



Mark Scheme (Results)

January 2026

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

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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 pattern of flood risk in Bangladesh (1.3.1.2)	Mark
1 a (i)	AO2 (2 marks) • High flood risk areas are primarily located in coastal areas/ Northern regions/Central regions (1) • High flood risk areas are found close to the Brahmaputra River/around Dhaka (1) • Moderate flood risk areas are found in Western and Eastern regions/surrounding the high-risk areas (1) • There are few areas of low-risk flooding/low risk flood areas are found in the North-west/South-east and South-west (1)	(2)

Question Number	Answer – Suggest one reason why some areas of Bangladesh have a high risk of flooding (1.3.1.2)	Mark
1 a (ii)	A01 (2 mark)/ A02 (1 mark) Award 1 mark for a plausible reason for the distribution of flood risk shown and two further extension marks showing use of the resource. • Coastal areas are highly susceptible to cyclones/ storm surges (1), particularly due to the presence of the Bay of Bengal (1) because of the low-lying nature of the land (1). • Bangladesh is situated in the delta of major rivers/has a number of larger rivers (1) creating extensive floodplains (1) which are low-lying so at high risk from flooding (1). • Meltwater from the Himalayas (1) particularly in the springtime (1) combines with the monsoon (1) • Low risk in the southwest could be due to the lack of presence of major rivers (1) meaning that population density may be lower there (1) due to a lack of fertile farmland so reduced risk overall (1) Accept other correct explanations including those focused on human reasons/governance	(3)

	N.B. Accept loosely connected aspects of one reason	
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Question Number	Answer - Explain how monitoring and prediction can reduce the impact of volcanic eruptions (1.3.3.3)	Mark
1(b)	AO1 (4 marks) Award 1 mark for a basic explanation and a further mark for a development of the explanation. Early warning systems such as seismographs measure the vibrations caused by seismic activity (1) these small earthquakes often precede volcanic eruptions, so identifying them can allow for timely evacuation (1) Scientists can monitor ground movement using GPS sensors or tiltmeters (1) this highlights that pressure is building inside the volcano allowing authorities time to issue alerts/evacuate people (1) Early warning systems such as gas sensors can detect and measure the concentration of gases such as sulphur dioxide (1) an increase in these often indicates rising magma and potential activity allowing time for warnings (1).	(4)

	Satellites provide continuous, real-time monitoring of volcanoes capturing thermal anomalies/deformation (1) This data can be used to map potential routes for lava flows/pyroclastic flows (1) Prediction technology can help create detailed GIS hazard maps, identifying areas at risk of lava flows/ash flows (1) this helps planning for infrastructure to ensure that hospitals/schools are located in safer areas (1). Mark as 2+2 Accept other correct explanations. N.B There should be a connection made between the monitoring/prediction technology and the impact reduction.	
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Question number	Answer - Explain why one named location is a multiple hazard zone (1.3.2.2)	Mark
1(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: The Philippines The Philippines is located along the Pacific Ring of Fire, where the Eurasian Plate and the Philippines Plate converge. This tectonic setting results in frequent earthquakes and volcanic eruptions. The Philippines is located in the western Pacific Ocean, so is regularly hit by typhoons and tropical storms. On average, the country experiences about 20 typhoons annually, with around 7-10 making landfall. These storms bring heavy rainfall, strong winds, and flooding, causing significant damage. The combination of heavy rainfall from typhoons and the country's mountainous terrain makes the Philippines prone to flooding and landslides. The monsoon season increases these risks, leading to frequent and severe flooding events. The Philippines' coastal areas are vulnerable to tsunamis generated by undersea earthquakes. The country's extensive coastline increases the risk of tsunami impact, particularly in regions near tectonic plate boundaries. The Philippines has a high population density with significant coastal settlements so is at high risk of natural disasters. California California lies along the boundary between the Pacific Plate and the North American Plate, specifically the San Andreas Fault. This tectonic setting causes frequent earthquakes, some of which are very powerful and damaging. California has a varied climate and topography, making it prone to wildfires. Hot, dry summers combined with strong winds (like Santa Ana winds) often lead to large, destructive fires.	(6)

