answer	Mark
2 b	AO1 (4 marks) Credit 1 mark for a description of the magnitude scale and a further mark for an extended description. Earthquake magnitude can be measured with Magnitude Moment scale (allow Richter). The scale measures the energy release from the focus (1). The scale is a logarithmic scale and increases by 10 x per point on the scale for shaking (1) and 33 x per point for energy release (1).	**(4)**

	Volcanic activity is measured using the Volcano Explosivity Index (VEI) scale which measures the approximate amount of ejected tephra (1). The amount of released material is represented by a scale from 0–8 (1) and is logarithmic meaning that each point represents a 10 x increase in release tephra (1). Allow reference to the use of equipment to measure magnitude for example a seismometer. Allow reference to the characteristics of tsunami that determine magnitude for example wave height / length / speed. Reserve one mark for two correctly named scales. Accept any correct answer (though do not accept reference to Mercalli scale). Mark as 2+2	

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: • Building in vulnerable areas near the coastline / rivers will increase the likelihood of impact from sea surges or coastal flooding, due to increased impermeable surfaces • Building of defences / types of coastal defences – will determine the ability to overcome the impact of large swell / flooding at the coast.	**(6)**

		• The tracking of storms – ability to gain access to up to date information about the hydro-meteorological event, for example groups such as NOAA or Met Office who use remote sensing techniques to track and monitor weather. This will enable effective preparation or mitigations measures. • The organisation of communities to deal with an impending event. This will include fire services, emergency response teams and relief efforts – effectiveness of such groups will determine the primary and secondary impacts. Failure to act may result in greater frequency of a hazard affecting an area. • Human activity could contribute through leading to climate change such as increased emissions. • Accordance with global climate agreements could indirectly have an impact on the frequency of hydro-meteorological events Accept any other valid responses. NB Answers must address both human factors as well as the consequential hydro-meteorological hazards.	
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** – India (1) Answers A, C and D are incorrect because India is the highest value in 2015 at 8%. The question does not ask for a change between a period of time, instead the highest value.	**(1)**

Question Number	Answer	Mark
3 a (ii)	AO1 (1 mark) / AO2 (1 mark) • Both have a declining growth rate (1) • Both have fluctuated (1) but Russia has fluctuated between positive and negative growth (1) • China has smaller annual changes / less fluctuation compared to Russia (1) • China has a smaller over range in change between -2016 in comparison to Russia. • China has a larger growth rate (% change in GDP) than Russia year on year. • Allow one mark for comparative use of data (1). Allow one mark for per valid comparison. Accept any correct reason.	**(4)**

Question Number	Answer	Mark
3 b	AO1 (4 marks) Credit 1 mark for a reason and further marks for extended explanations. • Increased Foreign Direct Investment (1), as part of global shift (1), has led to increased investment in emerging economies (1), which has led to an improvement in infrastructure (1), increasing the likelihood of further development and subsequent GDP growth(1). • SEZs allow for the development of economic growth in an emerging economy (1) leading to increased innovation and technological growth (1) helping local companies develop	**(4)**

	leading to increased GDP (1) leading to infrastructural improvements (1). • Increased investment has seen an increased immigration (1) encouraging an influx of skilled / unskilled workers (1) and therefore innovation leading to increased GDP growth / an increase in productivity(1). Accept any correct answer.	

<table>
<tr><th>Question number</th><th>Answer</th><th>Mark</th></tr>
<tr><td>3 (c)</td><td>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:

There are a number of relevant Intergovernmental Organisations linked to trade. The main ones are included here – however please consider all relevant examples.
WTO promotes free trade by persuading countries to abolish import tariffs and other trade barriers
Drawing up of international trade laws and acts as a judge in the case of trade disputes. It insists that all negotiations must be fair and that the same rules apply to all.
It imposes trade sanctions against countries who break the rules of international trade therefore trying to reduce the likelihood of military conflict.
It does allow positive discrimination in favour of developing countries as a consequence of historic unequal trade.
All decisions made by the WTO are made by consensus therefore member organisations have a say in global trade decisions.
As well as setting the rules for goods the WTO protects intellectual property rights for trade in ideas and creativity through patents.
The World Bank is an example of an IGO and aims to end extreme poverty and promote shared prosperity – one method to achieve this is through trade.
IMF – in the organisation’s Articles of Agreement it looks to promote international trade by making funds available to those in financial difficulty.</td><td>(6)</td></tr>
<tr><td>Level</td><td>Mark</td><td>Descriptor</td></tr>
<tr><td></td><td>0</td><td>No rewardable material.</td></tr>
</table>

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
4 a (i)	AO2 (1 mark) • B - 1990 Reasons for the correct answer: In A (1980) both trends are falling In C (2000) both trends are neither rising or falling In D (2010) one trend is falling the other is the same There 1990 is the only option where both trends are falling.	**(1)**

Question Number	Answer	Mark
4 a (ii)	AO2 (2 marks) An overall declining trend (1) However a sharp rise starting in 1996/7 to 1998/9 (1) from 43 to 49% of manufactured goods (1). A steady decline from 1999 to 2010 (1) falling by 20% in the period (1).	**(2)**

