GradeMax



Mark Scheme (Results)

January 2022

Pearson Edexcel International A Level In Geography (WGE01)

Paper 1: Global Challenges

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January 2022
Question Paper Log Number P70694A
Publications Code WGE01_01_2201_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 (1.3.1.2)	Mark
1 a (i)	AO1 (1 mark) MC A: South East to North West	**(1)**

Question Number	Answer - Describe the distribution of tropical cyclone tracks shown (1.3.1.2)	Mark
1 a (ii)	A02 (2 marks) Award 1 mark for each description of tropical storms. Maximum 2 marks. Storms occur over the ocean/Pacific Ocean/Indian Ocean (1) Between approximately 5-25° North/South of the Equator (1) Accept other correct explanations.	**(2)**

Question Number	Answer - Explain one reason for the distribution of tropical cyclone tracks shown. (1.3.1.2)	Mark
1 a (iii)	AO1 (1 mark) / A02 (1 mark) Award 1 mark for identifying an explanation and a further expansion mark up to a maximum of 2 marks. Tropical storms are found between the Tropics so will have warm ocean temperatures (1) this allows storms to gain energy for convection (1) Coriolis effect is active away from the Equator/between approx. 5-25°(1) so generates anti-clockwise rotating storms (1) Accept other correct explanations.	**(2)**

Question Number	Answer - Explain how the ENSO (El Niño-Southern Oscillation) cycles contribute to drought risk (1.3.1.2)	Mark
1 (b)	AO1 (4 marks) Award 1 mark for a basic explanation and a further mark for a development of the explanation. During El Niño years, westward-blowing trade winds weaken along Equator. (1) This changes the air pressure and wind speed causing warm surface water to move eastward to the coast of northern South America (1) Cold surface water moves towards Northern Australia meaning that evaporation rates reduce (1) The descending air creates drier conditions which lead to drought in Northern Australia and Indonesia (1) During La Nina years, colder than usual subsurface water builds up along the western coast of South America (1) There is less water evaporated as the cooler, dry air is dense (1) This means it doesn't rise or form clouds (1) Resulting in less rain falling over the Eastern Pacific, Ecuador and Peru (1) Accept other correct explanations.	**(4)**

Question number	Answer - Explain why community preparedness for tectonic hazards is better in some places than others (1.3.3.3)	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: Community preparedness involves the cooperation within communities to enable them to prepare for tectonic events. There are three key categories; monitoring, protection and preparation. Monitoring includes actions taken to try to predict a tectonic event. Some nations have effective tectonic monitoring systems which allows them to respond with adaptations such as land use planning and raise awareness and increase resilience. Protection includes designing buildings so they are more resistant to damage or engineering the landscape. Building adaptations have been implemented in countries where the risk is high and they are able to afford the changes, such as aseismic houses built	**(6)**

	with reinforced foundations and cross-bracing. Therefore, these countries can adapt more easily. Land use management allows adaptation – in places development is not permitted in areas deemed to be most vulnerable to tectonic hazards. Preparation involves actions taken to ensure the population respond safely including earthquake drills for example. Less developed / emerging countries may have populations which are not able to adapt due to low financial viability to undertake a scheme. In less developed/emerging countries populations may have been forced into more risky areas such as steep slopes, increasing the potential for loss of life/damage to property. Physical condition or geographical proximity to plate boundaries mean that some places are more at risk than others. Accept other correct explanations.	

