

# Oxford Revise | AQA A Level Geography | Answers

## Chapter 10

Exemplar answers have been written by the author of the revision guide and are not created or approved by AQA. They do not necessarily represent the only possible solution or way to answer the question. All exemplar answers are likely to be in the top mark band.

Questions 1–5 are point-marked. 1 mark per valid point with extra marks for development.

1 AO1 = 4

- Many disease vectors, e.g. mosquitos or parasitic worms, thrive in warm temperatures with abundant rainfall (1).
- Heavy rainfall creates stagnant water, providing habitats and breeding grounds for vectors (1).
- Areas of the world with a warm and wet climate, e.g. between the Tropics, will have a higher incidence of diseases spread by vectors (1), such as malaria and bilharzia (1).
- Mosquitoes are a disease vector spreading diseases, such as malaria, dengue fever and Zika virus (1). Mosquitos thrive in specific climatic conditions (1) – warm temperatures and abundant rainfall (1). Heavy rainfall creates stagnant pools of water, which allows mosquitoes to lay their eggs (1).
- Areas with a warm and wet climate, e.g. between the Tropics, will have a higher incidence of these diseases (1). Transmission of malaria peaks during and shortly after rainy seasons (1).

Example answer: *There is a relationship between climate and incidence of disease. Mosquitoes are a disease vector that spread diseases such as malaria and bilharzia. They thrive in specific climatic conditions – warm temperatures and abundant rainfall. Heavy rainfall creates stagnant pools of water, which allows mosquitoes to lay their eggs. Areas of the world with a warm and wet climate, e.g. between the Tropics, will have a higher incidence of these diseases and transmission of malaria peaks during and shortly after rainy seasons.*

2 AO1 = 4

- The pattern of food consumption varies globally and between regions (1).
- The quantity of food available for consumption has increased globally (1), but varies between region, with North America having the highest (1) and Africa having the lowest (1).
- The share of the population who are undernourished is highest in Sub-Saharan Africa (1). Rates in South Asia are higher than the Americas and East Asia (1).
- In 2020, 53 per cent of the population were undernourished in Somalia, whereas rates in North America and Europe are below 2.5 per cent (1).
- Rates of overconsumption are increasing due to an increased intake in food high in fat and sugar (1), particularly in lower- and middle-income countries (1).

3 AO1 = 4

- Top layers of soil are eroded by wind, intensive farming, deforestation, overcropping or prolonged and heavy rainfall (1).
- The rate of erosion is determined by climate, topography, soil type and vegetation cover (1).
- Soil quality is important to agricultural output and yield (1).
- Soil erosion could lead to a loss of the fertile layer of soil and lack of nutrients for crop growth (1).
- Land is less productive, so agricultural productivity is lower (1).

**4 AO1 = 4**

- A decline in fertility rates can lead to economic growth (1) due to the productivity of the working-age population and low number of young dependants (1).
- Money can be invested in social development and a country can see improvements (1).
- This time is limited, as a prolonged fall in fertility rates will lead to those who were economically active becoming elderly dependents alongside a shrinking workforce, which will reduce economic growth (1).

**5 AO1 = 4**

- Economic migrants weigh up push and pull factors (1) and assess intervening obstacles when deciding whether to migrate (1). There are many interlinked factors which affect migration flows (1).
- They are attracted by the opportunity to remit their wages to their family in the origin country (1).
- Elderly members of the population could engage in retirement migration, e.g. UK to Spain (1).
- Many migrants now engage in south-south migration (1), where economic migrants move to low- and middle-income countries (1) due to the increasingly restrictive nature of advanced economies' migration policies, also due to growing opportunities in rapidly developing industrialising countries and the ease of travelling shorter geographical distances (1).