Question Number	Answer	Mark
4 (b)	AO1 (2 marks) A settlement or wider region what provides a focal point / connected / switched on for activities that have a global influence (1). For example world cities which are centres for world trade (1) or smaller scale examples such as Cambridge which has a global university (1).	**(2)**

Question Number	Answer	Mark
4 (c)	AO1 (4 marks) Credit 1 mark for a reason and a further mark for an extended explanation (or development). • Consumers have greater choice of product (1), which may create a decrease in unit price due to competition between countries (1). • Global branding allows the development of product loyalty (1) which allows a sense of	**(4)**

	security when purchasing large cost items (1). • Consumers are able to access similar products when travelling around the globe (1) which means that replacements and repairs / purchase of accessories are possible when travelling around the globe (1). • Global products could be cheaper (1) as they are moved in bulk to different locations (1) • Brands can be adapted to local needs (Glocalisation) (1) which allows consumers to use a wider range of products within their culture (1). • Globalised products may be used to promote other global causes (1). NB – the benefit must be focused on the consumer. Accept all correct responses.	

<table>
<tr><th>Question number</th><th>Answer</th><th>Mark</th></tr>
<tr><td>4 (d)</td><td>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:
There could be uncertainty about changes in fertility in countries which are yet to develop. These countries may or may not be able to control their birth / death rates therefore future population change may not be as expected.
It is difficult to understand the impact of new medicines or existing medicines (antibiotics) and the impact these could have on global death rates. Equally, new diseases could take hold and cause global falls in population size.
It is hard to understand the impact of current population rates on existing resources (food and water) which will have an implication on future populations – will we respond as Malthus or Boserup suggest or in a different manner.
It is hard to know what impact global environmental changes such as climate change will have on future populations.
Forecasting is more effective in the short-term than the longer term therefore using longer term forecasts of global population will inevitably lead to uncertainty. Dependent on the scenario used for the forecast will determine the likely outcome and accuracy.
A lack of data collected / reliable data, e.g. question over accuracy of population data surveys e.g. census.</td><td>(6)</td></tr>
<tr><td>Level</td><td>Mark</td><td>Descriptor</td></tr>
<tr><td></td><td>0</td><td>No rewardable material.</td></tr>
</table>

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 reasons for the variations in the human and economic impacts shown. (10 marks)
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: • The top five death count shows that in 2015 the most deaths came from mainly earthquakes and flooding, with the Nepal earthquake causing a death count nearly 12 times greater than that of the Guatemala landslide. Most of the deaths seems to occur in emerging or developing countries. • The countries with the greatest number of people affected are mostly in Asia and one in Africa. The top 3 events with highest impact on people are quite distinct as the top three are separated by approximately 5 million each. No developed countries are in the top 5. • The countries with the greatest economic loses from the 2015 natural hazards are almost all developed or emerging economies (4 are in the G8). United States had significantly greater loses nearly double that of China in second which was over double that of Nepal in third. There is a large range of loss between the highest and fifth 21.6 million. India has low losses despite number of hazards affecting the country, which may be a reflection of limited insurance use. AO2: • The high death rate shown for 2015 in Nepal was largely due to the severity of the Nepal earthquake and the proximity to Kathmandu. It had a magnitude of 7.8M and had continued aftershocks in the following months. The event led to 200 people being killed on Mount Everest and over 3 million left homeless. It was the most significant natural disaster in this region. As a country Nepal features in the top five largely due to the areal extent of the earthquake. It is also limited by its population size, and were this a more populous country this figure would inevitably have been higher.

	• The other events, for example the Guatemala landslide were more focused and covered a smaller geographical area in impact, therefore generally had a lower death rate. The Indian floods produced a high death rate due to the intensity of the storms from the monsoon rain seas – with main area affected Tamil Nadu. India had a large number of people affected by the floods as they covered large areas of the southern part of India and passed through populated areas which increased the vulnerability of the people, especially the less wealthy, in those areas. • In Ethiopia there were over 10 million people affected by persistent drought which had been impacting the area since 2008. However El Niño events led to the increased rates of flooding which led to the high number of people affected as the flooding covered a large area. • Most of the counties with large number of people affected were impact by events which covered a large area. • The large economic losses incurred, mainly by China and USA were partly due to their economic wealth and provision for insurance but also the number of events which hit the country; USA with numerous storm events and China with seismic activity, landslides and flooding. Accept any reasonable response.	
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 climate change has mainly natural causes. (20 marks)
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 • Natural causes of climate change to focus on short and long term causes; long term changes to include Milankovitch cycles, changes to the thermohaline circulation and changes to solar output leading to periods of glacials and interglacials; short term changes to include volcanic eruptions, natural variation in the greenhouse gases in the atmosphere, and change in ice coverage across the continents and seas leading to stadials and interstadials. • Recognition that humans may be the cause and reference to different human activity: deforestation, increased manufacturing leading to increased greenhouse gas emissions, increased reliance on fuel combustion for transport, human impact on the natural environment. • Attempts by humans to control or restrict (or not) the causes of climate change through government policy, defences, energy use and awareness measures. AO2 • Milankovitch cycles account for long term changes, with major changes between approximately 25,000 and 100,000 years dependent on the cycle. These changes would be gradual therefore it may not be possible to see short term increases / decreases accounted for by these • The changes to oceanic circulation could be seen as a consequence or a cause of climate change. Melting of glaciers in the northern hemisphere contributes to increases in dense freshwater in the oceans which has the impact of breaking down the thermohaline circulation which can affect the

