

Mark Scheme (Results)

Summer 2026

Pearson Edexcel International Advanced Subsidiary
Level in Geography
Global Challenges
WGE01/01

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Summer 2026

Question Paper Log Number P79224

Publication Code WGE01_01_2606_MS

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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 – Describe the trends in global deaths caused by natural disasters (1.3.3.2)	Mark
1 a (i)	<p style="text-align: center;">AO2 (2 marks)</p> <ul style="list-style-type: none"> • Deaths have declined over time • Use of data to support the description of the trend (1) • Deaths have fluctuated over time (1) • Significant spikes remain across the years (1) 	(2)

Question Number	Answer – Suggest two reasons for the trends in the number of deaths from natural disasters (1.3.3.2)	Mark
1 a (ii)	<p style="text-align: center;">A01 (3 mark)/ A02 (1 mark)</p> <p>Award 1 mark for a plausible reason for the trends in the number of deaths and one further extension mark for explanation.</p> <ul style="list-style-type: none"> • Technological advances have led to better prediction and monitoring of natural disasters. (1) This allows for timely evacuations and preparation, reducing the number of fatalities even when disasters occur. (1) • Many countries have invested in stronger buildings and emergency response systems. (1) These improvements help communities withstand disasters more effectively, lowering death tolls over time. (1) • Global organisations and NGOs now respond more quickly and effectively to disasters. (1) This rapid mobilisation of resources — such as food, medical aid, and rescue teams — helps reduce casualties in affected areas. (1) • People are increasingly relocating away from areas prone to natural disasters. (1) This reduces exposure to hazards like floods or earthquakes, leading to fewer deaths over time. (1) • Mega-disasters/large disasters such as tsunamis (1) can cause extreme deaths in a single year (1) • Multiple disasters in the same year (1) can lead to disaster fatigue as countries are unable to recover before events (1) 	(4)

	<p>Accept other correct explanations.</p> <p>Mark as 2+2</p>	
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Question Number	Answer - Explain one way of measuring the magnitude of a natural hazard event. (1.3.1.3)	Mark
1(b)	<p style="text-align: center;">AO1 (3 marks)</p> <p>Award 1 mark for a basic explanation and two further marks for a development of the explanation.</p> <ul style="list-style-type: none"> • Moment Magnitude Scale (Mw)/Richter Scale measures the energy released by an earthquake (1). It uses seismic wave data to calculate the total energy output (1) and is more accurate than the Richter scale for large-scale events (1). • Saffir-Simpson Scale measures the strength of tropical cyclones based on wind speed (1). It categorises hurricanes from Category 1 to 5 depending on sustained wind speeds (1), with higher categories indicating greater potential for damage and storm surge (1). • Volcanic Explosivity Index (VEI) measures the magnitude of volcanic eruptions by eruption cloud height (1) and other measures such as volume of material ejected, and duration (1), and ranks eruptions from 0 (gentle) to 8 (mega-colossal) (1). • Flood discharge measures the volume of water flowing in a river or stream during a flood (1). It is usually expressed in cubic metres per second (m³/s) (1), and helps assess the severity and potential impact of flooding events (1). <p>NB – do not accept the Mercalli scale as this is a subjective scale or the instruments used for measuring magnitude of hazard events.</p> <p>Accept other correct explanations.</p>	(3)

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Question number	Answer: Explain why disasters in multiple hazard zones may have negative impacts on economic development. (1.3.2.2)	Mark
1(c)	<p style="text-align: center;">AO1 (6 marks)</p> <p style="text-align: center;">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> <ul style="list-style-type: none"> • Repeated or multiple hazards can cause major infrastructure damage, disrupting economic activity. For example, in the Philippines, Typhoon Haiyan (2013) destroyed roads, ports and Tacloban airport, limiting trade and slowing recovery. In California, earthquakes such as Loma Prieta (1989) damaged bridges and highways, increasing repair costs and disrupting transport networks. • Disasters disrupt businesses and reduce productivity, leading to loss of income and employment. In the Philippines, small businesses and fishing livelihoods were 	(6)

