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INTERNATIONAL  
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**INTERNATIONAL AS**

**GEOGRAPHY**

**GG02**

Paper 2 Human Geography 1

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Mark scheme

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Mark schemes are prepared by the Lead Assessment Writer and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all associates participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students' responses to questions and that every associate understands and applies it in the same correct way. As preparation for standardisation each associate analyses a number of students' scripts. Alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, associates encounter unusual answers which have not been raised they are required to refer these to the Lead Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

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# International AS Geography mark scheme

## How to mark

### Aims

When you are marking your allocation of scripts your main aims should be to:

- recognise and identify the achievements of students
- place students in the appropriate mark band and in the appropriate part of that mark band (high, low, middle) for **each** Assessment Objective
- record your judgements with brief notes, annotations and comments that are relevant to the mark scheme and make it clear to other examiners how you have arrived at the numerical mark awarded for each Assessment Objective
- ensure comparability of assessment for all students, regardless of question or examiner.

### Approach

It is important to be **open-minded** and **positive** when marking scripts.

The specification recognises the variety of experiences and knowledge that students will have. It encourages them to study geography in a way that is relevant to them. The questions have been designed to give them opportunities to discuss what they have found out about geography. It is important to assess the quality of **what the student offers**.

Do not mark scripts based on the answer **you** would have written. The mark schemes have been composed to assess **quality of response** and not to identify expected items of knowledge.

### Assessment Objectives

This component requires students to:

AO1	Demonstrate knowledge and understanding of places, environments, concepts, processes, interactions and change, at a variety of scales.
AO2	Apply knowledge and understanding in different contexts to interpret, analyse and evaluate geographical information and issues.
AO3	Use a variety of relevant quantitative, qualitative and fieldwork skills to: <ul style="list-style-type: none"> <li>• investigate geographical questions and issues</li> <li>• interpret, analyse and evaluate data and evidence</li> <li>• construct arguments and draw conclusions.</li> </ul>

### The marking grids

Do not think of levels equalling grade boundaries.

Depending on the part of the examination, the levels will have different mark ranges assigned to them. This will reflect the different weighting of Assessment Objectives in particular tasks and across the examination as a whole.

## Using the grids

Having familiarised yourself with the descriptors and indicative content, read through the answer and annotate it (as instructed below) to identify the qualities that are being looked for and that it shows. You can now check the levels and award a mark.

### Step 1 Determine a level

Start at the lowest level of the mark scheme and use it as a ladder to see whether the answer meets the descriptors for that level. The descriptors for the level indicate the different qualities that might be seen in the student's answer for that level. If it meets all the descriptors for the lowest level then go to the next one and decide if it meets this level, and so on, until you have a match between the level descriptors and the answer. With practice and familiarity you will find that for better answers you will be able to skip through the lower levels of the mark scheme quickly.

When assigning a level you should look at the overall quality of the answer and not look to pick holes in small and specific parts of the answer where the student has not performed quite as well as the rest. If the answer covers different aspects of different levels of the mark scheme you should use a best-fit approach for defining the level and then use the variability of the response to help decide the mark within the level.

### Step 2 Determine a mark

Once you have assigned a level you need to decide on the mark.

It is often best to start in the middle of the level's mark range and then check and adjust. If there is a lot of indicative content fully identifiable in the work you need to give the highest mark in the level. If only some is identifiable or it is only partially fulfilled, then give the lower mark.

The exemplar materials used during standardisation will also help. There will be an answer in the standardising materials that will correspond with each level of the mark scheme. This answer will have been awarded a mark by the lead examiner. You can compare the student's answer with the example to determine if it is of the same standard, better or worse than the example. You can then use this to allocate a mark for the answer based on the lead examiner's mark on the example.

You may well need to read back through the answer as you apply the mark scheme to clarify points and assure yourself that the level and the mark are appropriate.

In addition to the levels descriptors, question specific indicative content is provided as a guide for examiners. This is not intended to be exhaustive and you must credit other valid points.

An answer that contains nothing of relevance to the question must be awarded no marks.

## Annotating scripts

You should write a summative comment at the end for each Assessment Objective and indicate the marks for each Assessment Objective being tested at the end of the answer in the margin in sequence. It is vital that the way you arrive at a mark should be recorded on the script. This will help you with making accurate judgements and it will help any subsequent markers to identify how you are thinking. Please do not write negative comments about students' work or their alleged aptitudes.