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 - Define the term 'greenhouse gas' (1.3.5.1)	Mark
2 a (i)	AO1 (1 mark) Gases in the Earth's atmosphere that trap heat (1) Gases in the atmosphere that contribute to the greenhouse effect (1) Do not credit names of gases	**(1)**

Question Number	Answer - Describe the trends in China's methane emissions (1.3.5.1)	Mark
2 a (ii)	AO2 (2 marks) Award 1 mark for each description: An overall increase / increase from 1990-2018 (1) Plateauing/levelling off from 1990-2005 (1) Greatest increase after 2005 (1) Overall increase has not been significant (1) Credit other valid descriptions.	**(2)**

Question Number	Answer – Suggest one reason why China's carbon dioxide emissions per person increased between 1990 and 2018 (1.3.5.1)	Mark
2 a (iii)	AO1 (3 marks) Award 1 mark for correct suggestion/reason for carbon dioxide increasing and a further extension mark of why this increase has taken place. Rapid industrialisation due to global shift/open-door policy/FTZs (1) using fossil fuels such as coal to fuel their manufacturing (1) Rise of the middle-class population(1) which has led to increased proportions of car ownership (1) Burning of fossil fuels for energy (1). This has increased due to a lack of reliable alternatives/ rapid population growth (1) Accept other correct explanations.	**(2)**

Question Number	Answer - Explain how these two physical feedback mechanisms could lead to a climate change tipping point. (1.3.5.2)	Mark
2 (b)	AO1 (4 marks) Award 1 mark for correct explanation as to how the physical feedback mechanism works and a further extension mark of why this could lead to a climate changing tipping point. Ice albedo feedback: Increased melting to ice will lead to exposure of ground which has a lower albedo resulting in greater amounts of surface heating (1). This creates a physical feedback mechanism as it leads to greater rate of ice removal, therefore causing heating of the surface to occur at a greater rate (1) As the atmosphere and oceans warm, sea ice melts which exposes a darker ocean (1). This triggers a positive feedback by lowering the albedo of the ocean's surface leading to more of the sun's light being absorbed, amplifying the warming (1). Ocean carbon sinks: As temperatures of oceans increase, they become less able to absorb carbon dioxide reducing the capacity of the ocean to store carbon (1). This means more carbon dioxide will remain in the atmosphere further warming the planet (1). Accept other correct explanations. Mark as 2+2	**(4)**

Question number	Answer - Explain why groups and organisations may have different attitudes to the threat of global warming. (1.3.6.3)	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: Organisations involved in direct energy production using fossil fuels,or use oil-based products are less likely to see global	**(6)**

	warming as a threat as their productivity and profits are based on an industry which is contributing to global warming. Individuals' attitude to the threat of global warming will depend upon their level of education, cultural and social beliefs. A greater level of education could lead to you taking the threat of global warming more seriously and therefore choosing to reduce their carbon footprint. National governments attitudes may vary depending upon their level of development. Emerging countries such as China tend to be focused on rapid economic development through use of fossil fuel intensive energy reliance. Developed countries such as the USA have refused to join global actions to reduce emissions as they don't wish to reduce their economic stability. Other countries such as Norway and Sweden have chosen to take a more sustainable approach, with a heavy reliance on non-renewable resources. Countries with the highest level of carbon dioxide emissions tend to be the least concerned with global warming. Potentially as they are receiving the benefits i.e. good quality of life, rapid development and would be able to mitigate against the effects of global warming. Accept any other 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	Answer Identify which year the highest number of Chinese provinces opened Free trade Zones. (1.4.2.2)	Mark
3 a (i)	AO2 (1 mark) 2016	**(1)**

Question Number	Answer - Suggest one reason for the distribution of Free Trade Zones opened in 2015 (1.4.2.2)	Mark
3 a (ii)	AO1 (2 marks) Award 1 mark for identifying a reason why Free Trade Zones are located where they are in 2015 and a further expansion mark, up to a maximum of 2 marks. FTZ focused on coastal areas with sea ports (1) allowing for use of containers to ship to global markets (1) FTZ in 2015 tended to be built near to the original FTZ, Shanghai (1) this allowed them to develop connections with this FTZ providing economies of scale (1) Accept other correct explanations.	**(2)**