	<p>devastated by typhoons and storm surges. In California, wildfires regularly destroy homes, tourism infrastructure and local businesses, reducing economic output.</p> <ul style="list-style-type: none"> • Areas facing multiple hazards are seen as high-risk, deterring investment. The Philippines' exposure to typhoons, earthquakes and volcanic eruptions discourages foreign investment. Similarly, in California, risks from earthquakes and wildfires can increase insurance costs and discourage development in certain regions. • Agriculture is highly vulnerable, especially in developing countries. In the Philippines, typhoons and flooding destroy rice crops and coconut plantations, reducing exports and farmer incomes. In California, droughts and wildfires impact agricultural zones such as the Central Valley, reducing yields and increasing food prices. • Disasters can worsen poverty and inequality, reducing overall economic development. In the Philippines, poorer coastal communities are often hardest hit and struggle to rebuild, creating long-term economic setbacks. In California, lower-income groups may be unable to afford rebuilding after wildfires or earthquakes, widening inequality. • Damage to education and healthcare infrastructure reduces human capital in the long term. In the Philippines, Haiyan damaged schools and hospitals, affecting education and workforce skills. In California, wildfire destruction of communities can disrupt schooling and healthcare access, impacting productivity. • Repeated natural disasters can lead to environmental degradation, reducing long-term economic productivity. In the Philippines, frequent typhoons such as Haiyan cause coastal erosion, flooding and destruction of mangrove forests, which reduces natural protection and damages farmland, lowering agricultural output. <p>Accept other correct explanations.</p>	
Level	Mark	Descriptor
	0	No rewardable material.

Level 1	1-2	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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 - Identify the year with the largest temperature anomaly compared to the 1981-2010 average. (1.3.5.3)	Mark
2 a (i)	<p style="text-align: center;">AO2 (1 mark)</p> <ul style="list-style-type: none"> • A 1910 	(1)

Question Number	Answer - Describe the temperature anomaly trends in Africa from 2000 to 2025. (1.3.5.3)	Mark
2 a (ii)	<p style="text-align: center;">AO2 (2 marks)</p> <p>Accept other correct explanations.</p> <ul style="list-style-type: none"> • Temperature anomalies have consistently risen above the 1981–2010 average since around 2004. (1) • The anomaly shows a warming trend, increasing from approximately -0.35°C in 2000 to around $+0.7^{\circ}\text{C}$ by 2025. (1) • The temperature anomaly shifted from negative to positive around 2010, indicating a transition to above-average temperatures. (1) • The warming trend accelerates after 2004, with anomalies rising more sharply toward 2025. (1) • Between 2008–2018 the temperature anomalies show a negative trend (1) 	(2)

Question Number	Answer - Suggest one impact of the temperature anomaly trends, since 2000, on farmers. (1.3.5.3)	Mark
2 a (iii)	<p style="text-align: center;">AO1 (2 marks)</p> <p>Accept other correct explanations.</p> <ul style="list-style-type: none"> • Higher temperatures can cause heat stress in crops, reducing yields (1). Crops like maize, wheat, and rice are particularly vulnerable to temperature increases (1). • Changes in temperature can alter the length of growing seasons (1), potentially reducing the time available for crops to mature (1). • Increased temperatures can contribute to more frequent and severe droughts (1), reducing water availability for irrigation (1). • Warmer temperatures can expand the range and lifecycle of pests (1), leading to increased infestations (1). 	(2)