**Section A – Global systems and governance**

**Total for this section: 20 marks**

Question	Part	Marking guidance	Total marks
01	1	<p><b>Which of the following is a negative environmental consequence of ocean governance?</b></p> <p>Key – A: Allowing oil drilling to take place on continental shelves.</p>	<p><b>1</b></p> <p><b>AO1=1</b></p>
01	2	<p><b>‘A rich country forcing a poorer country to pay more interest on a loan’ is an example of which of the following?</b></p> <p>Key – C: An unequal power relationship.</p>	<p><b>1</b></p> <p><b>AO1=1</b></p>
01	3	<p><b>Which of the following is a global marketing technique?</b></p> <p>Key – A: Advertising that features products and logos.</p>	<p><b>1</b></p> <p><b>AO1=1</b></p>
01	4	<p><b>What is UNCLOS?</b></p> <p>Key – C: An international agreement that provides laws and legal guidance for all marine activities.</p>	<p><b>1</b></p> <p><b>AO1=1</b></p>
01	5	<p><b>What are the ‘global commons’?</b></p> <p>Key – A: Areas outside the control of individual nations that all countries can access and use.</p>	<p><b>1</b></p> <p><b>AO1=1</b></p>

Question	Part	Marking guidance	Total marks
02		Analyse the data shown in FIGURE 1 and FIGURE 2.	6  AO3=6

Level	Marks	Descriptor
2	4–6	<b>AO3</b> – Clear selection and analysis of the evidence that has been provided which makes appropriate use of data to support. Clear connections between different aspects of the data.
1	1–3	<b>AO3</b> – Some basic selection and analysis of the evidence that has been provided which makes limited use of data to support. Basic or limited connections between different aspects of the data.
0	0	No creditable content.

### Indicative Content

This question requires analysis of two data maps, one showing the global distribution of rice production and one showing the global consumption of rice. Analysis could include comparison of the data and locations, both high and low amounts, as well as key differences and anomalies. There should be application of the data from the key, as well as use of locational examples.

### **AO3**

- South and East Asia stand out as having the highest amount of rice production, with India and China both having 100 or more MMT, a few having more than 20 MMT and most countries having at least some form of production. This links to high consumption, with a large number of countries in this region consuming more than 300 g/day per capita. But whilst India and China stand out as the largest producers, they are not the largest consumers in the region. Vietnam, for instance, consumes 300 or more g/day, compared to China’s 200-299 and India’s 100-199, but produce only half as much.
- Europe produces a limited amount of rice, with only a few countries, such as Spain and Portugal, producing up to 1 MMT. There is also low consumption here, with all countries consuming less than 50 g/day per capita. It suggests that countries like France and the UK do consume rice, even though they don’t produce it.
- South America produces less rice than Asia, but similarly to South and East Asia, most countries do produce some. Brazil, Peru and Argentina, for example, produce 1–9 MMT whereas Guyana and Bolivia produce 0.1–0.9 MMT. Consumption is less linked here though. For instance, consumption in Peru is more than in Brazil and more than double the amount in Argentina, despite producing the same amount.
- Africa is diverse in terms of production, with some countries, such as Nigeria and Madagascar producing over 1–9 MMT of rice and a number of countries producing 0.1–0.9 MMT, such as Chad and Cameroon. Most of northern and southern Africa produce none, Algeria and South Africa for instance. There is more of a direct link to consumption here, with all countries that produce rice consuming 50 g/day or more, and all countries that don’t produce rice consuming less than 50 g/day. Some high production countries such as Madagascar consume more than 200 g/day.

- The USA is an anomaly for production in North America, producing over 1–9 MMT of rice, but having a fairly low consumption of less than 50 g/day per capita. This is the same consumption as Canada and Mexico, whilst Canada produces none and Mexico produces 0.1–0.9 MMT.
- Saudi Arabia is an anomaly for consumption, as it produces no rice, but consumption is over 50 g/day per capita.
- Overall Asia is the only region with countries that produce more than 9 MMT, with some countries producing over 100 MMT. It is also the only region with consumption of 300 g/day, shown in multiple countries. Europe stands out as the region with the lowest production and consumption, with most countries producing none and no countries consuming more than 50 g/day.

