A-level
GEOGRAPHY
7037/2

Paper 2 Human geography

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.

Further copies of this mark scheme are available from aqa.org.uk

Level of response marking instructions

Level of response mark schemes are broken down into levels, each of which has a descriptor. The descriptor for the level shows the typical performance for the level. There are marks in each level.

Before you apply the mark scheme to a student's answer read through the answer and annotate it (as instructed) to show the qualities that are being looked for. You can then apply the mark scheme.

The notes for answers provide indicative content. Students' responses may take a different approach in relation to that which is typical or expected. It is important to stress that examiners must consider all a student's work and the extent to which this answered the question, irrespective of whether a response follows an expected structure. If in doubt the examiner should contact their team leader for advice and guidance.

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 descriptor for that level. The descriptor for the level indicates the different qualities that might be seen in the student's answer for that level. If it meets 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 descriptor and the answer. With practice and familiarity you will find that for better answers you will be able to quickly skip through the lower levels of the mark scheme.

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, ie if the response is predominantly level 3 with a small amount of level 4 material it would be placed in level 3 but be awarded a mark near the top of the level because of the level 4 content.

Step 2 Determine a mark

Once you have assigned a level you need to decide on the mark. The descriptors on how to allocate marks can help with this. The exemplar materials used during standardisation will help. There will be an answer in the standardising materials which 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 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.

Indicative content in the mark scheme is provided as a guide for examiners. It is not intended to be exhaustive and you must credit other valid points. Students do not have to cover all of the points mentioned in the indicative content to reach the highest level of the mark scheme.

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

Annotations

?	Unclear
[	Left Square Bracket
]	Right Square Bracket
^	Omission mark
Acc?	Poor accuracy
AO1	Assessment Objective 1
AO2	Assessment Objective 2
DP	Developed point
EVAL	Evaluation
H Line	Text, Horizontal line that can be expanded
JUST	level or point just awarded
L1	Level one
L2	Level two
L3	Level three
L4	Level four
NAQ	Not answered question
NC	Nothing Creditworthy
SEEN	Indicates that the point has been noted, but no credit has been given.
Tick	Correct point
TV	Too vague
V Wavy	Text, Vertical Wavy line that can be expanded
Highlight	Highlight

On Page Comment	On Page Comment
Off Page Comment	Off Page Comment
MAX	MAX

Section A

Qu	Part	Marking guidance	Total marks
01	1	**Explain how trade agreements are a factor in globalisation.** Point marked Allow 1 mark per valid point with extra mark(s) for developed points (d). For example: Notes for answers Allow credit for specific knowledge and understanding of what trade agreements are and how they lead to globalisation. Candidates may also consider that trade agreements have occurred as a result of globalisation. • Trade agreements are formed by countries joining together to form a trade bloc that encourages trade between themselves and promotes economic co-operation (1), for example NAFTA (1) (d). • Trade agreements are a factor in globalisation by encouraging trade across a number of countries. This may lead to increased investment from other countries (1) for example Audi has built a factory in Mexico in order to gain access to other NAFTA countries (1). • Trade agreements can lead to people moving more freely to seek work in the trading bloc (1). This encourages globalisation by increasing links between countries as often supporting goods and services will follow (1) (d). • Bilateral agreements allow trade between two countries and can therefore enable greater flow of goods and labour between the two countries (1). • Without trade agreement some countries wouldn't trade with others (1). Therefore, agreements such as the WTO which covers trade in goods, services and designs (1) (d) help trade flow freely by providing a forum for negotiations encouraging trade across the globe (1) (d). • However, it can also be argued that trade agreements are necessary because of globalisation (1). Countries need to act as bloc to be able to negotiate on a global scale due to unequal power (1) (d). The notes for answers are not exhaustive. Credit any valid points. Credit given for how lack of agreements, e.g. quotas and tariffs, will act against globalisation.	**4** **AO1 = 4**