	<ul style="list-style-type: none"> Increased temperatures can accelerate soil degradation/reduce soil fertility (1), impacting crop productivity (1). <p>NB. Suggestions need to be linked to temperature, but this could be linked to higher evaporation leading to increased rainfall therefore floods.</p>	
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Question Number	Answer Explain how the following Milankovitch cycles cause natural climate change (1.3.4.2)	Mark
2 (b)	<p style="text-align: center;">AO1 (4 marks)</p> <p>Award 1 mark for each basic explanation and a further mark for a development of the explanation.</p> <p>Orbital eccentricity</p> <ul style="list-style-type: none"> When Earth's orbit is more circular, the distance between Earth and the Sun remains relatively constant throughout the year (1). This results in more uniform solar radiation and relatively stable climate conditions (1). When Earth's orbit is more elliptical, the distance between Earth and the Sun varies significantly over the course of a year (1). This leads to greater differences in solar radiation received during different seasons (1). When eccentricity is high, the differences in solar radiation between seasons are more extreme (1), which can contribute to the onset of glacial periods (1). The changes in solar radiation due to orbital eccentricity can trigger feedback mechanisms in Earth's climate system (1), such as changes in ice cover, ocean circulation, and greenhouse gas concentrations (1). <p>Axial tilt</p> <ul style="list-style-type: none"> When the tilt is greater, the seasonal contrast is more pronounced (1). Summers become warmer and winters colder, especially at higher latitudes. This increased seasonality can lead to more extreme weather patterns (1). 	(4)

	<ul style="list-style-type: none"> • Greater axial tilt can lead to warmer summers, which can prevent the accumulation of ice and snow (1), reducing the likelihood of ice sheet formation (1). • The changes in ice cover due to variations in axial tilt can trigger feedback mechanisms (1). For example, increased ice cover can reflect more sunlight (higher albedo), leading to further cooling and more ice accumulation (1). <p>Accept other correct explanations.</p> <p>Mark as 2 + 2</p>	
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Question number	Answer – Explain why records of past climate change may not be reliable or accurate. (1.3.4.3)	Mark
2 (c)	<p style="text-align: center;">AO1 (6 marks)</p> <p style="text-align: center;">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> <ul style="list-style-type: none"> • Much of our understanding of past climates comes from proxy data, such as ice cores, tree rings, sediment layers, and coral reefs. These proxies can provide indirect evidence of past climate conditions but interpreting them accurately can be challenging. • Written records, such as ship logs, diaries, and agricultural records, can provide valuable climate information, but they may be incomplete, biased, or inconsistent. • Proxy data and historical records often have limited temporal and spatial coverage. For example, ice cores are primarily available from polar regions, and tree rings are spatially specific. • Older measurement techniques may not have been as precise or accurate as modern methods. For example, early thermometers and barometers were less reliable than today's instruments. • Natural climate variability, such as volcanic eruptions, solar radiation changes, and ocean currents, can cause short-term fluctuations that complicate the interpretation of long-term trends. <p>NB. Do not expect reliability and accuracy to be explicitly differentiated</p> <p>Accept any other valid responses.</p>	(6)

Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–2	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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 - Identify the correct statement (1.4.2.3.)	Mark
3a (i)	A02 (1 mark) ≡ A The tariff changes are a type of trade protectionism	(1)

Question Number	Suggest two reasons why the USA changed the tariffs on Chinese imports. (1.4.2.3.)	Mark
3a (ii)	<p style="text-align: center;">AO1 (3 mark) / A02 (1 marks)</p> <p>Award 1 mark for each basic explanation and a further mark for a development of the explanation.</p> <ul style="list-style-type: none"> • Change in American leadership/president has meant to a change in policy towards some imports (1) For example, Trump has adopted tougher trade policies towards China to reduce dependence on foreign goods and address trade imbalances. (1) • Some argue that tariffs are a way of America earning additional income (1) Tariffs generate revenue for the US government from imported goods, which can be used to support the economy or fund public spending, although they may also increase costs for consumers. (1) • Higher tariffs on Chinese imports, aim to protect and support American industries (1). By making imported goods more expensive, the tariffs help domestic manufacturers compete more effectively against cheaper Chinese products (1). • Increasing tariffs makes Chinese products more expensive and less attractive to American consumers (1), thereby encouraging the purchase of domestically produced goods (1). • Imposing higher tariffs, the USA aims to pressure China into strengthening its Intellectual Property laws (1), protecting American companies' innovations and technologies (1). • By making Chinese goods more expensive, companies might relocate their manufacturing operations to other countries or back to the USA (1), diversifying supply chains and reducing reliance on China (1). • Tariffs can also be a response to similar measures taken by China (1). If China imposes tariffs on American goods, the 	(4)