Question	Part	Marking guidance	Total marks
03		<p><b>Evaluate the global impacts of world trade in AT LEAST ONE food commodity or product of manufacturing that you have studied.</b></p> <p><b>AO1</b> – Knowledge and understanding of world trade in at least one food commodity or one product of manufacturing. Knowledge and understanding of trading relationships and patterns. Knowledge and understanding of differential access to markets and its impacts on economic and societal well-being. Knowledge and understanding of the geographical consequences of global systems and its impacts on lives across the globe.</p> <p><b>AO2</b> – Application of knowledge and understanding to evaluate the global impacts of world trade in at least one food commodity or product of manufacturing studied. Application of knowledge and understanding to consider balance of impacts and form a judgement on overall impacts.</p>	<p><b>9</b></p> <p><b>AO1=4</b> <b>AO2=5</b></p>

Level	Marks	Descriptor
3	7–9	<p><b>AO1</b> – Demonstrates detailed knowledge and understanding of world trade in at least one food commodity or product of manufacturing and its global impacts.</p> <p><b>AO2</b> – Applies knowledge and understanding to the novel situation, offering detailed analysis and evaluation, drawn appropriately from the context provided. Connections and relationships between different aspects of study are thorough and relevant.</p>
2	4–6	<p><b>AO1</b> – Demonstrates clear knowledge and understanding of world trade in at least one food commodity or product of manufacturing and its global impacts.</p> <p><b>AO2</b> – Applies knowledge and understanding to the novel situation, offering clear analysis and evaluation, drawn appropriately from the context provided. Connections and relationships between different aspects of study are evident and relevant.</p>
1	1–3	<p><b>AO1</b> – Demonstrates basic knowledge and understanding of world trade in at least one food commodity or product of manufacturing and its global impacts.</p> <p><b>AO2</b> – Applies limited knowledge and understanding to the novel situation, offering some basic analysis and evaluation. Connections and relationships between different aspects of study are basic with limited relevance. Analysis and evaluation are basic and of limited relevance.</p>
0	0	No creditable content.

### Indicative Content

This question requires links to be made between different parts of the specification content on Global Systems and Governance. Specific focus needs to be on world trade in at least one food commodity or



one product of manufacturing with links to impacts that are covered within the international trade and access to markets section within the specification. Ideas could also be drawn in from other areas of the specification if relevant. There should be some application of detail from an applied example, as well as range and balance of impacts, with a possible overall summary of key impacts.

### AO1

- Knowledge and understanding of world trade in at least one food commodity or one product of manufacturing.
- Knowledge and understanding of trading relationships and patterns.
- Knowledge and understanding of differential access to markets and its impacts on economic and societal well-being.
- Knowledge and understanding of the geographical consequences of global systems and its impacts on lives across the globe.
- Knowledge and understanding from other areas of the specification if accurate and relevant to the question.

### AO2

- Evaluation of the positive global impacts of world trade in at least one food commodity or one product of manufacturing. Eg Coca-Cola have encouraged female empowerment within the work place globally, with a target for 5 million employed by 2020. They have also used their global marketing network to raise awareness of plastic waste and recycling. The banana trade is the world's most popular fruit with over \$10 billion spent on them globally. This creates economic links to tropical countries that rely on their growth and export for economic development. They have also been one of the key commodities linked to the Fairtrade network which has helped to develop social, economic and environmental standards for growers and communities, especially with the development of the Fairtrade premium which is invested into the community as part of sustainable development.
- Evaluation of the negative global impacts of world trade in at least one food commodity or one product of manufacturing. Eg Coca-Cola have been linked to over-extraction of water in a number of countries, especially in parts of India where this then led to polluted water sources. They have also been linked to exploitation of workers, with low pay and long hours expected in bottling plants in poorer countries. The banana trade wars between the EU and Central American banana exporters that started in 2006 created economic issues for the poorer exporting countries, with a number of growers going out of business, which later led to environmental and societal issues within the countries too. There were also political ramifications with the WTO needing to investigate and a resulting dispute between the EU and WTO.
- Evaluation of the overall global impacts of world trade in at least one food commodity or one product of manufacturing. Eg Coca-Cola provides a product that is sought after globally and have used their profits and networks to help improve equality and awareness of some environmental issues, however their exploitation of workers and water resource issues creates more of a negative impact in poorer countries. On the whole banana production has seen many benefits to global nutrition and development of poorer exporting countries, especially with the growth of the Fairtrade network. Whilst there have been some issues with trade agreements and networks the overall global impact has seemed more positive.