**Questions 6–13 are level-marked.**

**6 AO3 – Analysis of the trends, connections and relationships between access to drinking water and the number of deaths attributed to unsafe water.**

AO3 = 6

Level	Marks	Description
2	4–6	<ul style="list-style-type: none"> <li>• Clear analysis of the quantitative evidence provided, which makes appropriate use of data in support.</li> <li>• Clear connection(s) between different aspects of the data.</li> </ul>
1	1–3	<ul style="list-style-type: none"> <li>• Basic analysis of the quantitative evidence provided, which makes limited use of data in support.</li> <li>• Basic connection(s) between different aspects of the data.</li> </ul>

- There is a clear relationship between access to drinking water and deaths attributed to unsafe water.
- Almost 98 per cent of high-income countries have safely managed drinking water access.
- Only 29 per cent of low-income countries have safely managed water.
- Areas such as sub-Saharan Africa and Central and South Asia have higher numbers of deaths attributed to unsafe water, e.g. India has 50–100 per 100,000 deaths.
- There are anomalies, such as Latin America and the Caribbean having only 75 per cent of the population accessing safely managed drinking water, but South America shows only 0–10 per 100,000 deaths attributed to unsafe water.
- The key for Figure 1b is shown in ranges, so the choropleth map does not show which areas have zero deaths from unsafe water.

*Example answer: There is a clear relationship between access to drinking water and deaths attributed to unsafe water. Almost 98 per cent of high-income countries have safely managed drinking water access. Areas such as North America and Europe have 0–10 per 100,000 deaths attributed to unsafe water. Only 29 per cent of low-income countries have safely managed water. Areas such as sub-Saharan Africa and Central and South*

*Asia (India, Pakistan, Bangladesh) have higher numbers of deaths attributed to unsafe water, e.g. India has 50–100 per 100,000 deaths. There may be some anomalies, such as Latin America and the Caribbean having only three-quarters of the population accessing safely managed drinking water, but South America shows only 0–10 per 100,000 deaths attributed to unsafe water. As the choropleth map key is shown in ranges, it is unclear which areas have zero deaths from unsafe water.*

- 7** AO3 – Evaluation and analysis of the quantitative data shown in Figures 2a and 2b in showing the leading causes of death in low-income countries and high-income countries.  
AO3 = 6

Level	Marks	Description
2	4–6	<ul style="list-style-type: none"> <li>• Clear analysis of the quantitative evidence provided, which makes appropriate use of data in support.</li> <li>• Clear connection(s) between different aspects of the data.</li> </ul>
1	1–3	<ul style="list-style-type: none"> <li>• Basic analysis of the quantitative evidence provided, which makes limited use of data in support.</li> <li>• Basic connection(s) between different aspects of the data.</li> </ul>

- The graphs are useful in showing variation in the leading causes of death due to development levels.
- E.g. in low-income countries, 6 of the 10 leading causes of death are from communicable diseases.
- E.g. in high-income countries only 1 leading cause of death is from a communicable disease.
- E.g. in high-income countries 9 out of the 10 leading causes of death are from non-communicable diseases, whereas in low-income countries only 3 leading causes of death are from a non-communicable disease.
- The graphs show change between 2000 and 2019 clearly, they show that in low-income countries, the deaths from all communicable diseases have decreased between 2000 and 2019 and the deaths from all non-communicable diseases have increased.
- In high-income countries, deaths from all causes have increased, with the exception of stroke and heart disease, which have decreased.
- Some of the categories are a large group of diseases e.g. lower respiratory infections, so it is not clear which diseases are included. Some are singular diseases e.g. malaria.
- The data is in raw numbers, with two very different axes, which makes comparison more difficult. Percentage data would be easier to compare.