	movement of warm and cold ocean currents leading to warmer currents (more rainfall) in some places while others are cooler (drier). • Volcanic eruptions have an influence on climate change, however, this is dependent on the magnitude. Large magnitude events, such as VEI 7–8 eruptions can lead to global cooling due to increased levels of sulphur dioxide leading to change in global climate over a 10–20 year period. The impacts are generally short term. Smaller eruptions have a localised impact on climate and may reduce temperature by a couple of degrees Celsius. • Variations in solar output, associated with sunspot activity, are again short term but lead to periods of Solar Maxima or Minimum periods which lead to fluctuation in the levels of solar activity which can change global temperatures in the region of 0.1–0.5 degrees. • Human activity has generally been associated with the greatest short term impact – increased levels of carbon dioxide in the atmosphere, along with other GHG have led to observed short-term warming. This coincides with global development, the rapid growth of the human population and industrialisation as a consequence of materialistic and more globalised society. While there is agreement that human activity has contributed, there is still dispute over the extent to which it has had an impact. Humans have also implemented measures, with varying levels of success, to mitigate the short-term causes of climate change.

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 reasons for the change in distribution of megacities shown. (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 • Figure 6 shows an increase in number of megacities, a projected increase from 10 in 1990 to 32 in 2016, almost a tripling. • Most of the largest cities by population size will be located in either India or China, though Mexico City is large as is Sao Paulo in South America. The size of most cities in emerging economies is on the rise. • China and India have the largest number of megacities with 6 in China and 5 in India. • Africa has increased from 0 to 3 megacities over the period of the figure with Cairo undergoing the most rapid growth. • In most developed nations the growth is either slight or relatively stationary. However Tokyo remains the largest city in both 1990 and 2016 AO2 • Rapid development associated with special economic zones has allowed for the rapid growth of the eastern coast cities in China and the major urban centres in India – as a consequence of global shift. • Rapid investment in infrastructure and foreign direct investment has contributed to rapid rural to urban migration leading to a sharp rise in rates of urbanisation. • Lack of / Reduced controls on planning, particularly in China has enabled the rapid development of urban development. • The Tokyo conurbation has allowed it to retain the highest position in urban size in 2025, though ageing population may lead to a future reduction in the size. • Global distribution of urban megacities still largely focused on port cities which acts as global hubs for trade – which are increasingly significant centres – hence focus of growth in these locations.

	• Increased rates of rural – urban migration across the emerging and developing world.	
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 ageing populations are a problem for the future not for today. (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 • An ageing population is an increase in the average age (median) in the population leading to a relative increase in the proportion of people living to an older age. This will often coincide with an increase in life expectancy. • In 2012 the number of over 65s surpassed 10 million for the first time. • The causes of an ageing population could include a relative reduction in the younger cohorts due to declining fertility or could be a consequence of people living longer. • The main factors for an ageing population could include increased cost of children, improved medical facilities, diet, sanitation or provision for the elderly. • Main issues associated with an ageing population include: increased strain on healthcare provision, cost of healthcare provision (versus other services or health care), a pension crisis (not enough money to maintain pension levels, increased social care bills, difficulty maintaining dignity in later life and the impact on the economy of shrining tax base. • Ageing populations can also provide current day / future benefits: new markets for business e.g. tourism for elderly, option for people to work longer (and pay tax), improved voluntary services, fulfilling role of childcare to reduce financial burden on parents. AO2 • An ageing population will lead to greater dependency. This can have the impact of reduced number of workers to support the growing number of elderly dependents, which

	will have a strain on provision for the elderly, for example healthcare provision will face cuts as the government receives reduced tax income at the same time as the demand for elderly healthcare rises (older people need more healthcare). Therefore this could result in certain treatments requiring payment or face cuts to current day research in combating other illnesses such as cancer, HIV. • The impact of reduced dependency may lead to a need for greater rates of immigration or would result in a reduced work pool which may push wages up but productivity in the economy down which will lead to a long term negative impact on the economy. This could ultimately increase interest rates and inflation. • There could be greater inequality between the haves and have nots (elderly) – which again puts greater demand on the government social provision. • Retirement ages increase to account for the shortfall in income tax – this has already started to happen in the UK with retirement age increasing to 67 in 2026. • Governments will have to plan for the future (and consider this today) rather than dealing with problems as they arise. Failure to do so will see a continued rise in chronic conditions and mental (cognitive) impairments such as dementia. • Elderly population has a number of benefits, including experience, willingness to work and in some cases ability to spend. • Failure to plan for future demographic change (housing, healthcare and service provision) could undermine the benefits of living longer. • The degree to which elderly people influence government policy – disproportionate benefits for elderly as opposed to young pension protection

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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