Question	Part	Marking guidance	Total marks
04		<p><b>‘Globalisation is more likely to create stability than cause conflict.’ To what extent do you agree with this statement?</b></p> <p><b>Refer to places and examples that you have studied to support your answer.</b></p> <p><b>AO1</b> – Knowledge and understanding of the globalisation critique. Knowledge and understanding of global systems and their impacts. Knowledge and understanding of international trade and access to markets, especially the range of impacts linked to these. Knowledge and understanding of global governance and its consequences.</p> <p><b>AO2</b> – Application of knowledge and understanding to critically evaluate the extent to which globalisation creates more benefits than costs. Application of knowledge and understanding to draw conclusions on this issue.</p>	<p><b>20</b></p> <p><b>AO1=10</b> <b>AO2=10</b></p>

Level	Marks	Descriptor
4	16–20	<p><b>AO2</b> – Detailed evaluative conclusion that is rational and firmly based on knowledge and understanding which is applied to the context of the question.</p> <p><b>AO2</b> – Detailed, coherent and relevant analysis and evaluation in the application of knowledge and understanding throughout.</p> <p><b>AO2</b> – Full evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts.</p> <p><b>AO1</b> – Detailed, highly relevant and appropriate knowledge and understanding of place(s) and environments used throughout.</p> <p><b>AO1</b> – Full and accurate knowledge and understanding of key concepts and processes throughout.</p> <p><b>AO1</b> – Detailed awareness of scale and temporal change which is well integrated where appropriate.</p>
3	11–15	<p><b>AO2</b> – Clear evaluative conclusion that is based on knowledge and understanding which is applied to the context of the question.</p> <p><b>AO2</b> – Generally clear, coherent and relevant analysis and evaluation in the application of knowledge and understanding.</p> <p><b>AO2</b> – Generally clear evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts.</p> <p><b>AO1</b> – Generally clear and relevant knowledge and understanding of place(s) and environments.</p>

		<p><b>AO1</b> – Generally clear and accurate knowledge and understanding of key concepts and processes.</p> <p><b>AO1</b> – Generally clear awareness of scale and temporal change which is integrated where appropriate.</p>
<b>2</b>	<b>6–10</b>	<p><b>AO2</b> – Some sense of an evaluative conclusion partially based upon knowledge and understanding which is applied to the context of the question.</p> <p><b>AO2</b> – Some partially relevant analysis and evaluation in the application of knowledge and understanding.</p> <p><b>AO2</b> – Some evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts.</p> <p><b>AO1</b> – Some relevant knowledge and understanding of place(s) and environments which is partially relevant.</p> <p><b>AO1</b> – Some knowledge and understanding of key concepts, processes and interactions and change.</p> <p><b>AO1</b> – Some awareness of scale and temporal change which is sometimes integrated where appropriate. There may be a few inaccuracies.</p>
<b>1</b>	<b>1–5</b>	<p><b>AO2</b> – Very limited and/or unsupported evaluative conclusion that is loosely based upon knowledge and understanding which is applied to the context of the question.</p> <p><b>AO2</b> – Very limited analysis and evaluation in the application of knowledge and understanding. This lacks clarity and coherence.</p> <p><b>AO2</b> – Very limited and rarely logical evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts.</p> <p><b>AO1</b> – Very limited relevant knowledge and understanding of place(s) and environments.</p> <p><b>AO1</b> – Isolated knowledge and understanding of key concepts and processes.</p> <p><b>AO1</b> – Very limited awareness of scale and temporal change which is rarely integrated where appropriate. There may be a number of inaccuracies.</p>
<b>0</b>	<b>0</b>	No creditable content.

Indicative Content

The question links different parts of the Global Systems and Governance part of the specification. The main focus is the globalisation critique section, but this draws in impacts from most other sections of the topic, so candidates will need to be selective in their focus and examples. The question requires candidates to make a judgement of the extent to which they agree to the statement ‘Globalisation is more likely to create stability than cause conflict’. Answers need to focus on the overall extent and form this judgement through supporting places and examples. There may be balance of stability and conflict

examples before forming this overall judgement of extent. Answers will be limited to a maximum of level 3 if there is reference to only stability **or** conflict.

### AO1

- Knowledge and understanding of the globalisation critique.
- Knowledge and understanding of global systems and their impacts.
- Knowledge and understanding of international trade and access to markets, especially the range of impacts linked to these.
- Knowledge and understanding of global governance and its consequences.
- Knowledge and understanding from other areas of the specification if accurate and relevant to the question.