- 8** AO1 – Knowledge and understanding of population change in a country/society.  
AO2 – Application of knowledge and understanding to evaluate the extent to which the implications of the population change are socio-economic.  
AO1 = 4 AO2 = 5

Level	Marks	Description
3	7–9	<ul style="list-style-type: none"> <li>• AO1 – Demonstrates detailed knowledge and understanding of concepts, processes, interactions and change. These underpin the response throughout.</li> <li>• AO2 – Applies knowledge and understanding appropriately with detail. Connections and relationships between different aspects of study are fully developed with complete relevance. Analysis and evaluation is detailed and well supported with appropriate evidence. A well-balanced and coherent argument is presented.</li> </ul>

2	4–6	<ul style="list-style-type: none"> <li>• AO1 – Demonstrates some appropriate knowledge and understanding of concepts, processes, interactions and change. These are mostly relevant though there may be some minor inaccuracy.</li> <li>• AO2 – Applies some knowledge and understanding appropriately. Connections and relationships between different aspects of study are emerging/evident with some relevance. Analysis and evaluation evident and supported with some appropriate evidence. A clear but partial argument is presented.</li> </ul>
1	1–3	<ul style="list-style-type: none"> <li>• AO1 – Demonstrates basic/limited knowledge and understanding of concepts, processes, interactions and change. These offer limited relevance with inaccuracy.</li> <li>• AO2 – Applies limited knowledge and understanding. Connections and relationships between different aspects of study are basic with limited relevance. Analysis and evaluation basic and supported with limited appropriate evidence. A basic argument is presented.</li> </ul>

**AO1**

- Case study of a country/society experiencing specific patterns of overall population change – increase or decline – to illustrate and analyse the character, scale and patterns of change, relevant environmental and socio-economic factors and implications for the country/society.

**AO2**

- There are several implications of population change, which are socio-economic and environmental.
- For example, in China, there is an ageing population which increases the dependency ratio, from 37 per cent in 2010 to 45 per cent in 2021.
- There is a decline in economic growth due to a shrinking workforce – it no longer has a large, cheap labour force to drive industrialisation and growth.
- There is a risk to social security as there is less money to put into pensions and healthcare.
- There is less environmental degradation due to a smaller population and a shift from the polluting industrial sector to cleaner technologies and service sector jobs.
- Evaluation of the extent to which the implications are socio-economic. Environmental implications should be considered as well.

Answers will vary according to the country/society studied. If no country or society is stated or inferred maximum level 1.

- 9 AO1 – Knowledge and understanding of the impact of environmental change on health.  
 AO2 – Application of knowledge and understanding to evaluate the extent to which there are increasing health concerns caused by environmental change.  
 AO1 = 4 AO2 = 5

Level	Marks	Description
3	7–9	<ul style="list-style-type: none"> <li>• AO1 – Demonstrates detailed knowledge and understanding of concepts, processes, interactions and change. These underpin the response throughout.</li> <li>• AO2 – Applies knowledge and understanding appropriately with detail. Connections and relationships between different aspects of study are fully developed with complete relevance. Analysis and evaluation is detailed and well supported with appropriate evidence. A well-balanced and coherent argument is presented.</li> </ul>

2	4–6	<ul style="list-style-type: none"> <li>• AO1 – Demonstrates some appropriate knowledge and understanding of concepts, processes, interactions and change. These are mostly relevant though there may be some minor inaccuracy.</li> <li>• AO2 – Applies some knowledge and understanding appropriately. Connections and relationships between different aspects of study are emerging/evident with some relevance. Analysis and evaluation evident and supported with some appropriate evidence. A clear but partial argument is presented.</li> </ul>
1	1–3	<ul style="list-style-type: none"> <li>• AO1 – Demonstrates basic/limited knowledge and understanding of concepts, processes, interactions and change. These offer limited relevance with inaccuracy.</li> <li>• AO2 – Applies limited knowledge and understanding. Connections and relationships between different aspects of study are basic with limited relevance. Analysis and evaluation basic and supported with limited appropriate evidence. A basic argument is presented.</li> </ul>

**AO1**

- Health impacts of global environmental change: ozone depletion – skin cancer, cataracts; climate change – thermal stress, emergent and changing distribution of vector-borne diseases, agricultural productivity, and nutritional standards.
- The relationship between environment variables, e.g. climate, topography (drainage) and incidence of disease. Air quality and health. Water quality and health.