Question Number	Answer - Explain one environmental impact, for China, of TNCs outsourcing production to Free Trade Zones (1.4.3.3)	Mark
3 a (iii)	AO1 (3 mark) Award 1 mark for outlining an environmental consequence and further marks for explaining the issues this leads to. Industrial development leads to pressure on water resources (1) this is due to competing users which can affect the availability of water for agriculture and domestic supplies (1) leading to a potential increased water scarcity in the future (1) Rapid growth of industrial development generates increasing levels of solid and hazardous waste (1) which unless effectively treated can enter and contaminate local water sources (1) reducing freshwater availability (1). Increased emissions from industrial growth (1) leading to health issues in the local pollution (1) leading to increased demand for healthcare (1) Some of the Free Trade Zones are along the coastline so oceans may become polluted from the container ships (1) impacting food chains/biodiversity of the surrounding waters (1). Accept other correct explanations.	**(3)**

Question Number	Answer - Explain one way that consumers in the developed world have benefitted from globalisation (1.4.3.1)	Mark
3 (b)	AO1 (3 marks) Award 1 mark for identifying one way that consumers have benefited and further 2 marks for extended this through a linked explanation. Products have become cheaper (1) due to outsourcing of production to the Asian markets (1) resulting in reduced costs of labour being passed onto the consumer (1) Consumers can access a greater variety of products (1) as globalisation has allowed access to different countries/cultures (1), resulting in more choice for consumers (1) Increased access to tourism destinations (1) as transport developments have made destinations more accessible (1) and costs of transport has also reduced (1). Accept other correct explanations.	**(3)**

Question number	Answer - Explain how the movement of the global economic centre of gravity to Asia has benefitted the people living there. (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: Global shift is the relocating of the global economic centre of gravity to Asia from Europe and North America, over the last 30 years. This has particularly involved the shift of manufacturing jobs from Europe, Japan and North America to China and the shift of service and administration jobs to India, especially Bangalore. Increased job opportunities in outsourced factories and call centres, resulting in greater levels of income which can be used in improve quality of life. Higher incomes which can be used to improve housing and nutrition, as well as paying for healthcare. Households can use higher income to pay for more children's schooling.	**(6)**

	Outsourcing has helped lift millions out of poverty and many people have moved into the middle class and seen improvements in quality of life. TNCs invest in training and skills development to improve workforce productivity, and some skills are transferrable. The global shift has brought rapid growth though Foreign Direct Investment (FDI), which has been used to improve infrastructure, communications and levels of development. Accept other correct explanations.	

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 - Name the world region projected to experience the greatest increase in population by 2100 (1.4.4.1)	Mark
4 a (i)	AO2 (1 mark) Africa (1)	**(1)**

Question Number	Answer - Describe the population trend for Asia between 1950 and 2100 (1.4.4.1)	Mark
4 a (ii)	AO2 (2 mark) Award 1 mark for each trend in population. Maximum 2 marks. Population in Asia has increased steadily between 1950 to 2019 (1) Population growth is predicted to level off by 2060 (1) Growth in Asia starts to slowly decline between 2060 to 2100 (1) Accept other correct descriptions.	**(2)**

Question Number	Answer - Suggest one reason for the population projection for: (1.4.4.1)	Mark
4 a (iii)	AO1 (2 marks) / A02 (1 mark) Award 1 mark for a reason for the population projection for the named country and further marks for explanation up a maximum of 2 marks. Europe: Birth rates have declined (1) due to women getting married later and therefore their fertile window is smaller this means that population growth has stagnated (1) Europe is experiencing an ageing population (1) resulting in replacement levels declining so the population is stagnating (1) Reduced levels of economic migrants (1) resulting in a reduced birth rate which has normally supported the ageing populations (1). Africa: Declining mortality rates of children under 5 (1) due to vaccination programmes/improved water and sanitation/mass distribution of insecticide-treated bed nets (1) Decreasing death rates (1) due to rising income per capita/improvements in education/vaccination programmes (1) Fertility rates are high (1) due to culture/religious beliefs/low child survival rates (1) Increased life expectancy (1) due to declining AIDS mortality rates (1) Accept other correct explanations.	**(4)**