	<p>USA might retaliate with its own tariffs to protect its economic interests (1).</p> <p>NB. Allow credit for plausible reasons linked to named imported goods</p> <p>Max 2+2</p>	
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Question Number	Answer - Explain why Trans-National Corporations (TNCs) use glocalisation and global production networks.(1.4.2.1)	Mark
3 (b)	<p style="text-align: center;">AO1 (4 marks)</p> <p>Award 1 mark for a basic explanation and a further mark for a development of the explanation up to 2 marks.</p> <p>Glocalisation</p> <ul style="list-style-type: none"> • TNCs modify their offerings to meet the specific needs of local consumers (1), which helps them penetrate and succeed in diverse markets (1). • TNCs often form partnerships with local businesses, giving access to local knowledge and networks (1). These partnerships can enhance the TNCs' ability to navigate regulatory environments and cultural differences (1). • By tailoring their branding and marketing strategies to with local audiences, TNCs can build stronger connections with consumers (1). This localised approach can increase brand loyalty and market share (1). <p>Global production networks</p> <ul style="list-style-type: none"> • TNCs often break down their production processes into various stages and distribute these stages across different countries (1). This allows them to take advantage of lower labour costs/favourable tax regimes/ access to raw materials (1). • By establishing supply chains that span multiple countries, TNCs create a web of economic interdependence (1). This facilitates the flow of goods, services, capital, and technology across borders (1). • Through GPNs, TNCs can access and expand into new markets more efficiently/accessing protected markets e.g. EU (1). By producing goods closer to their target markets, they can reduce transportation costs/respond more quickly to local demand changes (1). <p>Mark as 2+2</p> <p>Accept other correct explanations.</p>	(4)

Question number	Answer – Explain how governments encourage Foreign Direct Investment (FDI) into their countries. (1.4.2.2)	Mark
3 (c)	<p style="text-align: center;">AO1 (6 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> <ul style="list-style-type: none"> • Establishing special economic zones (SEZs), industrial parks, and free trade zones with advanced infrastructure to attract foreign businesses. • Offering reduced tax rates or tax exemptions for a certain period to attract foreign investors. The Irish government offers significant tax incentives, including a low corporate tax rate of 12.5%, to attract transnational companies, particularly in the tech and pharmaceutical sectors. • Providing financial assistance to foreign companies to lower their initial investment costs. • Streamlining procedures for setting up businesses, reducing bureaucratic red tape, and making it easier for foreign companies to operate. The “Make in India” initiative has simplified business regulations, eased FDI norms, and improved the ease of doing business to attract foreign investors. • Reducing tariffs and non-tariff barriers to facilitate easier access to markets. • Investing in education and vocational training to create a skilled workforce that meets the needs of foreign investors. • Participating in regional trade agreements to provide foreign investors with access to larger markets. As part of the USMCA (United States–Mexico–Canada Agreement), Mexico offers foreign investors access to a large integrated market. 	(6)

		<ul style="list-style-type: none"> Encouraging collaborations between the government and private sector to undertake large-scale projects that attract foreign investment. <p>Accept other correct explanations.</p>	
Level	Mark	Descriptor	
	0	No rewardable material.	
Level 1	1–2	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 - Define the term international migrant (1.4.5.1)	Mark
4 a (i)	<p style="text-align: center;">AO2 (1 mark)</p> <ul style="list-style-type: none"> • Person who moves from one country to another (1) • A person who has migrated across international borders (1) 	(1)