		The state experiences seasonal heavy rainfall, especially during winter storms and El Niño years. This can cause flooding and, when combined with steep terrain, trigger landslides and mudflows. California's coastline is vulnerable to tsunamis generated by undersea earthquakes in the Pacific Ocean, particularly near subduction zones offshore. High population density and extensive urban development, especially in earthquake-prone areas like Los Angeles and San Francisco, increase the risk of damage and casualties during natural disasters. Accept other correct explanations and other multiple hazard zones.	
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 - Suggest one way sources such as this provide evidence of climate change in the past (1.3.4.1)	Mark
2 a (i)	AO1 (1 mark) and AO2 (1 mark) The River Thames is shown to be frozen (1) showing that temperatures were significantly colder allowing a major river to freeze (1) Frost fairs were held on the surface of the River Thames (1) showing that temperatures were significantly colder allowing the markets to be held (1) It allows a comparison of current and past weather (1) for example the River Thames was frozen but now is not (1)	(2)

Question Number	Answer - Explain one source that could provide evidence for long-term climate change (1.3.4.1)	Mark
2 a (ii)	AO1 (3 marks) Trees add a new layer of growth each year with the thickness varying with climatic conditions (1) wider rings indicate favourable growing conditions e.g. warm and wet (1) by analysing these scientists can reconstruct annual records of temperature and prediction (1). Ice cores drilled from glaciers and ice sheets contain trapped air bubbles that preserve samples of the ancient atmosphere (1) by analysing the gases e.g. carbon dioxide/methane, (1) scientists can infer past atmospheric composition and temperature (1) Ocean sediment cores contain layers of sediments that accumulate over time (1) these layers include microfossils (1) whose shell composition reflect the temperature and chemistry of the ocean at the time they lived (1). Plants produce pollen grains that settle in lakes and soils and are preserved over thousands of years (1). Pollen records allow scientists to see which plants thrived in different climates (1) this allows them to infer what the climate was like when the layer was formed (1) Accept other correct explanations.	(3)

Question Number	Answer – Explain two reasons why there is uncertainty over future global warming trends (1.3.5.3)	Mark
2 (b)	AO1 (4 marks) Award 1 mark for each basic explanation and a further mark for a development of the explanation. There is uncertainty around population growth, as population grows so does the demand for energy/transportation/housing /food (1). These often lead to high greenhouse gas emissions making it challenging to predict exact warming levels (1) As countries develop economically, there energy consumption typically increases (1) The pace and nature of economic growth can lead to increased reliance on fossil fuels (1) There is uncertainty in predicting how quickly or extensively countries will adopt cleaner technologies/renewable energy sources (1) meaning it is challenging to predict how high greenhouse gas emissions will be in the future (1) The success of mitigation strategies such as reducing greenhouse gas emissions depends upon how effectively they are implemented globally (1). Different countries have varying capacities to adopt these measures, so it is this variability that creates uncertainty in predicting the overall impact on global warming (1) Melting ice reduces Earth's reflectivity, increasing heat absorption/albedo feedback idea (1). The rate at which ice sheets and sea ice will melt is uncertain, so climate models struggle to predict the strength of this positive feedback (1) Large forest systems like the Amazon may die back under heat/drought stress, reducing their ability to absorb CO₂ (1) It is unclear when tipping points will be reached/how severe dieback will be (1) Major volcanic eruptions release ash/aerosols that reflect sunlight and cool the climate temporarily (1) Future volcanic events are unpredictable in timing and magnitude (1) Accept other correct explanations. Mark as 2 + 2	(4)

Question number	Answer – Explain why it is difficult for farmers to adapt to changing precipitation patterns (1.3.5.6/1.3.6.4)		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: In many regions, precipitation patterns have become highly unpredictable, making it difficult for farmers to plan their planting and harvesting schedules. For example, unexpected droughts or heavy rains can disrupt the growing season, leading to crop failures and reduced yields. Shifting precipitation patterns can result in either too much or too little water at critical times. Excessive rainfall can lead to flooding, soil erosion, and waterlogging, damaging crops and infrastructure. Conversely, prolonged dry periods can cause water shortages, stressing crops and reducing productivity. Effective water management becomes increasingly complex, requiring investments in irrigation systems, drainage, and water storage, which may not be feasible for all farmers, especially in developing regions. In Southern Asia the region the variability in monsoon rains impacts agriculture in countries like India and Bangladesh. Unpredictable rainfall patterns can lead to both droughts and floods, affecting staple crops such as rice and wheat. In Sub-Saharan Africa the region is highly dependent on rain-fed agriculture. Changes in precipitation patterns can lead to food insecurity due to reduced crop yields and increased frequency of droughts. Accept any other valid responses.		(6)
Level	Mark	Descriptor	
	0	No rewardable material.	
Level 1	1-2	Demonstrates isolated elements of geographical knowledge and understanding, some of which may be inaccurate or irrelevant. (AO1) Understanding addresses a narrow range of geographical ideas which lack detail. (AO1)	