01	2	**Analyse the data shown in Figure 1.** **AO3** – Analysis of the infographic to show patterns of world trade for the global leading exporters. Mark scheme **Level 2 (4–6 marks)** **AO3** – Clear analysis of the quantitative and qualitative evidence provided which makes appropriate use of data to support. Clear connections between different aspects of the data. **Level 1 (1–3 marks)** **AO3** – Basic analysis of the quantitative and qualitative evidence provided which makes limited use of data to support. Basic or limited connections between different aspects of the data. Notes for answers This question requires analysis of the patterns of trade shown by the trip lines. There should be analysis of the patterns of imports and exports. **AO3** Most regions tend to predominantly trade with their nearest neighbours. For example, the US mainly trades with Canada and Mexico. • This is particularly the case for exports. In Germany over 75% of its exports are within Europe. Nearly all of Mexico's exports appear to be going to the USA. • However, some countries do not follow this pattern and exports are sent further away. China exports goods all over the world. Saudi Arabia also has a much broader range of export destinations. • In respect of the trading relationships shown it appears that most countries appear to import more than they export. This might be linked to the large surplus of exports over imports indicated for a few countries such as China and Saudi Arabia. • Most countries tend to more diverse in the origin of imports. For example, the Netherlands receive products from across the globe, having flow lines from all the regions except Australasia. Australasia only exports to Asia Pacific and China. • Volume of trade is much greater amongst the HICs and China. • They may note that only leading trade partners are shown, for example no African countries are shown. Credit any other valid analysis.	**6** **AO3 = 6**

01	3	**Using Figure 2 and your own knowledge, to what extent do you agree that the UN is able to promote development?** **AO1** – Knowledge and understanding of the attempts by the UN to promote development. **AO2** – Applies knowledge and understanding to the novel situation to analyse and evaluate the extent to which the UN has been successful in promoting development. Mark scheme **Level 2 (4–6 marks)** **AO1** – Demonstrates clear knowledge and understanding of concepts, processes, interactions and change. **AO2** – 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 with clear relevance. **Level 1 (1–3 marks)** **AO1** – Demonstrates basic knowledge and understanding of concepts, processes, interactions, change. **AO2** – Applies limited knowledge and understanding to the novel situation offering basic analysis and evaluation drawn from the context provided. Connections and relationships between different aspects of study are basic with limited relevance. Notes for answers This question requires knowledge of the UN and its success in global governance. Answers should show awareness of the extent to which the UN has promoted development through achieving the Millennium goals. **AO1** • The UN works to promote development by fostering co-operation between countries and regions. It was set up in 1945 with several goals including maintaining international peace and security, protecting human rights, delivering humanitarian aid, promoting sustainable development and upholding international law and has been involved in a diverse range of areas such as the environment, food supply, justice and eradication of poverty. • The Millennium Development Goals are 8 anti-poverty targets set in 2000 by the United Nations Development Programme. Their aim was to reduce poverty across the globe by 2015. They have now been replaced with the Sustainable Development Goals, which have a wider range including disaster risk reduction and reducing the impacts of climate change. • The UN technically has no political power as it mainly has an advisory role. It has however made an enormous contribution to securing world peace through the UN Security Council and the use of its	**6** **AO1 = 2** **AO2 = 4**

		peacekeeping forces. • The 15 member security council has the most power within the UN and can vote to authorise military actions, for example in Libya in 2011. • It has very successful in promoting human rights and development assistance. The UN capital development find has given grants and loans to developing countries enabling them to grow economically and improve living standards. **AO2** • To some extent there has been progress on all the MDGs shown in **Figure 2**. There has been improvement shown in all graphs. • Analysis of **Figure 2** shows that the most successful goal has been reducing extreme poverty by half. The percentage in 2010 was actually more than half that of 1990 and the target has been exceeded. 70% of countries are on track. • Improved access to drinking water has also been very successful as the target has been succeeded. 87% of people have access to safe drinking water. • The extent to which the successes have promoted development is difficult to assess as there are still 22% of people living in extreme poverty and 30% of countries haven't met their target. This has caused the gap to widen – most of the countries not meeting the MDG targets are sub-Saharan whereas the East Asian and South American countries have mostly met or exceeded theirs. • **Figure 2** shows that some MDGs have not been met in areas of health and education. In 2013 there was a significant way to go in reducing child mortality and only 44% of countries had met their target. Even less countries met their targets for reducing maternal mortality at only 23%. This would suggest that development has not been promoted adequately in most countries in the area of health. • They may also consider issues with the data. For example, the targets on poverty were about reducing the proportions of extreme poverty. However, whilst the proportion according to **Figure 2** has been reduced by just over 50% the actual number has not really changed due to population increase. • There should be an overall conclusion to consider the success or otherwise of the UN in promoting development. Any response is valid as long as it supported by the evidence in **Figure 2**. Credit any other valid approach.	