**AO2**

- There are increasing health concerns caused by environmental change.
- The graph shows increasing rates of melanoma (skin cancer) in males and females between 1975 and 2020.
- Ozone depletion – the thinning of the ozone layer, caused by human-produced chlorofluorocarbons (CFCs), increasing the amount of UV radiation that reaches Earth.
- Skin cancer – UV radiation is a carcinogen that increases the risk of someone developing two types of skin cancer.
- Cataracts – exposure to UVB radiation increases the risk of cortical cataracts developing in the eyes.
- Thermal stress – rising temperatures may result in increased cases of heat stroke, exhaustion, cramps and rashes, which are greater in the elderly or those with comorbidities.

**10** AO1 – Knowledge and understanding of the role of international agencies and NGOs in promoting health and combating disease at the global scale.

AO2 – Application of knowledge and understanding to evaluate the role of international agencies and NGOs in promoting health and combating disease at the global scale.

AO1 = 4 AO2 = 5

Level	Marks	Description
3	7–9	<ul style="list-style-type: none"> <li>• AO1 – Demonstrates detailed knowledge and understanding of concepts, processes, interactions and change. These underpin the response throughout.</li> <li>• AO2 – Applies knowledge and understanding appropriately with detail. Connections and relationships between different aspects of study are fully developed with complete relevance. Analysis and evaluation is detailed and well supported with appropriate evidence. A well-balanced and coherent argument is presented.</li> </ul>

2	4–6	<ul style="list-style-type: none"> <li>• AO1 – Demonstrates some appropriate knowledge and understanding of concepts, processes, interactions and change. These are mostly relevant though there may be some minor inaccuracy.</li> <li>• AO2 – Applies some knowledge and understanding appropriately. Connections and relationships between different aspects of study are emerging/evident with some relevance. Analysis and evaluation evident and supported with some appropriate evidence. A clear but partial argument is presented.</li> </ul>
1	1–3	<ul style="list-style-type: none"> <li>• AO1 – Demonstrates basic/limited knowledge and understanding of concepts, processes, interactions and change. These offer limited relevance with inaccuracy.</li> <li>• AO2 – Applies limited knowledge and understanding. Connections and relationships between different aspects of study are basic with limited relevance. Analysis and evaluation basic and supported with limited appropriate evidence. A basic argument is presented.</li> </ul>

#### AO1

- Role of international agencies and NGOs in promoting health and combating disease at the global scale.
- Management and mitigation strategies of biologically transmitted disease and non-communicable disease.

#### AO2

- There are a range of organisations involved in promoting global health and combating disease.
- The World Health Organization’s goal is ‘to promote health, keep the world safe, and serve the vulnerable’ (WHO, 2018). They respond to global health emergencies, strengthen healthcare systems and research and monitor health situations. They are aiming to offer, by 2023, one billion more people universal health coverage, better protection from health emergencies and improved health and wellbeing.
- UNICEF is an agency of the UN responsible for children’s humanitarian aid. For global health they provide vaccines, assist with risk factors for disease, e.g. sanitation, and provide emergency healthcare aid. It focuses on supporting local healthcare services to reduce deaths from childhood diseases and maternal mortality.
- Médecins Sans Frontières (MSF) is an NGO which provides emergency medical aid to countries suffering from conflict, natural hazards and epidemics. Doctors and healthcare staff provide medical care in conflict zones, vaccinations in outbreaks and medical assistance for refugees.
- For example, malaria – the WHO’s Global Malaria Programme coordinates the efforts to eliminate malaria, monitors national programmes, and sets the standards for malaria mitigation.
- Sustainable Development Goal 3.3 aims to end epidemics of malaria by 2030.
- The USA’s President’s Malaria Initiative aims to reduce malaria deaths by 50 per cent in 15 African countries through supporting indoor residual spraying, distributing mosquito nets, strengthening healthcare systems and educating for behaviour change.
- Cancer – the WHO’s Global action plan aims to promote national cancer plans and set standards for early diagnosis, treatment and monitoring.
- Evaluation of the role of international agencies and NGOs is important in promoting health as organisations like the WHO set the global standard for responses to health issues and respond to health emergencies.
- NGOs have an important role as they can work on the ground, with bottom-up, local approaches to meet the needs of smaller communities.
- Both types of organisations work at different scales to effectively promote health and combat disease.
- National governments are also very important in promoting health and combating disease as they have the responsibility and authority to make changes within their country and protect their citizens.