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

Question Number	Answer - Identify the correct statement	Mark
3a (i)	A02 (1 mark) C USA had more start-ups than the other 4 countries combined	(1)

Question Number	Suggest one reason why the USA had the largest number of business startups (1.4.2.2)	Mark
3a (ii)	AO1 (2 mark) / A02 (1 marks) Award 1 mark for each basic explanation and a further mark for a development of the explanation. The USA has a large and stable economy (1) this stability attracts investors who seek a reliable market to launch new business ventures (1) The USA has strong financial support allowing ideas to transform into viable businesses (1) this is driven by accessible capital markets (1) The USA has a strong culture of innovation (1) encouraged through high education levels through institutions such as Stanford and Harvard (1) The USA has a diverse population bringing together people from different cultural and educational backgrounds (1) this mix fosters creativity as individuals contribute unique perspectives and solutions (1) The USA's diverse workforce includes highly skilled individuals (1) this broad talent pools allow startups to find the expertise they need to grow and compete effectively (1) Accept other correct explanations.	(2)

Question Number	Explain one way that national governments can encourage business start-ups (1.4.2.2)	Mark
3a (iii)	AO1 (2 mark) / A02 (1 marks) Award 1 mark for each basic explanation and a further mark for a development of the explanation. Governments could join free trade blocs which removes tariffs and trade barriers between member countries (1) This makes it easier/cheaper for new businesses to access larger markets (1) Governments can establish Special Economic zones (SEZs) where businesses benefit from tax breaks/relaxed regulation (1). This lowers costs for new businesses starting out (1) National governments could offer grants/low-interest loans to entrepreneurs (1) this reduces financial risk and makes starting a business more affordable (1)	(2)

	Governments could offer tax breaks or exemptions for start-ups to encourage investment (1) this lowers the costs in the early stages helping businesses to grow (1) Accept other correct explanations.	
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Question Number	Answer - Explain how these two global flows have deepened connections between countries (1.4.1.1)	Mark
3 (b)	AO1 (4 marks) Award 1 mark for a basic explanation and a further mark for a development of the explanation up to 2 marks. Information The rapid exchange of information through the internet and digital technologies has revolutionised communication (1). It allows for instant sharing of knowledge, innovation, and cultural exchange, making the world more interconnected (1). Businesses share data globally, making international trade and investment easier (1). This allows companies to coordinate supply chains across continents using shared information systems. (1) Information flows through media/streaming platforms/social networks spread ideas/trend/cultural practices (1), creating stronger social and cultural links between countries. (1) Commodities The global trade of goods allows countries to access products that are not locally available/are more efficiently produced elsewhere. (1) This exchange boosts economic growth and fosters international relationships (1). Commodities often move through multiple countries during production and distribution. (1) This integrates economies and fosters partnerships between businesses worldwide. (1) Nations rely on each other for essential resources and products. (1) This creates strong economic ties and encourages cooperation to maintain stable supply chains. (1) Mark as 2+2 Accept other correct explanations. N.B – interpret “deepen” as more connections, faster connections or more intense connections. Accept commodities as either trade in goods or trade in commodities	(4)

Question number	Answer – Explain the physical and political reasons why some locations are weakly connected to the global economy (1.4.3.3)	Mark
3 (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: Physical reasons: Countries without a coastline have limited access to global shipping routes, making trade more expensive. For example, Chad is landlocked in Central Africa, increasing transport costs and reducing global trade connections. Difficult terrain restricts infrastructure development and transport links, isolating regions from global markets. For example, Nepal has rugged mountains that make road and rail connectivity challenging. Extreme climates (deserts, polar regions) limit agriculture and industry, reducing export potential. For example, Mongolia has a harsh continental climate, limiting agricultural productivity and global trade. Frequent disasters disrupt infrastructure and deter investment, weakening global connections. For example, Haiti suffers from earthquakes and hurricanes, which damage transport and communication systems. Political reasons: Ongoing wars or civil unrest discourage foreign investment and trade. For example, Afghanistan has decades of conflict, limiting integration into the global economy. High tariffs or bans on imports/exports reduce global economic links. For example, North Korea imposes strict trade controls, isolating itself from global markets. Poor regulation and corruption deter multinational companies and investors. For example, Somalia has weak governance and high corruption, limiting global business connections. Countries under international sanctions cannot trade freely. For example, Iran faces sanctions that restrict its ability to engage in global trade. Accept other correct explanations.	(6)