Question Number	Answer - Suggest two reasons for the destinations of international migrants in 2000 compared to 2024. (1.4.5.1)	Mark
4 a (ii)	<p style="text-align: center;">AO1 (3 marks) and AO2 (1 marks)</p> <p>Award 1 mark for a basic explanation and a further mark for a development of the explanation.</p> <ul style="list-style-type: none"> • Countries like the USA and Germany attract migrants due to strong economies and job availability. (1) Migrants are drawn to nations with low unemployment and high demand for skilled or unskilled labour, especially in sectors like healthcare, construction, and technology. (1) • Migrants often choose destinations with stable governments and low conflict risk. (1) Countries such as the UK and Canada offer legal protections, human rights, and safe living conditions, making them appealing for asylum seekers and refugees. (1) • Some countries like Denmark have brought in stricter regulations. (1) including stricter asylum rules, reduced benefits for migrants, and tougher residency requirements, which has made it less attractive as a destination (1) • Saudi Arabia has become a major destination due to its expanding economy and infrastructure projects. (1) The country's Vision 2030 initiative has created demand for foreign workers in construction, energy, and services, attracting migrants from Asia and Africa. (1) <p>NB – do not credit generalised reasons not linked to countries in Figure 4 Mark as 2+2</p> <p>Accept other correct descriptions.</p>	(4)

Question Number	Answer Explain the management challenges caused by megacity growth. (1.4.6.4/6)	Mark
4 (b)	<p style="text-align: center;">AO1 (4 marks)</p> <p>Award 1 mark for each basic explanation and a further mark for a development of the explanation.</p> <ul style="list-style-type: none"> • Rapid population growth leads to housing shortages and overcrowded living conditions. (1) This can result in the expansion of informal settlements or slums, which often lack basic services like clean water and sanitation. (1) • Increased demand for transport leads to severe traffic congestion and longer commute times. (1) Poorly planned transport systems can hinder economic productivity and worsen air pollution levels. (1) • Megacities generate vast amounts of waste that can overwhelm collection and disposal systems. (1) Inadequate waste management can lead to environmental degradation and health risks for urban populations. (1) • Services like healthcare, education, and policing struggle to keep up with population growth. (1) This can reduce quality of life and increase inequality, especially in underserved areas. (1) <p>Accept other correct explanations.</p>	(4)

Question number	Answer Explain why managing international migration is increasingly difficult in a globalised world (1.4.5.3)	Mark
4 (c)	<p style="text-align: center;">AO1 (6 marks)</p> <p style="text-align: center;">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> <ul style="list-style-type: none"> • Advances in transportation technology have made it easier and cheaper for people to move across borders. This increased 	(6)

	<p>mobility has led to higher volumes of both legal and illegal migration.</p> <ul style="list-style-type: none"> • Political instability, wars, and conflicts in various regions force people to flee their homes, leading to large numbers of refugees and asylum seekers. • Different countries have varying immigration laws and policies, making it challenging to coordinate and manage migration effectively on a global scale. • Ensuring border security while facilitating legitimate migration is a complex task, especially with the rise of human trafficking and smuggling networks. • Integrating migrants into host societies can be challenging due to cultural, linguistic, and social differences. This can lead to tensions and conflicts within communities. • Negative public perception and xenophobia can influence immigration policies and make it difficult to implement inclusive and effective migration management strategies. • Global economic crises and fluctuations can lead to sudden changes in migration patterns, making it difficult for countries to plan and manage migration effectively. • Migrants can now access real-time information about routes, border controls, and asylum procedures, making it easier to organise journeys and share advice with others. • Live media coverage and viral social media posts can quickly spread news about migration crises, amplifying negative attitudes or misinformation about migrants, leading to increased resistance or even hostility among local communities. <p>NB. Marks should not be awarded to responses that drift into the consequences of the migration.</p> <p>Accept any valid responses</p>		
Level	Mark	Descriptor	
	0	No rewardable material.	
Level 1	1–2	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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 distribution of landslides and avalanches shown in Figure 5 (1.3.1.1.)
5 (a)	<p style="text-align: center;">AO1 (5 marks)/AO2 (5 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>AO1:</p> <ul style="list-style-type: none"> • A landslide is defined as the movement of rock, earth, or debris down a slope due to gravity. • This process can be triggered by various factors, including heavy rainfall, earthquakes, volcanic activity, rapid snowmelt, and human activities such as deforestation and construction. • An avalanche is defined as a rapid flow of snow, ice, and debris down a mountainside. Avalanches occur when the snowpack becomes unstable and the forces acting on it, such as gravity, exceed the strength of the snow. • Factors contributing to avalanches include heavy snowfall, rapid temperature changes, wind deposition, and human activities such as skiing or construction. <p>AO2:</p> <ul style="list-style-type: none"> • Both landslides and avalanches are influenced by climate change, which can alter precipitation patterns, increase the frequency of extreme weather events, and affect snowpack stability. • Regions that are prone to both heavy rainfall and significant snowfall, such as certain mountainous areas, can experience both landslides and avalanches. <p>Landslides:</p> <ul style="list-style-type: none"> • Landslides are more common in mountainous areas where steep slopes are present. The gravitational pull on the loose soil and rock material on these slopes makes them prone to sliding. The steep slopes of the Himalayas are prone to landslides, especially during the monsoon season when heavy rains can trigger slope failures.