### AO2

- Evaluation of the ways that globalisation can create stability. Eg, globalisation has helped to reduce poverty and income inequality on the global scale, through processes such as the Millennium Development Goals and some trade bloc development, although it has also increased the development of the super-rich too. The development of global trade through organisations such as the World Trade Organisation, as well as Foreign Direct Investment through Transnational Corporations and international trade, has allowed a number of countries to develop become more stable. China, for instance, did this through the Open Door Policy and better links within the ASEAN trade bloc, then the world. Global organisations such as IMF can support countries with financial issues in a more effective way through globalisation, and environmental organisations can be more effective in raising awareness and helping develop global responses to key issues such as global warming. Social media and communication have also led to better understanding of global cultures and promoted the growth of beneficial networks, such as Fairtrade, Transition Towns and the Paralympic movement.
- Evaluation of the ways that globalisation can cause conflict. Eg instability and conflict has been linked to the Arab Spring uprisings in Africa and the Middle East which developed as people mobilised protests through Twitter and other social media platforms. The cause of the unrest in many issues was also partly linked to issues with global supply chains, especially with access to food and water. There has also been unrest in poorer countries linked to both exploitation of people and the environment from Transnational Corporations. Global boycotts developed in response to Nike's treatment of workers in sweatshops in South-East Asia, in particular Indonesia. There were also protests by workers. Oil exploitation by Shell and other countries in Nigeria has led to protests and unrest, with some links to the development of extremist groups within the country to counter the development of globalisation and government corruption linked to it. There has also been a growing awareness of the issue of cultural erosion due to the spread of global culture, with a number of locations having issues with this and putting responses in place to limit this conflict of interest. For example l'Exception Culturelle was developed in France to help protect the French language and cultural representation in media, with limits imposed on the showing and playing of international media within the country.
- Judgement of the overall extent to which globalisation is more likely to create stability than cause conflict. Eg, on the whole, globalisation has led to better global links, understanding and equality through a range of global networks and developments of global infrastructure. There have been some specific examples that contradict this overall trend, but these have been more specific than widespread, so on the whole I would say to a fairly high extent that globalisation is more likely to create stability than cause conflict.

**Section B – Resource security**

**Total for this section: 20 marks**

Question	Part	Marking guidance	Total marks
05	1	<p><b>Which of the following are BOTH physical geography factors that can affect energy supply?</b></p> <p>Key – D: Underlying geology of the area <b>and</b> wind speed.</p>	<p><b>1</b></p> <p><b>AO1=1</b></p>
05	2	<p><b>Which of the following is an example of water diversion?</b></p> <p>Key – B: Creating a canal to take water from a river to a field.</p>	<p><b>1</b></p> <p><b>AO1=1</b></p>
05	3	<p><b>Which of the following is a strategy used to reduce energy consumption?</b></p> <p>Key – B: Improving energy efficiency in homes and buildings.</p>	<p><b>1</b></p> <p><b>AO1=1</b></p>
05	4	<p><b>‘A resource that is exploited whilst minimising social, economic, environmental and political impacts.’ This defines which of the following?</b></p> <p>Key – D: Sustainable resource development.</p>	<p><b>1</b></p> <p><b>AO1=1</b></p>
05	5	<p><b>Which of the following is a positive impact of energy resource development on the physical environment?</b></p> <p>Key – D: Renewable energy reducing greenhouse gas emissions.</p>	<p><b>1</b></p> <p><b>AO1=1</b></p>

Question	Part	Marking guidance	Total marks
06		Analyse the data shown in FIGURE 3.	6 AO3=6

Level	Marks	Descriptor
2	4–6	<b>AO3</b> – Clear selection and analysis of the evidence that has been provided which makes appropriate use of data to support. Clear connections between different aspects of the data.
1	1–3	<b>AO3</b> – Some basic selection and analysis of the evidence that has been provided which makes limited use of data to support. Basic or limited connections between different aspects of the data.
0	0	No creditable content.

### Indicative Content

This question requires analysis of a normal-log correlation between GDP per capita and Integrated Water Resource Management for a range of countries. Some countries are labelled onto the graph. Answers should refer to the overall correlation and key trends, as well as some specific anomalies and examples. There should be specific reference to source data and an awareness of the logarithmic nature of the GDP axis.