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

Question Number	Answer – Which theory of the relationship between population and resources is represented by figure 4 (1.4.4.3)	Mark
4 a (i)	AO2 (1 mark) D: Malthus	(1)

Question Number	Answer – Explain how rising affluence could lead to shortages of these two resources (1.4.4.3)	Mark
4 a (ii)	AO1 (2 marks) Award 1 mark for a basic explanation and a further mark for a development of the explanation. Food Rising affluence increases demand for meat and processed foods (1). Producing meat requires large amounts of grain for animal feed/land/water (1) / so more land is used for livestock instead of crops for human consumption, leading to food shortages. (1) Higher incomes lead to more food waste (1). Affluent households buy more than they need and discard excess (1)/ reducing available supply and putting pressure on global food systems. (1) Energy Rising affluence increases car ownership and energy use in homes (1). This raises demand for oil, gas, and electricity (1) / which can outstrip supply and cause shortages or higher prices (1). Affluent lifestyles increase demand for manufactured goods (1). Factories require large amounts of energy for production (1) /so industrial growth driven by consumer demand can strain energy resources (1). N.B. Answers focusing on impacts resulting from population increase are unlikely to gain credit. Accept other correct descriptions.	(4)

Question Number	Answer Explain the negative impacts of urbanisation on surrounding rural areas (1.4.6.1)	Mark
4 (b)	AO1 (4 marks) Award 1 mark for each basic explanation and a further mark for a development of the explanation. Urbanisation may result in the loss of rural workforce (1) leading to depopulation/labour shortages in rural areas (1)/ reducing the amount of food produced/ dependent population remains (1) As urban areas expand, they often encroach on nearby rural lands (1), leading to the depletion of natural resources and environmental degradation (1). Urbanisation can lead to the loss of agricultural land (1) which can impact food production and local livelihoods. (1) As urban areas expand it can lead to deforestation in rural areas (1) which can the disruption of local ecosystems (1). Urbanisation can lead to the concentration of resources and services in urban centres (1) leading to poor access to education/healthcare in rural areas (1). Mark as 2+2 Accept other correct explanations.	(4)

Question number	Answer - Explain why some people have positive attitudes towards immigration whereas the attitude of others is negative (1.4.5.2)	Mark
4 (c)	AO1 (6 marks) Marking instructions Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below. Indicative content guidance The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include: People often perceive migrants as either a benefit or a threat to the local economy. Those who believe migrants contribute positively by filling labor shortages and boosting economic growth tend to have more favorable attitudes. Conversely, individuals who fear job competition or strain on public services may hold negative views. Cultural identity and social cohesion play significant roles. People who feel that migrants enrich the cultural diversity of their	(6)

		community are generally more welcoming. On the other hand, those who perceive migrants as a threat to their cultural values and social norms may be more resistant. Higher levels of education are often associated with more positive attitudes towards migration. Educated individuals are more likely to understand the benefits of migration and be less influenced by stereotypes and misinformation. Political rhetoric and media portrayal of migrants can shape public opinion. Positive or negative framing of migration issues by politicians and media outlets can significantly influence people's attitudes. Direct interactions with migrants can also impact attitudes. Positive personal experiences with migrants can lead to more favorable views, while negative experiences can reinforce prejudices. Accept any valid responses	
Level	Mark	Descriptor	
	0	No rewardable material.	
Level 1	1-2	Demonstrates isolated elements of geographical knowledge and understanding, some of which may be inaccurate or irrelevant. (AO1) Understanding addresses a narrow range of geographical ideas which lack detail. (AO1)	
Level 2	3-4	Demonstrates geographical knowledge and understanding, which is mostly relevant and may include some inaccuracies. (AO1) Understanding addresses a range of geographical ideas which are not fully detailed and/or developed. (AO1)	
Level 3	5-6	Demonstrates accurate and relevant geographical knowledge and understanding throughout. (AO1) Understanding addresses a broad range of geographical ideas which are detailed and fully developed. (AO1)	