		<ul style="list-style-type: none"> • Areas with unstable geological formations, such as loose, unconsolidated soils or fractured rock, are more likely to experience landslides. • Regions near tectonic fault lines are more prone to landslides due to the seismic activity that can trigger ground movement. The San Andreas Fault region is susceptible to landslides due to seismic activity. • Intense and prolonged rainfall can saturate the soil, reducing its cohesion and increasing the likelihood of landslides. • Rapid snowmelt can also contribute to landslides by adding water to the soil, making it more prone to sliding. • Removing vegetation, which stabilizes the soil with its root systems, can increase the risk of landslides. <p>Avalanches:</p> <ul style="list-style-type: none"> • Areas that receive heavy snowfall are more prone to avalanches. The accumulation of snow on slopes can become unstable and slide down. • The structure and stability of the snowpack, including layers of weak snow, can influence avalanche risk. • Avalanches are more likely to occur on slopes with angles between 30° and 45°. Slopes steeper than this may not hold enough snow, while gentler slopes may not have the gravitational force needed to trigger an avalanche. The Rocky Mountains have many slopes within the critical angle range for avalanches. • Rapid changes in temperature can affect the stability of the snowpack. Warm temperatures can cause melting and refreezing, creating weak layers within the snowpack. • Wind can redistribute snow, creating areas of deep snow accumulation that are more prone to avalanches. • Recreational activities in mountainous areas can trigger avalanches, especially when people venture into unstable snow conditions. Ski resorts in the French Alps, such as Chamonix, are known for avalanche risks.
Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–4	<ul style="list-style-type: none"> • Demonstrates isolated elements of geographical knowledge. (AO1) • Demonstrates isolated elements of geographical understanding, some of which may be inaccurate. (AO1)

		<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	"The threats of global warming can only be effectively managed by global agreements and actions" (1.3.6.1/1.3.6.2/1.3.6.3)
5 (b)	<p style="text-align: center;">AO1 (5 marks)/AO2 (15 marks)</p> <p>Marking instructions</p> <p>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:</p> <ul style="list-style-type: none"> • 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 warming is defined as the long-term increase in Earth's average surface temperature due to human activities, primarily the emission of greenhouse gases (GHGs) such as carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O).
- Global warming is a significant aspect of climate change and has widespread impacts on weather patterns, sea levels, ecosystems, and human societies.
- Global warming can be managed at a global level through international agreements, the Green Climate Fund (GCF), carbon pricing mechanisms, renewable energy initiatives and reducing deforestation rates.
- Global warming can be managed at a national and local level through carbon and renewable energy policies, infrastructure development, research and development, green spaces, energy efficiency programmes, public campaigns and waste and water management.