01	4	**Assess the relative importance of NGOs and international government organisations in enhancing protection of Antarctica.** **AO1** – Knowledge and understanding of the role of NGOs in enhancing protection of Antarctica. Knowledge and understanding of the role of international government organisations. Knowledge and understanding of the threats to Antarctica. **AO2** – Application of knowledge and understanding to analyse and evaluate the relative importance of NGOs and International government organisations in enhancing protection of Antarctica. <u>Notes for answers</u> The question requires students to assess the relative success of NGOs and International government organisations in protecting Antarctica. This could be in relation to each other or in relation to other strategies or organisations. **AO1** • The concept of the Global Commons in relation to Antarctica and the issues this causes in management of areas that fall outside national jurisdiction and to which all nations have access. There is likely to be increased pressures on such areas as resources become more scarce. • Threats to Antarctica at a variety of scales for example fishing and whaling, tourism, mining as well as threats from global climate change such as sea-ice expansion and ocean acidification. • An understanding of mitigation, resilience and adaptation with regards to the management of Antarctica. For example, ecosystem resilience includes the ability of species to recover from damage. This is important when considering how to manage Antarctica. • Knowledge of international government organisations involved in Antarctica – UN, UNEP, International Whaling commission. The International Whaling convention has the responsibility of ensuring the conduct of whaling in the Southern Ocean for example, ensuring no whaling takes place in the whale sanctuaries. CCAMLR involves 24 states and the EU and focuses on marine protection in the Southern Ocean. • Knowledge of legislation and treaties in place to protect Antarctica for example The Antarctic Treaty, the IWC whaling moratorium. The Madrid protocol gives extra protection especially in preventing mineral exploration. • The role of NGOs involved in monitoring and protecting Antarctica. For example, the Antarctic and Southern Ocean Coalition (ASOC) which includes Greenpeace and WWF. They have worked together to try and protect Antarctica by regulating tourism preventing damage to penguin colonies. • Accept reference to International Whaling Commission (IWC) as an NGO. **AO2** • Analysis of the need for international governance of the global	**20** **AO1 = 10** **AO2 = 10**

		commons of Antarctica in light of future pressures from mineral exploration as technology improves and global reserves decline. • The link between threats to Antarctica and the need for management. The fragility of the ecosystem and need for protection. For example, overfishing of krill, essential to the Southern Ocean ecosystem, by more than one nation, needs international co-operation. • Analysis of the role of international government organisations in protecting Antarctica. The Antarctic Treaty 1959 governs protection for a wide scope of activities from tourism to scientific research. The number of signatories has grown to 52 nations. Extra protection has also been added at later dates such as the Madrid Protocol in 1991, which designates Antarctica as a natural reserve devoted to peace and science. • Analysis of the role played by NGOs. Greenpeace has raised awareness of environmental issues via positive action campaigns such as 'krill-gotten gains to find Antarctic research'. ASOC successfully blocked the Minerals Convention. • Alternative futures in terms of the role of international governance and NGOs would also be relevant. For example, the Madrid Protocol only runs until 2048 and new agreements will be needed to ensure the future protection. • Evaluation of link between international government organisations and NGOs. ASOC has been granted observer status in the ATS attends annual meetings. • The importance of international government organisations relative to NGOs. The ATS is regarded as one of the most successful international agreements but has required the assistance of NGOs to ensure monitoring is effective. NGOs have been instrumental in ensuring the success of international agreements. For example, ASOC worked tirelessly to bring the Madrid Protocol to fruition. CCAMLR agrees conservation measures proposed by NGOs and has been very successful. For example, reducing seabird mortality to practically zero by regulating fishing. This required legislation which could not have been brought about by NGOs. • Overall conclusion should seek to consider the relative success or otherwise of both international governance and NGOs in protecting Antarctica. It should support the body of the text and evidence provided. Any valid assessment will be credited.	