- Many organisations working together have the most effective role in promoting health and combating disease.

**11** AO1 – Knowledge and understanding of future population–environment relationship.

AO2 – Application of knowledge and understanding to evaluate the extent to which the future population–environment relationship can be predicted.

AO1 = 4 AO2 = 5

Level	Marks	Description
3	7–9	<ul style="list-style-type: none"> <li>• AO1 – Demonstrates detailed knowledge and understanding of concepts, processes, interactions and change. These underpin the response throughout.</li> <li>• AO2 – Applies knowledge and understanding appropriately with detail. Connections and relationships between different aspects of study are fully developed with complete relevance. Analysis and evaluation is detailed and well supported with appropriate evidence. A well-balanced and coherent argument is presented.</li> </ul>
2	4–6	<ul style="list-style-type: none"> <li>• AO1 – Demonstrates some appropriate knowledge and understanding of concepts, processes, interactions and change. These are mostly relevant though there may be some minor inaccuracy.</li> <li>• AO2 – Applies some knowledge and understanding appropriately. Connections and relationships between different aspects of study are emerging/evident with some relevance. Analysis and evaluation evident and supported with some appropriate evidence. A clear but partial argument is presented.</li> </ul>
1	1–3	<ul style="list-style-type: none"> <li>• AO1 – Demonstrates basic/limited knowledge and understanding of concepts, processes, interactions and change. These offer limited relevance with inaccuracy.</li> <li>• AO2 – Applies limited knowledge and understanding. Connections and relationships between different aspects of study are basic with limited relevance. Analysis and evaluation basic and supported with limited appropriate evidence. A basic argument is presented.</li> </ul>

AO1

- Prospects for the global population.
- Projected distributions.
- Critical appraisal of future population–environment relationships.

AO2

- There are different estimations for future population growth. In 2022, the UN estimated that the population will rise to over 10 billion by 2059. There are different scenarios to make projections for future growth based on different fertility and migration levels.
- Governmental policies to slow or increase population growth will affect population size, or encouraging or discouraging migration will affect population distribution.
- Global responses to climate change are uncertain, e.g. international agreements and carbon emission policies.
- There may be innovation and developments in agriculture and resource use (Boserup’s view).
- The speed of economic and social development of low-income countries will vary, along with the associated impact on fertility rates.
- Societal values around resource consumption and habitat conservation may change.

- The future of population-environmental relationships is uncertain because they depend upon a number of factors which are difficult to predict.
- Past trends can be analysed, and a number of different futures can be predicted, which different degrees of certainty.

**12** AO1 – Knowledge and understanding of environmental variables in determining incidence of disease.  
 AO2 – Application of knowledge and understanding to assess the relative importance of environmental variables in determining incidence of disease.  
 AO1 = 10 AO2 = 10