AO2

Agree:

- Global warming is a global/transboundary issue because greenhouse gases (GHGs) emitted in one country affect the entire planet. The atmosphere is shared, so emissions anywhere contribute to global climate change.
- Climate change impacts, such as rising sea levels, extreme weather events, and shifting climate zones, do not respect national borders. Effective management requires coordinated international efforts.
- Global agreements like the Paris Agreement provide a framework for countries to commit to reducing GHG emissions. Such agreements facilitate collective action and accountability.
- International cooperation allows for the sharing of technology, knowledge, and best practices, helping all countries, especially developing ones, to implement effective climate strategies.
- International funds, such as the Green Climate Fund, provide financial support to developing countries to help them mitigate and adapt to climate change.

	<ul style="list-style-type: none"> • Global cooperation can lead to economies of scale in the development and deployment of renewable energy technologies, making them more affordable and accessible. • International agreements can set unified standards for emissions reductions, renewable energy adoption, and energy efficiency, ensuring that all countries are working towards common goals. • Coordinated policies can prevent issues like carbon leakage, where emissions reductions in one country lead to increased emissions in another due to shifting industries. <p>Disagree:</p> <ul style="list-style-type: none"> • Different countries have varying priorities and capacities to address climate change. National governments may prioritise economic growth, poverty reduction, or energy security over global climate commitments. • Some countries may resist international agreements that they perceive as infringing on their sovereignty or economic interests. • Local and regional solutions can be more effective in addressing specific climate impacts and vulnerabilities. For example, coastal cities may focus on sea-level rise, while arid regions prioritise water conservation. • Local initiatives can engage communities more directly, fostering grassroots support and ensuring that solutions are culturally and contextually appropriate. • Countries have different capacities to implement global agreements. Developing countries may lack the resources or infrastructure to meet international commitments without significant support. • Local and national governments can be more agile and innovative in developing and implementing climate solutions tailored to their specific contexts.
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Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–5	<ul style="list-style-type: none"> • 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)

		<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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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Question number	Suggest economic and demographic reasons for the differences in the level of urbanisation shown in Figure 6. (1.4.2.2)
6 (a)	<p style="text-align: center;">AO1 (5 marks)/AO2 (5 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>AO1</p> <ul style="list-style-type: none"> • Economic refers to anything related to the production, distribution, and consumption of goods and services. • Economic factors include aspects such as employment, income, trade, investment, and the overall functioning of markets and economies. • Demographic pertains to the statistical study of populations, including their size, structure, and distribution. <p>AO2</p> <p>Economic reasons</p> <ul style="list-style-type: none"> • High urbanisation rates in the USA and Canada are driven by economic opportunities, advanced infrastructure, and high living standards in cities like New York, Los Angeles, and Toronto. • Urban areas often have a higher concentration of industries and service sector jobs. For example, cities in China, such as Shanghai and Beijing, attract people due to their robust industrial bases and service sectors. • Cities typically offer higher wages and better job prospects. For instance, urban areas in the USA, like New York and Los Angeles, provide diverse employment opportunities with higher income potential. • Cities with substantial investment in infrastructure, such as transportation, healthcare, and education, are more attractive. For instance, Singapore's extensive infrastructure development makes it a prime destination for both businesses and residents.

		<ul style="list-style-type: none"> Urban areas that serve as hubs for business and commerce, like Hong Kong and Dubai, attract people due to the economic opportunities they provide. Cities with strong global connectivity through ports, airports, and communication networks, such as Los Angeles and Rotterdam, attract international businesses and migrants. <p>Demographic reasons</p> <ul style="list-style-type: none"> Cities with higher birth rates and lower mortality rates experience natural population growth. For example, cities in developing countries often have higher birth rates, contributing to urban population growth. Rural-to-urban migration is a significant factor. People move to cities like Lagos and Dhaka in search of better living conditions and opportunities. Urban areas attract younger populations seeking education, employment, and lifestyle opportunities. Cities like Berlin and Seoul are known for their vibrant youth culture and educational institutions. Urban areas offer a wide range of amenities and services, including entertainment, cultural activities, and social services. Cities like Paris and Barcelona are famous for their cultural amenities and high quality of life.
Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–4	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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)