### **AO3**

- The overall correlation is a weak positive one, showing that in general as GDP per capita increases so does the % IWRM, although there is a wide spread of data. However, as the GDP is on a logarithmic scale it may show more of a direct correlation than in reality as the axis is not as stretched out.
- The range of % IWRM goes from 10% at just under \$500 GDP per capita (Afghanistan) to 100% with two countries, the highest at \$60 000 GDP per capita (Singapore).
- There are no countries in the ‘Very low’ IWRM category, but 10 countries within the ‘Very high’ category. They all have at least \$10 000 GDP per capita. Medium-low IWRM is the category with most countries.
- The range of GDP per capita goes from just over \$200 at 39% IWRM to over \$100 000 with the highest being at 90% IWRM.
- Out of all of the countries below \$1000 GDP per capita the range of % IWRM varies mostly between 10 and 60%, with most clustering around 35%. Eritrea stands out as a key anomaly having a GDP per capita of around \$500 and 72% IWRM.
- For the countries between \$1000 and \$10 000 GDP per capita the range of % IWRM varies mostly between 15 and 70%, with most clustering around 45%. Cuba is an obvious anomaly with a GDP per capita of \$8000 and 80% IWRM.
- For the countries between \$10 000 and \$100 000 GDP per capita the range of % IWRM varies mostly between 25 and 90%. This has the widest spread of the income categories and less clustering, even though there does not appear to be more countries than in the \$1000 to \$10 000 GDP per capita bracket. Chile stands out as an anomaly at the lower end, with only 23% IWRM, lower than any other country with more than \$10 000 GDP per capita.

- There are only three countries above \$100 000 GDP per capita. Two have 90% IWRM and the other is more of an anomaly at only 70%.
- An example in the centre of the overall trend is Brazil, with a GDP per capita of \$10 000 and 50% IWRM. In comparison Italy has 55% IWRM, but with a higher GDP per capita of £30 000. India also has 55% IWRM, but with a much lower GDP per capita of \$2000 GDP per capita.

Question	Part	Marking guidance	Total marks
07		<p><b>‘Geopolitics is the most important factor influencing energy resource distribution.’</b></p> <p><b>To what extent do you agree with this statement?</b></p> <p><b>AO1</b> – Knowledge and understanding of global patterns of production, consumption and trade/movements of energy. Knowledge and understanding of the geopolitics of energy resource distributions, trade and management. Knowledge and understanding of energy supplies in a globalising world.</p> <p><b>AO2</b> – Application of knowledge and understanding to assess the extent to which geopolitics is the most important factor influencing energy resource distribution. Application of knowledge and understanding to form an overall extent.</p>	<p><b>9</b></p> <p><b>AO1=4</b> <b>AO2=5</b></p>

Level	Marks	Descriptor
3	7–9	<p><b>AO1</b> – Demonstrates detailed knowledge and understanding of geopolitics and other factors that can influence energy distribution.</p> <p><b>AO2</b> – Applies knowledge and understanding to the novel situation, offering detailed analysis and evaluation, drawn appropriately from the context provided. Connections and relationships between different aspects of study are thorough and relevant.</p>
2	4–6	<p><b>AO1</b> – Demonstrates clear knowledge and understanding of geopolitics and other factors that can influence energy distribution.</p> <p><b>AO2</b> – Applies knowledge and understanding to the novel situation, offering clear analysis and evaluation, drawn appropriately from the context provided. Connections and relationships between different aspects of study are evident and relevant.</p>
1	1–3	<p><b>AO1</b> – Demonstrates basic knowledge and understanding of geopolitics and other factors that can influence energy distribution.</p> <p><b>AO2</b> – Applies limited knowledge and understanding to the novel situation, offering some basic analysis and evaluation. Connections and relationships between different aspects of study are basic with limited relevance. Analysis and evaluation are basic and of limited relevance.</p>
0	0	No creditable content.

### Indicative Content

This question requires links to be made between different parts of the specification content on Resource Security, specifically the natural resource issues section, although there are some possible links to the energy security section too. Knowledge and understanding must be applied to make a judgement on the extent to which geopolitics is the most important factor influencing energy distribution. This should be



based on appropriate examples and explanation, with comparison to other relevant factors too. An overall extent should be clearly made and justified in relation to the original statement.

### **AO1**

- Knowledge and understanding of global patterns of production, consumption and trade/movements of energy.
- Knowledge and understanding of the geopolitics of energy resource distributions, trade and management.
- Knowledge and understanding of energy supplies in a globalising world.
- Knowledge and understanding from other areas of the specification if accurate and relevant to the question.