Level	Marks	Description
4	16–20	<ul style="list-style-type: none"> <li>• AO2 – Detailed evaluative conclusion that is rational and firmly based on knowledge and understanding which is applied to the context of the question. Interpretations are comprehensive, sound and coherent.</li> <li>• AO2 – Detailed, coherent and relevant analysis and evaluation in the application of knowledge and understanding throughout.</li> <li>• AO2 – Full evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts.</li> <li>• AO1 – Detailed, highly relevant and appropriate knowledge and understanding of place(s) and environments used throughout.</li> <li>• AO1 – Full and accurate knowledge and understanding of key concepts and processes throughout.</li> <li>• AO1 – Detailed awareness of scale and temporal change which is well integrated where appropriate.</li> </ul>
3	11–15	<ul style="list-style-type: none"> <li>• AO2 – Clear evaluative conclusion that is based on knowledge and understanding which is applied to the context of the question.</li> <li>• AO2 – Generally clear, coherent and relevant analysis and evaluation in the application of knowledge and understanding.</li> <li>• AO2 – Generally clear evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts.</li> <li>• AO1 – Generally clear and relevant knowledge and understanding of place(s) and environments.</li> <li>• AO1 – Generally clear and accurate knowledge and understanding of key concepts and processes.</li> <li>• AO1 – Generally clear awareness of scale and temporal change which is integrated where appropriate.</li> </ul>
2	6–10	<ul style="list-style-type: none"> <li>• AO2 – Some sense of an evaluative conclusion partially based upon knowledge and understanding which is applied to the context of the question.</li> <li>• AO2 – Some partially relevant analysis and evaluation in the application of knowledge and understanding.</li> <li>• AO2 – Some evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts.</li> <li>• AO1 – Some relevant knowledge and understanding of place(s) and environments which is partially relevant.</li> <li>• AO1 – Some knowledge and understanding of key concepts, processes and interactions and change. There may be a few inaccuracies.</li> <li>• AO1 – Some awareness of scale and temporal change which is sometimes integrated where appropriate. There may be a few inaccuracies.</li> </ul>



1	1–5	<ul style="list-style-type: none"> <li>• AO2 – Very limited and/or unsupported evaluative conclusion that is loosely based upon knowledge and understanding which is applied to the context of the question. Interpretation is basic.</li> <li>• AO2 – Very limited analysis and evaluation in the application of knowledge and understanding. This lacks clarity and coherence.</li> <li>• AO2 – Very limited and rarely logical evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts.</li> <li>• AO1 – Very limited relevant knowledge and understanding of place(s) and environments.</li> <li>• AO1 – Isolated knowledge and understanding of key concepts, processes and interactions and change.</li> <li>• AO1 – Very limited awareness of scale and temporal change which is rarely integrated where appropriate. There may be a number of inaccuracies.</li> </ul>
0	0	<ul style="list-style-type: none"> <li>• Nothing worthy of credit.</li> </ul>

AO1

- Global patterns of health, mortality and morbidity. Economic and social development and the epidemiological transition.
- The relationship between environmental variables, e.g. climate, topography (drainage) and incidence of disease. Air quality and health. Water quality and health.
- The global prevalence, distribution, seasonal incidence of one specified biologically transmitted disease, e.g. malaria; its links to physical and socio-economic environments including impacts of environmental variables on transmission vectors.
- The global prevalence and distribution of one specified non-communicable disease, e.g. a specific type of cancer, coronary heart disease, asthma; its links to physical and socio-economic environment including impacts of lifestyles.

AO2

- Environmental variables (climatic factors and topographical factors) are important in determining incidence of disease.
- Many disease vectors, e.g. mosquitos or parasitic worms, thrive in specific climatic conditions – warm temperatures and abundant rainfall. Mosquitoes are a disease vector that spread diseases such as malaria, dengue fever and Zika virus.
- Heavy rainfall creates stagnant pools of water, which provide habitats and breeding grounds for vectors.
- Areas of the world with a warm and wet climate, e.g. between the Tropics, will have a higher incidence of these diseases spread by vectors such as malaria and bilharzias. Transmission of malaria peaks during and shortly after rainy seasons.
- An increase in the average daily sunshine hours increases exposure to ultraviolet light and can cause skin cancer.
- A lack of sun exposure can lead to a deficiency in vitamin D and can cause rickets.
- Depletion of the ozone layer increases the amount of UV radiation reaching the Earth which can lead to an increased risk of skin cancer and cataracts.
- Topographical factors (the natural features of the land, e.g. drainage and relief) link with climatic factors.
- In areas of good drainage, stagnant pools are less likely to accumulate.
- At higher altitudes, temperatures drop, so don't provide a suitable habitat for disease vectors.
- Global patterns of health are affected by a number of different factors, such as the wealth of the country, the availability of high-quality healthcare, the climate and air and water quality.