Question Number	Answer - Explain one way that an ageing population can impact healthcare provision (1.4.4.2)	Mark
4 (b)	AO1 (3 marks) Award 1 mark for identifying a way that an ageing population has impacted on social healthcare and a further 2 expansion marks, up to a maximum of 3 marks. There could be cuts in healthcare provision as the government is receiving reduced tax income (1). This could result in certain treatments requiring payment or face cuts (1). Government would need to spend more money on healthcare services for the elderly (1) meaning funds from other services may need to be reallocated/reducing services for the young and middle aged (1) Increased demand for social care provision as more elderly require places in care homes (1) so additional funding is required by the government (1).	**(2)**

Question number	Answer - Explain why there is disagreement about the relationship between population and resources (1.4.4.3)	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: The relationship between population and resources is dynamic due to population not being static. The growth and decline of population affect the availability of natural resources. Global population growth is unknown and depends upon present and future BR/DR; higher rates of growth may increase the likelihood of shortages in the future. Different theories have been put forward with regards to the relationship between population and resources: Malthus argued that population increases faster than food supply and if unchecked can lead to famine, war, disease in order to reduce the over-population. The relationship is contested however as Malthus couldn't foresee the advent of importing food or the changing role of women reducing the birth rate.	**(6)**

	Boserup argued that human innovation and technology advances would allow food production to keep up with population growth. The Club of Rome suggested that the earth have a 'limit to growth' and if industralialisation, population and resource depletion continued at the current rate, the limit of growth would be reached in the next 100 years. Club of Rome introduced the idea of sustainability and the need for us to balance population and resource demands. The Club of Rome view doesn't take into account the ability of humans to innovate i.e. High Yield Variety seeds (HYV) being used in Africa. 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	Explain how Figure 5 helps us understand the causes of long-term natural climate change (1.3.4.2)
5 (a)	**AO1 (5 marks)/AO2 (5 marks)** **Marking instructions** Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below. **Indicative content guidance** The indicative content below is not prescriptive, and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include: AO1: The cycles affect the amount of sunlight and therefore energy that earth absorbs from the sun. They provide a framework for understanding long term climate change and are responsible for triggering the beginning and end of glaciation periods (Ice Ages). Milankovitch cycles are major changes which occur between 26,000- and 100,000 years dependent on the cycle. These cycles affect the amount of sunlight and therefore, energy that the Earth absorbs from the sun. Milankovitch cycles are thought to cause variations of up to 25% in the amount of incoming radiation at the mid-latitudes. Precession (Axial Rotation): As the Earth rotates, it wobbles slightly upon its axis and the cycle of precession occurs over a period of roughly 26,000 years. Axial precession makes seasonal contrasts more extreme in one hemisphere and less extreme in another. Currently the precessions makes the Southern Hemisphere summers hotter and moderates Northern Hemisphere seasonal variations. Eccentricity (orbital shape): Eccentricity, is the shape of the Earth's orbit around the Sun. Over time, the pull of gravity from Jupiter and Saturn causes the shape of the Earth' orbit to vary from being nearly circular to being mildly elliptical. This explains why our seasons are slightly different lengths i.e. summers being 4.5 days longer than winters in the Northern Hemisphere. When the Earth's orbit is at its most elliptic, about 23% more solar radiation reaches Earth each year than it does at its furthest point. Axial tilt (Obliquity): The angle of the Earth's axis of rotation is tilted as it travels around the sun and explains why we have seasons. Over the last million years, it has varied between a tilt of 22.1° to 24.5° and back again. As obliquity decreases the seasons become milder, resulting in warmer winters, and cooler summers that gradually allow snow and ice at high latitudes to build up into large ice sheets. This then reflects more of the Sun's energy back into space, promoting even more cooling. AO2: Eccentricity is thought to contribute very little to global annual solar radiation amounts, because the variations in eccentricity are small. The Milankovitch cycles act separately and together to influence Earth's climate over a long-time span. Obliquity is thought to be the most important cycle