		<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	“Increasing global population and rising affluence will inevitably lead to a resource crisis” (1.4.4.1/1.4.4.2/1.4.4.3)
6 (b)	<p style="text-align: center;">AO1 (5 marks)/AO2 (15 marks)</p> <p>Marking instructions</p> <p>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.</p> <p>Responses that demonstrate only AO1 without any AO2 should be awarded marks as follows:</p> <ul style="list-style-type: none"> • Level 1 AO1 performance: 1 mark • Level 2 AO1 performance: 2 marks • Level 3 AO1 performance: 3 marks • Level 4 AO1 performance: 4 marks <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>AO1</p> <ul style="list-style-type: none"> • A resource crisis is defined as a situation where the demand for natural resources exceeds the supply, leading to shortages and potential conflicts. • This can occur due to various factors, including overpopulation, overconsumption, environmental degradation, and unequal distribution of resources. • There are several key population and resource theories that explain the relationships between population growth, resource use; Malthusian Theory, Boserupian theory and Club of Rome. <p>AO2</p> <p>Agree:</p> <ul style="list-style-type: none"> • Many natural resources, such as fossil fuels, minerals, and freshwater, are finite. An increasing global population will accelerate the depletion of these resources, leading to scarcity. • Higher demand for food and land can lead to overfishing and deforestation, depleting marine and forest resources and disrupting ecosystems. • A growing population increases the demand for food and water. Agricultural production may struggle to keep pace, especially in regions already facing water scarcity and soil degradation.

- More people mean higher energy consumption. If reliance on non-renewable energy sources continues, it could lead to energy shortages and increased greenhouse gas emissions.
- Higher population densities can lead to increased pollution of air, water, and soil, harming human health and ecosystems.
- More people contribute to higher carbon emissions, exacerbating climate change and its associated impacts, such as extreme weather events and sea-level rise.
- Rapid population growth can strain infrastructure and public services, such as healthcare, education, and transportation, leading to lower quality of life.
- Competition for scarce resources can lead to conflicts and geopolitical tensions, destabilising regions and economies.
- As affluence rises, individuals tend to consume more goods, energy, and water. This leads to higher per capita resource use, especially in high-income countries, accelerating depletion of finite resources.
- Rising affluence often leads to a shift toward meat-heavy diets, which require more land, water, and energy to produce. Livestock farming contributes significantly to deforestation, methane emissions, and water stress.
- Affluent populations travel more frequently, increasing demand for aviation fuel and contributing to carbon emissions. Car ownership and private transport also rise, straining oil supplies and urban infrastructure.
- Affluence drives demand for electronics and short product lifecycles, creating massive e-waste.
- Mining for rare earth metals used in smartphones and batteries intensifies environmental degradation and geopolitical competition.

Disagree:

- Advances in agricultural technology, such as genetically modified crops, precision farming, and vertical farming, can increase food production and efficiency, mitigating the risk of food shortages.
- The development and adoption of renewable energy sources, such as solar, wind, and hydroelectric power, can reduce dependence on finite resources and provide sustainable energy solutions.
- Improved resource management practices, such as water conservation, recycling, and sustainable forestry, can help preserve resources and reduce waste.

	<ul style="list-style-type: none"> • Effective family planning and education programs can help stabilize population growth, reducing pressure on resources. • Well-planned urbanisation can lead to more efficient use of resources, with better infrastructure and services reducing per capita resource consumption. • Investing in education, particularly for women, can lead to lower birth rates and more sustainable population growth. • International cooperation and agreements can help manage resources more effectively, ensuring equitable distribution and reducing the risk of resource conflicts. • Wealthier nations and individuals can afford to invest in renewable energy, electric vehicles, and energy-efficient buildings. This reduces reliance on fossil fuels and promotes long-term sustainability. • Affluent societies often have better access to environmental education and sustainability campaigns. This can lead to more responsible consumption, recycling, and support for conservation efforts. • Affluent countries can lead global efforts to combat resource crises through diplomacy, funding, and technological innovation. Initiatives like the EU Green Deal or U.S. climate financing show how affluence can be leveraged for global benefit.
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