Marking grid for Question 1.4

Level/ Mark Range	Criteria/Descriptor
Level 4 (16–20 marks)	• Detailed evaluative conclusion that is rational and firmly based on knowledge and understanding which is applied to the context of the question (AO2). • Detailed, coherent and relevant analysis and evaluation in the application of knowledge and understanding throughout (AO2). • Full evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts (AO2). • Detailed, highly relevant and appropriate knowledge and understanding of place(s) and environments used throughout (AO1). • Full and accurate knowledge and understanding of key concepts and processes throughout (AO1). • Detailed awareness of scale and temporal change which is well integrated where appropriate (AO1).
Level 3 (11–15 marks)	• Clear evaluative conclusion that is based on knowledge and understanding which is applied to the context of the question (AO2). • Generally clear, coherent and relevant analysis and evaluation in the application of knowledge and understanding (AO2). • Generally clear evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts (AO2). • Generally clear and relevant knowledge and understanding of place(s) and environments (AO1). • Generally clear and accurate knowledge and understanding of key concepts and processes (AO1). • Generally clear awareness of scale and temporal change which is integrated where appropriate (AO1).
Level 2 (6–10 marks)	• Some sense of an evaluative conclusion partially based upon knowledge and understanding which is applied to the context of the question (AO2). • Some partially relevant analysis and evaluation in the application of knowledge and understanding (AO2). • Some evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts (AO2). • Some relevant knowledge and understanding of place(s) and environments which is partially relevant (AO1). • Some knowledge and understanding of key concepts, processes and interactions and change (AO1). • Some awareness of scale and temporal change which is sometimes integrated where appropriate. There may be a few inaccuracies (AO1).
Level 1 (1–5 marks)	• Very limited and/or unsupported evaluative conclusion that is loosely based upon knowledge and understanding which is applied to the context of the question (AO2). • Very limited analysis and evaluation in the application of knowledge and understanding. This lacks clarity and coherence (AO2). • Very limited and rarely logical evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts (AO2). • Very limited relevant knowledge and understanding of place(s) and environments (AO1). • Isolated knowledge and understanding of key concepts and processes (AO1). • Very limited awareness of scale and temporal change which is rarely integrated where appropriate. There may be a number of inaccuracies (AO1).
Level 0 (0 marks)	• Nothing worthy of credit.

Section B

Qu	Part	Marking guidance	Total marks
02	1	**Explain how exogenous factors contribute to the character of a place.** Point marked For full marks there should be some link to character of place. Allow 1 mark per valid point with extra mark(s) for developed points (d). For example: Notes for answers • Exogenous factors are those which have an external cause or origin (1). For example, links to other places, routeways connecting places or policies made by external forces (1). • Exogenous factors often represent the flow of different things across space such as flows of people, money or ideas (1). • Exogenous factors such as flows of people change the character of places (1) for example, large numbers of South Asian migrants in Manchester have created the Curry Mile in Rusholme (1) (d). The character of the area is now dominated by curry restaurants, colourful sari shops and supermarkets selling exotic vegetables with many different languages being spoken (1) (d). • Relationships with other places can shape the character of a place (1) for example Helford Passage in Cornwall has many links with London as wealthy London residents have brought second homes (1) (d) as a result local services such as milk deliveries have closed down and many homes are empty for much of the year (1) (d). • Flows of investment into city centres by chain stores is also an exogenous factor (1) this causes homogenisation of town centres, meaning they lose individual character (1) (d). The Notes for answers are not exhaustive. Credit any valid points.	**4** **AO1 = 4**
02	2	**Analyse the data shown in Figures 3a, 3b and 3c** **AO3 –** Analysis of the qualitative and quantitative data shown in **figures 3a**, **3b** and **3c** relating to the health and well-being of residents. Mark scheme **Level 2 (4–6 marks)** **AO3** – Clear analysis of the evidence provided which makes appropriate use of data to support. Clear connections between different aspects of	**6** **AO3 = 6**