### **AO2**

- Assessment of geopolitics a key factor influencing energy distribution. Eg Russia – through gas resources, infrastructure development and companies such as Gazprom – has had full control over distribution to parts of Europe, leading to price issues, influence on policies within other countries and cutting off supplies to some other countries, notably Ukraine in 2014. Saudi Arabia has had issues with targeted bombing of energy infrastructure linked to their involvement in the war in Yemen. In 2019 a missile drone strike destroyed a Saudi Arabian oil-processing facility which halted 5% of global oil production and therefore its distribution. OPEC is another key example which controls the majority of global oil production and supply. Price issues have caused issues, notably the 1973 crisis, but since then the countries have worked together to try and make prices more equitable and limit global impacts for the benefit of the supply chain.
- Assessment of other factors that influence energy distribution. Eg geology is a huge factor in determining whether a country has fossil fuel energy access or not and can therefore distribute it to other locations and countries, such as Australia's ongoing mining and distribution of coal resources and limited focus on renewable development due to this. Environmental and climatic factors also play a part, with extreme climates making access and distribution difficult, although not impossible as the trans-Alaskan pipeline and distribution networks show. With renewable energy this climatic factor is also key, as countries in northern Europe show, with the sharing of offshore wind networks and the aim to develop solar electricity networks from northern Africa, as the sunlight is too limited in northern Europe. Technological factors are also key, limited by both development and cost. Renewable energy network development, for instance, has been limited by lack of effective batteries for storage of energy in off peak times. Until better battery technology is developed renewables will not be able to match base load power in most locations.
- An overall extent to which geopolitics as the most important factor influencing energy distribution. Eg there are a wide range of factors that influence energy distribution in different areas and locations. Geopolitics can play a significant and extreme impact to a very high extent in some examples, such as the Russia supply to Europe, although in other locations and globally it is a lower extent as most countries want to work together to ensure energy security and equity.

Question	Part	Marking guidance	Total marks
08		<p><b>Evaluate the importance of technological and political developments in alternative water futures.</b></p> <p><b>AO1</b> – Knowledge and understanding of alternative water futures and their relationship with a range of technological, economic, environmental and political developments. Knowledge and understanding of strategies to manage water consumption. Knowledge and understanding of sustainability issues associated with water management. Knowledge and understanding of water conflicts at a variety of scales. Knowledge and understanding of the geopolitics of energy resource distribution, trade and management. Knowledge and understanding of sustainable resource development.</p> <p><b>AO2</b> – Application of knowledge and understanding to evaluate the importance of technological and political developments in alternative water futures. Application of knowledge and understanding to form a judgement on the most important factors overall.</p>	<p><b>20</b></p> <p><b>AO1=10</b> <b>AO2=10</b></p>

Level	Marks	Descriptor
4	16–20	<p><b>AO2</b> – Detailed evaluative conclusion that is rational and firmly based on knowledge and understanding which is applied to the context of the question</p> <p><b>AO2</b> – Detailed, coherent and relevant analysis and evaluation in the application of knowledge and understanding throughout</p> <p><b>AO2</b> – Full evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts</p> <p><b>AO1</b> – Detailed, highly relevant and appropriate knowledge and understanding of place(s) and environments used throughout</p> <p><b>AO1</b> – Full and accurate knowledge and understanding of key concepts and processes throughout</p> <p><b>AO1</b> – Detailed awareness of scale and temporal change which is well integrated where appropriate</p>
3	11–15	<p><b>AO2</b> – Clear evaluative conclusion that is based on knowledge and understanding which is applied to the context of the question</p> <p><b>AO2</b> – Generally clear, coherent and relevant analysis and evaluation in the application of knowledge and understanding</p> <p><b>AO2</b> – Generally clear evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts</p> <p><b>AO1</b> – Generally clear and relevant knowledge and understanding of place(s) and environments</p>