- There are also economic variables/factors that determine the incidence of disease. In high income countries, deaths from communicable diseases, e.g. cholera are lower due to high quality healthcare.
- Increased life expectancies due to socio-economic development results in causes of death mainly from non-communicable diseases, e.g. cancer and dementia.
- Air pollution and water pollution are important risk factors in mortality and morbidity worldwide. Human activity can lead to pollutants in the air and water, which can lead to a decrease in air and water quality and an increased incidence of some diseases.
- The importance of environmental variables for incidence of disease will vary depending on the country being discussed, the type of disease (biologically transmitted or non-communicable), and the level of development of the country.
- It could be said that the level of development of the country is the most important factor as this underpins the ability of countries to deal with and combat any type of disease.

*Example answer: Environmental variables, meaning climatic and topographical factors, are important in determining incidence of disease. Many disease vectors, such as mosquitos and parasitic worms, thrive in specific climatic conditions – warm temperatures and abundant rainfall. Mosquitoes are a disease vector that spread diseases such as malaria, dengue fever and Zika virus. Areas of the world with a warm and wet climate, such as between the Tropics, with many stagnant pools of water, provide ideal habitats and breeding grounds for vectors, which spread diseases such as malaria and bilharzias. Transmission of malaria peaks during and shortly after rainy seasons.*

*An increase in the average daily sunshine hours increases exposure to ultraviolet light and can cause skin cancer. Conversely, a lack of sun exposure can lead to a deficiency in vitamin D and can cause rickets. Depletion of the ozone layer increases the amount of UV radiation that reaches the Earth's surface, leading to an increased risk of skin cancer and cataracts.*

*Topographical factors (the natural features of the land, e.g. drainage and relief) link with climatic factors to determine the incidence of disease. In areas of good drainage, stagnant pools are less likely to accumulate, and at higher altitudes, temperatures drop, so don't provide a suitable habitat for disease vectors.*

*Global patterns of health are affected by a number of different factors, such as the wealth of the country, the availability of high-quality healthcare, the climate, and air and water quality.*

*There are also economic variables/factors that determine the incidence of disease. In high-income countries, deaths from communicable diseases are lower due to high quality healthcare. Increased life expectancies due to socio-economic development means that causes of death are mainly from non-communicable diseases, e.g. cancer and dementia.*

*Air pollution and water pollution are important risk factors in mortality and morbidity worldwide. Human activity can lead to pollutants in the air and water, which can lead to a decrease in air and water quality and an increased incidence of some diseases.*

*The importance of environmental variables for incidence of disease will vary depending on the country being discussed, the type of disease (biologically transmitted or non-communicable), and the level of development of the country. It could be said that the level of development of the country is the most important factor as this underpins the ability of countries to deal with and combat any type of disease.*

**13** AO1 – Knowledge and understanding of the implications of migration.

AO2 – Application of knowledge and understanding to assess the extent to which the implications of migration are mainly economic.