		the data. **Level 1 (1–3 marks)** **AO3** – Basic analysis of the evidence provided which makes limited use of data to support. Basic or limited connections between different aspects of the data. <u>Notes for answers</u> The question requires an analysis of the data sources in terms of the connection both within and between the figures. No credit for simple lifting of data in isolation. **AO3** • **Figure 3a** clearly shows that some factors dominate, for example words about relationship such as family and friends. Words relating to health are also significant such as diet, exercise and stress. A huge proportion of smaller words are related to health issues eg words to do with drugs, smoking and alcohol. This links with **Figure 3b** in that these are problems more likely experienced by younger people. This also links to the large percentage of people with health problems in **Figure 3c**. • The word cloud doesn't differentiate between positive and negative impacts on health. Family is one of the biggest factors being repeated many times including words such as grandchildren, wife and children. More words are related to social factors as opposed to economic. • **Figure 3b** shows that Central ward has a much larger percentage of young adult males than the North Somerset average for example, more than double the average 25–29 year olds. This is similar for females but not to the same extent. There are 1% more males than females in the 25–29 category. The number of retired people is about average, although there are significantly more females over 80. This contrasts with **Figure 3c** which shows a smaller percentage for retired people than the North Somerset average. • **Figure 3c** shows that there are high numbers of unemployed and long-term sick compared to the average. Together they account for 13% more. This is also shown in **Figure 3a** where work is frequent factor for health impacts. The higher number of unemployed also links with **Figure 3b** showing the higher number of male young adults. Credit any other valid analysis.	

02	3	**Using Figure 4 and your own knowledge, assess the usefulness of sources such as this in representing a place.** **AO1** – Knowledge and understanding of the usefulness of qualitative sources to represent places. Knowledge and understanding of qualitative sources used to represent local and/or distant places. **AO2** – Application of knowledge and understanding to this novel situation. Evaluation of **Figure 4** to assess the usefulness of 'Wickerman' in representing Sheffield. Interprets **Figure 4** to show understanding of how the song lyrics represent place. <u>Mark scheme</u> **Level 2 (4–6 marks)** **AO1** – Demonstrates clear knowledge and understanding of concepts, processes, interactions and change. **AO2** – 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 with clear relevance. **Level 1 (1–3 marks)** **AO1** – Demonstrates basic knowledge and understanding of concepts, processes, interactions, change. **AO2** – Applies limited knowledge and understanding to the novel situation offering basic analysis and evaluation drawn from the context provided. Connections and relationships between different aspects of study are basic with limited relevance. <u>Notes for answers</u> The question requires an understanding of how song lyrics represent places, including Sheffield and their usefulness in doing so. For L2 there must be reference to **Figure 4**. **AO1** • Knowledge and understanding of how qualitative sources can represent places. For example, songs often describe changes in a place or lived experiences. • Examples of songs used to describe places, for example Dirty Old Town describes Salford in 1949. It describes the old industrial characteristics of the area. • Examples of other oral sources such as oral reminisces used to describe places. Radio 4 broadcast oral accounts of life in Park Hill flats in Sheffield describing community life. • Songs can be very useful in evoking strong images of an area. For example, Dirty Old Town really gives a feel for the industrial pollution, talking of the Salford wind, referring to the sulphurous smell in the area at the time. • However, songs are based on opinions, and can just represent a snapshot in time. Dirty Old Town no longer describes what Salford is	**6** **AO1 = 2** **AO2 = 4**

		like as there is little manufacturing present in the area today **AO2** • Interpretation of **Figure 4** to show how it represents Sheffield as an urban, industrial place. Concrete channels suggest that the river has been altered to serve the area. The 'old Trebor factory' suggests that de-industrialisation may have occurred. • Interpretation of the song lyrics suggest that the area is suffering due to its past industrialisation. 'Little mesters coughing their lungs up' hints at how air pollution might have caused lung disease in people living in the area. 'Dirty brickwork' also suggests air pollution has caused deposits on buildings. • Overall the song portrays a negative image of the area in Sheffield. It gives a dark underground image of a neglected area which as physical and social issues. • Evaluation of the usefulness of the song in representing Sheffield may consider that it does evoke the problems de-industrialisation has caused in areas like Sheffield. However, it is only referring to one area so is just a snapshot. • The song does consider how places change as it also useful in conveying the sense of what the area might have been like in the past. The Trebor factory made the air smell of nougat and caramel – this hints at the industrial success in the past. • This song may be less useful in terms of its accuracy as some of the lyrics are quite dramatic. For example, the images of people coughing up 'globules the colour of tomato ketchup' is quite shocking. There is also a comedic edge such as 'pudgy fifteen year olds addicted to coffee whitener' which is probably not representative of 15 year olds in Sheffield. • Evaluation of the power of songs in evoking strong personal memories such as the description of the area around the Leadmill. It is very specific and 'draws a map' from memory in your head. • There may an overall evaluation of songs such as Wickerman in terms of the usefulness of songs in representing places. Credit any other valid assessment.	