Question number	Suggest both physical and human reasons for the distribution of natural disaster risk (1.3.1.1/1.3.2.1)
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: Hazard risk refers to the probability or likelihood of a natural hazard occurring and causing harm to human life, property, and the environment. Hazard risk combines two main components. Severity of the natural event includes the intensity and magnitude of the hazard, such as the strength of an earthquake or the volume of floodwaters. Vulnerability of the affected population which considers how susceptible a population is to the hazard, which can be influenced by factors like population density, infrastructure quality, and preparedness levels. AO2: Physical factors: Regions along tectonic plate boundaries, such as the Pacific Ring of Fire, are more prone to earthquakes and volcanic eruptions due to the presence of subduction zones. Areas prone to extreme weather events, like hurricanes, typhoons, and monsoons, face higher hazard risks. For example, the Caribbean and Southeast Asia frequently experience these events due to their climatic conditions. Mountainous regions are susceptible to landslides and avalanches, whilst low-lying coastal areas are at risk from flooding and tsunamis. Human factors: Highly populated areas, especially urban centers, have higher vulnerability due to the concentration of people and infrastructure. Wealthier countries often have better infrastructure, building codes, and disaster preparedness, reducing their vulnerability. In contrast, developing countries may lack these resources, increasing their risk. Deforestation, poor land management, and rapid urbanisation can exacerbate the impact of natural hazards. For instance, deforestation can increase the risk of landslides and flooding. Effective governance and strong institutions can mitigate hazard risks through policies, regulations, and emergency response systems. Conversely, weak governance can lead to higher vulnerability. Accept any valid responses

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	“Sea-level rise is the most significant threat resulting from global warming.” To what extent do you agree? (1.3.5.3/1.3.6.2)
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 Sea level rise refers to the increase in the average level of the world’s oceans. This phenomenon is primarily driven by two factors related to global warming: thermal expansion and melting ice. Sea level rise is largely due to increased greenhouse gas emissions from human activities, which trap heat in the atmosphere and lead to global temperature increases. Threats from sea level rise include coastal flooding, loss of habitable land, salt-water incursion, threats to biodiversity, displacement of communities. AO2 Agree: Rising sea levels increase the risk of coastal flooding, which can inundate homes, infrastructure, and agricultural land. By 2100, up to 410 million people could be at risk from coastal flooding due to sea-level rise. This poses a significant threat to densely populated coastal cities and low-lying regions. Many small island nations and coastal areas face the risk of losing land to the sea. For example, the Maldives and Kiribati could lose substantial portions of their land area, threatening their very existence. Additionally, rising sea levels can destroy critical habitats for wildlife, leading to loss of biodiversity. The economic costs of sea-level rise are enormous. Coastal infrastructure, including ports, roads, and buildings, will require significant investment to protect or relocate. The increased frequency and severity of storm surges and flooding can disrupt economic activities, leading to substantial financial losses. Rising sea levels can force communities to relocate, leading to displacement and migration. This can create social and political challenges, as displaced populations may face difficulties in finding new homes and livelihoods.