	because it affects the amount of solar radiation in the Earth's northern high-latitude regions during the summer. They are thought to provide a strong framework for understanding long-term changes in Earth's climate, but they can't account for the current period of rapid warming Earth has experienced since the pre-industrial period and particularly since the mid-20th Century. Over the last 150 years, Milankovitch cycles have not changed the amount of solar energy absorbed by Earth very much, and in the past 40 years solar radiation has actually decreased. Scientists are confident Earth's recent warming is due to human activities. However, the Milankovitch cycles are just one factor that may contribute to climate change in the past, as other factors such as changes in the extent of ice sheets and atmospheric carbon dioxide are key in driving the degree of temperature fluctuations. The extent of ice sheets is important in considering the long term climate change as they affect how much of the Sun's incoming energy is reflected back to space and therefore the Earth's temperature. Carbon dioxide levels have also fluctuated over millions of years, with levels of 180 ppm during glacial cycles driven by the Milankovitch cycle changes, compared with postindustrial levels of 412ppm driven by mass industralisation. Accept other appropriate 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	Answer - Assess the extent to which sea level rise is the most significant risk from global warming threatening communities. (1.3.5.2 and 1.3.5.3)
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 Climate change is a long-term shift in global or regional climate patterns. Sea level rise is a result of meltwater from glacier and ice sheets and thermal expansion of seawater as it warms. Sea level rise is a geographical threat caused by climate change and will affect low-lying areas such as river deltas in Myanmar, India and Bangladesh, as well as small island states such as the Pacific Islands. Impacts of sea level rise include; disappearance of some low-lying islands, increased flooding of coastal land, saltwater intrusion, increased erosion and habitat destruction in coastal areas. AO2 The threat of sea-level risk is determined by a countries height about sea level as well as the proportion of their population living in low-lying coastal areas. Most affected countries will be small island states which are unable to move their populations inland and may end up as environmental refugees. More developed countries such as China, India and Japan have a high GDP and can afford to implement adaptation strategies to protect their populations and coastal areas.

	Increased sea level can result in more severe storm surges, as a higher sea level can push more water inland during hurricane-related storm surge. Rising sea levels threaten infrastructure and coastal communities. Threats to Maldives/ Asian mega-deltas due to the low-lying nature of this land, combined with increasing subsidence rates. It is suggested that four out of five people impacted by sea level rise by 2050 will live in East or South Asia. Ability to mitigate against sea level rise through hard engineering strategies such as sea wall, surge barriers, water pumps and overflow chambers to keep water out. Some countries are adopting environmental approaches involving land recovery and the restoration of mangroves and wetlands to help cities cope with floodwater inundation. Candidates may argue that other threats are more significant: **Agriculture** Climate change could lead to greater temperatures, which could lead to increased climatic extremes e.g. heatwaves, which could impact on growing seasons or a reduction in rainfall could cause reduction in crop production. Countries dependent on coastal agricultural will face encroaching seawater and increased salinity in groundwater tables. This will impact both the water supply and the country's ability to grow crops. Shifts in climate belts could result in food shortages that could lead to forced migration results in greater pressure on neighboring countries. Increased problems with pestilence and crop disease associated with increased temperatures or decreased rainfall, could create an issue of food security in some areas. **Water resources** Water stress could lead to a greater potential for poverty and there will be a potential conflict between those areas that are water secure and those that are insecure. Increased demand for water will lead to increased need to import or invest in alternative water production/conservation measures – which could result in greater borrowing and debt for developing countries.