02	4	**Evaluate the role of one or more external forces in changing lived experience in the local or distant place you have studied.** **External forces might include:** • **government policies** • **multinational corporations** • **international or global institutions.** **AO1** – Knowledge and understanding of the changing character of the local or distant place. Knowledge and understanding of the characteristics and impact of external forces on people and places. **AO2** – Applies this knowledge and understanding to evaluate the role of external forces in changing lived experience in the local or distant place studied. <u>Notes for answers</u> The question links different parts of the theme of Changing places, specifically the connections and relationships between places and external forces and changes in people's lived experience in the local place or distant place. Responses can be based on any external forces that fit the question. The specification gives a choice of external forces, but any external force is creditworthy. The context should be **change** in lived experience in the local or distant place studied. If more than one place considered, credit the best response. **AO1** • Knowledge and understanding of the characteristics of the local place or distant place. This might include socio-economic characteristics, demographics, employment, built environment, land-use. • Knowledge and understanding of how the place characteristics have changed over time. Change over time could be described at a variety of scales and this will very much depend on the place chosen. For example, it may include change over hundreds of years, or it may just be recent changes due to regeneration or a new housing estate. • Knowledge of how changes over time affect people's lived experiences in the place chosen. • Background knowledge of the place and factors affecting lived experience. • Generic awareness of the impacts of external forces. Government policies such as regeneration, improve access to better quality housing. This improves living standards. • The relationship and connections between external forces and people/places. Nissan built a factory in Sunderland creating employment and links with Japan. New deal for communities provided 10 years of funding for inner city deprived areas and has reduced crime and improved local employment.	**20** **AO1 = 10** **AO2 = 10**

		AO2 • Links between external forces and the place will very much depend on the local place used. • Analysis of how external forces have impacted on the local or distant place. Government policy such as affordable homes might have increased available housing stock. A multinational company may have built a factory. Deindustrialisation could have caused factories to close. EU investment in the area may have built a new road. • Analysis of how external forces have had positive changes on lived experience in the place. For example, a new road may have cut down commuting time and increased employment opportunities. More affordable homes mean that local people can remain in the area keeping close family links. • Analysis of how external forces have had negative impacts on people's lived experience in the place. Government policies such as regeneration may have caused gentrification, forcing out local people who can no longer afford to live in the area. • Evaluation of the role of external forces in changing lived experience may consider the importance of such changes. For example, a new factory built in the area may have caused a multiplier effect and created regeneration and more opportunities. • Evaluation of the role of external forces in changing lived experience may consider the changes in demographic and cultural characteristics or economic changes. Migration policies may have encouraged different ethnic groups to move into the area. Lived experience is dramatically changed due to the arrival of different shops, religious buildings and traditions. Economic change as a result of homogenisation of town centres means the loss of independent retailers and subsequent livelihoods. • Overall assessment of the role of external forces should consider the extent of change in people's lived experience and an evaluation of the role played in that by the external forces. Credit any other valid approach. Evaluation should be based upon preceding content.	