AO1 = 10 AO2= 10

Level	Marks	Description
4	16–20	<ul style="list-style-type: none"> <li>• AO2 – Detailed evaluative conclusion that is rational and firmly based on knowledge and understanding which is applied to the context of the question. Interpretations are comprehensive, sound and coherent.</li> <li>• AO2 – Detailed, coherent and relevant analysis and evaluation in the application of knowledge and understanding throughout.</li> <li>• AO2 – Full evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts.</li> <li>• AO1 – Detailed, highly relevant and appropriate knowledge and understanding of place(s) and environments used throughout.</li> <li>• AO1 – Full and accurate knowledge and understanding of key concepts and processes throughout.</li> <li>• AO1 – Detailed awareness of scale and temporal change which is well integrated where appropriate.</li> </ul>
3	11–15	<ul style="list-style-type: none"> <li>• AO2 – Clear evaluative conclusion that is based on knowledge and understanding which is applied to the context of the question.</li> <li>• AO2 – Generally clear, coherent and relevant analysis and evaluation in the application of knowledge and understanding.</li> <li>• AO2 – Generally clear evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts.</li> <li>• AO1 – Generally clear and relevant knowledge and understanding of place(s) and environments.</li> <li>• AO1 – Generally clear and accurate knowledge and understanding of key concepts and processes.</li> <li>• AO1 – Generally clear awareness of scale and temporal change which is integrated where appropriate.</li> </ul>
2	6–10	<ul style="list-style-type: none"> <li>• AO2 – Some sense of an evaluative conclusion partially based upon knowledge and understanding which is applied to the context of the question.</li> <li>• AO2 – Some partially relevant analysis and evaluation in the application of knowledge and understanding.</li> <li>• AO2 – Some evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts.</li> <li>• AO1 – Some relevant knowledge and understanding of place(s) and environments which is partially relevant.</li> <li>• AO1 – Some knowledge and understanding of key concepts, processes and interactions and change. There may be a few inaccuracies.</li> <li>• AO1 – Some awareness of scale and temporal change which is sometimes integrated where appropriate. There may be a few inaccuracies.</li> </ul>
1	1–5	<ul style="list-style-type: none"> <li>• AO2 – Very limited and/or unsupported evaluative conclusion that is loosely based upon knowledge and understanding which is applied to the context of the question. Interpretation is basic.</li> <li>• AO2 – Very limited analysis and evaluation in the application of knowledge and understanding. This lacks clarity and coherence.</li> </ul>

		<ul style="list-style-type: none"> <li>• AO2 – Very limited and rarely logical evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts.</li> <li>• AO1 – Very limited relevant knowledge and understanding of place(s) and environments.</li> <li>• AO1 – Isolated knowledge and understanding of key concepts, processes and interactions and change.</li> <li>• AO1 – Very limited awareness of scale and temporal change which is rarely integrated where appropriate. There may be a number of inaccuracies.</li> </ul>
0	0	<ul style="list-style-type: none"> <li>• Nothing worthy of credit.</li> </ul>

#### AO1

- Agricultural systems and agricultural productivity. Relationship with key physical environmental variables – climate and soils.
- Characteristics and distribution of two key zonal soils to exemplify relationship between soils and human activities especially agriculture. Soil problems and their management as they relate to agriculture: soil erosion, waterlogging, salinisation, structural deterioration.

#### AO2

- Agricultural productivity is affected by a number of physical and human factors.
- Physical factors include: temperature, precipitation and water supply, altitude, gradient, which affects soil characteristics and the use of machinery, aspect, soil depth and soil type – water-retention capacity, structure, pH, leaching, and mineral content.
- Human factors include land ownership, farm size, transport to markets, government subsidies, and technology.
- Climate change is a key issue facing agriculture.
- Water-intensive crops, such as rice, sugar, cotton and wheat, may be impacted by unpredictable variations in precipitation that could threaten their cultivation.
- Warmer temperatures may increase the length of growing seasons, e.g. in the UK.
- Extreme weather events, such as heatwaves and drought, may lead to crop failure and heat stress in livestock.
- More intense storms may lead to crop destruction in areas that experience tropical cyclones.
- Current rainfall patterns are expected to change, and warmer climates may see diseases and pests in new areas.
- Soil problems includes soil erosion, waterlogging, salination and structural deterioration.
- Soil erosion – Top layers of soil are eroded by wind, intensive farming, deforestation, overcropping or prolonged and heavy rainfall. The rate of erosion is determined by climate, topography, soil type and vegetation cover.
- Waterlogging – Over-irrigation, heavy rainfall and low evaporation, where surplus water is not sufficiently drained away, can lead to waterlogged soil where roots suffer from a lack of oxygen.
- Salination – Waterlogged soil can increase the water table and bring dissolved salts into the topsoil affecting the roots of salt-intolerant plants.
- Structural deterioration – Compaction of soil particles leads to less drainage and waterlogging.

Credit any other valid approach. Evaluation should be based upon preceding content.

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