	Higher sea levels can amplify the impact of storms and hurricanes, leading to more severe storm surges and flooding. This can result in greater damage to coastal areas and increased loss of life. Disagree: Innovations in engineering and technology could mitigate the impacts of sea-level rise. For instance, improved coastal defences, such as sea walls, flood barriers, and advanced drainage systems, can protect vulnerable areas from flooding. Additionally, advancements in climate engineering, like carbon capture and storage, could help reduce the overall rate of global warming and, consequently, slow down sea-level rise. Many countries are already implementing adaptation strategies to cope with rising sea levels. These include relocating communities, developing resilient infrastructure, and restoring natural barriers like mangroves and wetlands. Effective planning and investment in these areas can significantly reduce the risks associated with sea-level rise. The impact of sea-level rise can vary significantly based on local factors such as land subsidence, regional ocean currents, and geological conditions. Some areas may experience less severe effects, allowing them to manage and adapt more effectively compared to regions facing more immediate and severe threats. Other aspects of climate change, such as increased frequency and intensity of extreme weather events (e.g., hurricanes, heatwaves, and droughts), can have more immediate and widespread impacts. These events can cause significant damage to infrastructure, disrupt food and water supplies, and lead to loss of life. The depletion of essential resources like fresh water, arable land, and energy sources can lead to conflicts and geopolitical instability. As populations grow and resources become scarcer, competition for these resources could escalate, potentially leading to wars and large-scale displacement. Accept any valid responses
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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 projected changes to the population structure and population size of Madagascar between 2020 and 2050. (1.4.4.1)
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 Population pyramids show the structure of a population by comparing relative numbers of people in different age groups. Madagascar's population pyramids show a transition from a youthful population to a more balanced age structure, with implications for economic development, healthcare, and social policies. The 2015 population pyramid has a wide base, indicating a high birth rate. By 2050, the base of the pyramid is narrower compared to 2015, indicating a decline in birth rates. AO2 In 2015, a significant portion of the population is in the younger age groups (0–14 years), reflecting a youthful population. The pyramid narrows significantly as age increases, showing higher mortality rates and a smaller elderly population. This suggests lower life expectancy and higher child dependency ratios. This shift suggests that Madagascar is experiencing demographic transition with lower fertility rates. The middle and upper sections of the pyramid are wider, reflecting an increase in the working-age population (15–64 years) and a growing elderly population (65+ years). This indicates improvements in healthcare and life expectancy. The narrowing base in 2050 suggests that birth rates are expected to decline. Increased availability and use of contraceptives allow families to plan the number and spacing of their children more effectively. This leads to a reduction in birth rates development. As more women gain access to education and employment opportunities, they tend to have fewer children. Educated women are more likely to delay marriage and childbirth, contributing to lower fertility rates. Improvements in medical care, including better maternal and child health services, vaccinations, and treatments for infectious diseases, have significantly reduced mortality rates. This results in more people living

		longer, which is reflected in the wider middle and top sections of the 2050 pyramid. As Madagascar continues to urbanise, more people move to cities where they have better access to healthcare, education, and employment opportunities. Urban living often correlates with lower birth rates and higher life expectancy. This demographic shift will likely lead to an increased focus on elderly care and social support systems. Accept any valid responses
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	“The benefits to Asian countries, of the shift in the global economic centre of gravity, far outweigh the costs“ To what extent do you agree? (1.4.3.1/1.4.3.3)
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 The movement of the global economic centre of gravity to Asia refers to the shift in economic power and influence from traditional Western economies (like those in Europe and North America) to Asian countries, particularly over the last few decades. Benefits of the global shift include poverty reduction, waged work, infrastructure investment, education and training. Negatives of the global shift include increased environmental damage and pollution, loss of economy with previous industrialised regions. AO2 Agree: Countries like China, India, and other Asian nations have experienced significant economic growth, lifting millions out of poverty and improving living standards. This growth has contributed to global economic stability and expansion. The influx of foreign direct investment (FDI) has led to the development of modern infrastructure, including transportation networks, telecommunications, and urban development. This has enhanced connectivity and efficiency within and between countries. Asia has become a hub for technological innovation, with countries like China and South Korea leading in areas such as electronics, telecommunications, and renewable energy. This has spurred global technological advancements and increased productivity. The economic rise of Asia has diversified global markets, reducing reliance on traditional Western economies. This diversification has provided more opportunities for businesses and investors worldwide.

	The economic boom in Asia has significantly reduced poverty levels, improving health, education, and overall quality of life for millions of people. Increased economic interactions have fostered greater cultural exchange and understanding between Asia and the rest of the world, enriching global cultural diversity. Disagree: Rapid industrialisation in many Asian countries has led to severe environmental issues, including air and water pollution, deforestation, and overexploitation of natural resources. For example, China and India face significant air quality challenges due to industrial emissions and urbanisation. The increase in manufacturing and energy consumption has contributed to higher greenhouse gas emissions, exacerbating global climate change. This has long-term negative impacts on both regional and global scales. The economic boom has not been evenly distributed, leading to significant income disparities within and between countries. While urban areas and certain sectors have prospered, rural areas and lower-income populations often remain marginalised. The demand for cheap labour has led to poor working conditions, low wages, and exploitation in some manufacturing sectors. This has raised concerns about labour rights and the ethical implications of global supply chains. The rise of economic power in Asia has sometimes led to increased geopolitical tensions, particularly in areas like the South China Sea. These conflicts can destabilise the region and have broader implications for global security. The swift pace of urban growth has often led to the development of unplanned settlements and slums, which lack basic amenities and are vulnerable to environmental hazards. Accept any valid responses
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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)