		<p><b>AO1</b> – Generally clear and accurate knowledge and understanding of key concepts and processes</p> <p><b>AO1</b> – Generally clear awareness of scale and temporal change which is integrated where appropriate</p>
<b>2</b>	<b>6–10</b>	<p><b>AO2</b> – Some sense of an evaluative conclusion partially based upon knowledge and understanding which is applied to the context of the question</p> <p><b>AO2</b> – Some partially relevant analysis and evaluation in the application of knowledge and understanding</p> <p><b>AO2</b> – Some evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts</p> <p><b>AO1</b> – Some relevant knowledge and understanding of place(s) and environments which is partially relevant</p> <p><b>AO1</b> – Some knowledge and understanding of key concepts, processes and interactions and change</p> <p><b>AO1</b> – Some awareness of scale and temporal change which is sometimes integrated where appropriate. There may be a few inaccuracies</p>
<b>1</b>	<b>1–5</b>	<p><b>AO2</b> – Very limited and/or unsupported evaluative conclusion that is loosely based upon knowledge and understanding which is applied to the context of the question</p> <p><b>AO2</b> – Very limited analysis and evaluation in the application of knowledge and understanding. This lacks clarity and coherence</p> <p><b>AO2</b> – Very limited and rarely logical evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts</p> <p><b>AO1</b> – Very limited relevant knowledge and understanding of place(s) and environments</p> <p><b>AO1</b> – Isolated knowledge and understanding of key concepts and processes</p> <p><b>AO1</b> – Very limited awareness of scale and temporal change which is rarely integrated where appropriate. There may be a number of inaccuracies.</p>
<b>0</b>	<b>0</b>	No creditable content.

Indicative Content

The question links different parts of the Resource Security part of the specification, with specific reference to the resource futures section, although there are links to most other sections, notably the water security section. Candidates need to evaluate the importance of technological and political developments in alternative water futures. They should compare these factors using explanation and examples to justify their points as much as possible. They may also form an overall judgement to the most important factor overall. Answers will be limited to a maximum of level 3 if there is reference to only technological **or** political developments, either directly commented on or implied.

### AO1

- Knowledge and understanding of alternative water futures and their relationship with a range of technological, economic, environmental and political developments.
- Knowledge and understanding of strategies to manage water consumption.
- Knowledge and understanding of sustainability issues associated with water management. Knowledge and understanding of water conflicts at a variety of scales.
- Knowledge and understanding of sustainable water resource development.
- Knowledge and understanding from other areas of the specification if accurate and relevant to the question.

### AO2

- Evaluation of the importance of technological developments in alternative water futures. Eg improved technology is required for effective desalination, not only through the process, but also in terms of more effective and sustainable supplies. Better use of technology can also be applied to make new water infrastructure developments more effective and reduce leaks, with better use of materials or technology for monitoring. Technology is being developed to make irrigation more specific and less wasteful, through drip tip pipelines or use of robots and drones to target specific areas. Waste water purification is also being developed, with examples such as those in California being developed for large urban areas.
- Evaluation of the importance of political developments in alternative water futures. Eg government policies may dictate which options are chosen based on investment funds available and whether long-term planning is favoured. Countries with regular elections may be more restricted here, but countries like China, that has a long-term government, has invested in the biggest water management and transfer scheme in the world to make water access more sustainable in the country in the future. Hydro-politics is also a growing area based around the decisions of governments and between governments on water use both now and into the future. Issues such as the use of the Nile in Africa and development of dams within Ethiopia require effective management within the country to avoid future conflicts over water use in different regions, as well as international cooperation to avoid future restrictions and conflict.
- Evaluation of the importance of other factors in alternative water futures. Eg physical and environmental factors are key in water futures. Climate change is a major factor in determining future drought and precipitation levels which will dictate water availability and responses needed. Better focus on waste water management, such as water purification and use of grey water, as well as rainwater harvesting, may be beneficial in some areas. Economic factors will also be key as they link into political and technological factors in providing the funding for new technology or projects. If the funding is not available, or is needed elsewhere, this is a major limitation.
- An overall judgement of the most important factors overall. Eg whilst technology is a key factor in specific examples and can be more important at a smaller scale, large-scale water futures are dependent on both political and economic factors in terms of both funding, long-term planning and effective management, with engagement in hydro-politics if needed.

**Assessment Objective grid**

	AO1	AO2	AO3	Total
<b>Section A</b>				
01.1	1			1
01.2	1			1
01.3	1			1
01.4	1			1
01.5	1			1
02			6	6
03	4	5		9
04	10	10		20
<b>Section B</b>				
05.1	1			1
05.2	1			1
05.3	1			1
05.4	1			1
05.5	1			1
06			6	6
07	4	5		9
08	10	10		20
Unit total	38	30	12	80