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	Answer - Suggest reasons for the pattern of the KOF Globalisation Index shown. (1.4.1.1)
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 The KOF Globalisation Index measures the economic, social and political dimensions of globalisation based on 23 variables. Economic globalisation is determined by long distance flow of goods, capital and services, as well as information. Social globalisation is the spread of ideas, information, images and people. Political globalisation is the diffusion of government policies. Netherlands are the most globalised country in the world, followed by Ireland and Belgium. The world's major economies are more inward-looking and tend to occupy lower ranks e.g. USA ranked 27 and China ranked 71. The least globalised countries are the Solomon Islands, Eritrea and Equatorial New Guinea. AO2 Smaller European countries top the list such as Netherlands and Belgium (81 and above) this is because of the close linkages with other European countries rather than the outside world. This has been developed through their membership of the EU. The least globalised countries tend to be small island states such as Papua New Guinea (21-40) which lack the economic connections to the rest of the world, as well as a lack of political integration. Ireland (81 and above) benefits from its geographical position being central between North America and Asia. This allows companies to coordinate their business throughout the working day, meaning it is attractive for FDI. The Republic of Ireland is a full member of the EU and this makes it an attractive location for gaining access to the EU market. It also uses the euro as its official currency which provides stability. Ireland offers business-friendly tax policies to large TNCs such as Apple, although this has been deemed illegal by the European Commission. China is surprisingly low on the KOF Index (41-60). Whilst it has been a long-standing exporter of goods and has become increasingly open socially and politically. The measurements of their financial market integration and trade barriers fluctuate depending on which markets they are trying to enter/attract. The USA (81 and above) is less integrated globally than most other countries. Candidates may comment on the inward government focus, particularly driven under the Trump administration.

	Africa on the whole tends to have low globalisation scores, with the exception of South Africa. This is due to a low share in the global economy driven by a focus on the primary sector without developing processing industries to benefit from adding value to products. Places such as North Korea are switched off from globalisation due to government restrictions. The Communist Party controls almost every aspect of economic activity and has limited interactions with the globalised world. They are also under heavy sanctions from the UN Security Council which limits their imports and exports.	
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	Answer - Assess the extent to which the growth of the internet is the most significant contributor to recent globalisation. (1.4.1.2 and 1.4.1.1 and 1.4.1.3)
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 Globalisation is the process by which people, culture, finance, goods and information transfer between countries. Globalisation can be viewed as economic, cultural, political, environmental or demographic. More recent developments in the growth of the internet include widening use of mobile phones, social networking, electronic banking and fibre optics. Other factors have been significant in driving globalisation including transport, trade agreements and trade blocs. AO2 The advent of **broadband internet** in the 1980s and 1990s meant that large amounts of data could be moved quickly through cyberspace. This sped up financial flows and business decisions. The internet has also increased connectivity between people and places through interfaces such as Facebook and Instagram. **Social networking** has enabled meetings to be organised using apps like Zoom and Facetime which means that it is possible to organise and communicate whilst on the move. **Mobile phone technology** has enabled people to travel extensively – booking online, rating companies online; across different regions enabling the development of global interactions between countries. The development of 4G and 5G technology means that people's access to the internet has greatly improved and people have greater access to Wi-Fi connections therefore it is easier to organise meetings and control logistics. Developing countries have also been predominately globalised through communication technology due to leapfrog technology such as mobile phones. Countries such as Egypt have around 70% of their population accessing the internet through mobile phones only. Fibre optics has allowed gigantic amounts of data to flow across the Earth's ocean floors through fibre-optic cables owned by national governments or internet

	TNCs such as Google. These cables have allowed TNCs to effectively outsource their production particularly in the service industry such as call centres. All these changes are responsible for the shrinking world effect. Distant places now feel closer together than before and it takes less time to reach them. Candidates may argue other factors were more significant in contributing to globalisation: Transport Improvements in aircraft have meant that people are able to travel greater distances at a reduced amount of time and at a lower cost. Aircrafts are also safer and therefore more people are willing to travel. Containerisation has reduced shipping costs and has been key in allowing TNCs to outsource their centre of production from Europe towards Asia, this is particularly evident in China. Improvements in containerisation have led to greater trade in cargo throughout the oceans. Boats can now carry more cargo therefore the cost of transportation is less therefore companies will deliver further. Trade agreements and trade blocs The International Monetary Fund (IMF), World Bank and World Trade Organisation (WTO) have worked together to create 'free trade'. They have persuaded developing countries to adopt free market economies and adopt a 'western model' of trade. National governments have promoted the growth of trade blocs allowing them to trade freely and allow the flow to goods and money.

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

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

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