Marking grid for Question 2.4

Level/ Mark Range	Criteria/Descriptor
Level 4 (16–20 marks)	• Detailed evaluative conclusion that is rational and firmly based on knowledge and understanding which is applied to the context of the question (AO2). • Detailed, coherent and relevant analysis and evaluation in the application of knowledge and understanding throughout (AO2). • Full evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts (AO2). • Detailed, highly relevant and appropriate knowledge and understanding of place(s) and environments used throughout (AO1). • Full and accurate knowledge and understanding of key concepts and processes throughout (AO1). • Detailed awareness of scale and temporal change which is well integrated where appropriate (AO1).
Level 3 (11–15 marks)	• Clear evaluative conclusion that is based on knowledge and understanding which is applied to the context of the question (AO2). • Generally clear, coherent and relevant analysis and evaluation in the application of knowledge and understanding (AO2). • Generally clear evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts (AO2). • Generally clear and relevant knowledge and understanding of place(s) and environments (AO1). • Generally clear and accurate knowledge and understanding of key concepts and processes (AO1). • Generally clear awareness of scale and temporal change which is integrated where appropriate (AO1).
Level 2 (6–10 marks)	• Some sense of an evaluative conclusion partially based upon knowledge and understanding which is applied to the context of the question (AO2). • Some partially relevant analysis and evaluation in the application of knowledge and understanding (AO2). • Some evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts (AO2). • Some relevant knowledge and understanding of place(s) and environments which is partially relevant (AO1). • Some knowledge and understanding of key concepts, processes and interactions and change (AO1). • Some awareness of scale and temporal change which is sometimes integrated where appropriate. There may be a few inaccuracies (AO1).
Level 1 (1–5 marks)	• Very limited and/or unsupported evaluative conclusion that is loosely based upon knowledge and understanding which is applied to the context of the question (AO2). • Very limited analysis and evaluation in the application of knowledge and understanding. This lacks clarity and coherence (AO2). • Very limited and rarely logical evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts (AO2). • Very limited relevant knowledge and understanding of place(s) and environments (AO1). • Isolated knowledge and understanding of key concepts and processes (AO1). • Very limited awareness of scale and temporal change which is rarely integrated where appropriate. There may be a number of inaccuracies (AO1).
Level 0 (0 marks)	• Nothing worthy of credit.

Section C

Qu	Part	Marking guidance	Total marks
03	1	**Which of the following is a cause of counter-urbanisation?** B	1 **AO1 = 1**
03	2	**Choose the description that best fits the present global pattern of urbanisation** A	**1** **AO1 = 1**
03	3	**Which of the following would NOT be an appropriate technique for a sustainable city:** B	**1** **AO1 = 1**
03	4	**Choose the hydrograph below that would most accurately represent an urban catchment.** B	**1** **AO1 = 1**
03	5	**Analyse the data shown in Figures 5a, 5b and 5c.** **AO3** – Analysis of the relationship between waste streams and economic characteristics. <u>Mark scheme</u> **Level 2 (4–6 marks)** **AO3** – Clear analysis of the quantitative evidence provided which makes appropriate use of data to support. Clear connections between different aspects of the data. **Level 1 (1–3 marks)** **AO3** – Basic analysis of the quantitative evidence provided which makes limited use of data to support. Basic or limited connections between different aspects of the data. <u>Notes for answers</u> The question requires analysis of the spatial variation in recycling rates and the proportion of low-paid workers. They should seek to analyse the relationship by comparing the graph and the map and making use of the Spearman's rank data.	**6** **AO3 = 6**

		For full marks there must be reference to **figure 5c**. There is no credit for explanation of relationship. **AO3** • There is a wide variation of recycling rates across London, with a range of about 39%. The highest is in Bexley and the lowest in Newham. • The highest recycling rates are all outer London boroughs (except for Ealing). The lowest rates are found in inner London boroughs, with the lowest being Newham in east London. • The pattern for the spatial variation in low paid residents is not very clear. The smallest proportions occur in the west and main inner boroughs such as Westminster. The highest proportion occurs in the north both in east and west London. There is a band of 20–23.9% extending from SW to NE. • It is clear from the Rs value that there is a negative correlation – the higher the proportion of low-paid workers the lower the rate of recycling. • However, the relationship is not significant as the Rs value of -0.206 is below the critical value of 0.345. Therefore, we would accept the null hypothesis. Responses may note that it is fairly close to the value. • It is clear that some of the lowest recycling rates occur in the boroughs that have the highest number of low-paid workers, for example Newham and Barking & Dagenham. However, some of the wealthiest boroughs have the lowest recycling rates such as Westminster where although less than 16% of the residents are low paid, it has the second lowest recycling rate. • The highest rates of recycling seem to occur in boroughs which have less than 28% of people on low-pay. The highest borough, Bexley, has 20.0–23.9% of its residents on low-pay. Credit any other valid analysis.	

03	6	**Using Figure 6a and your own knowledge, evaluate the use of SUDS in achieving the benefits shown in Figure 6b.** **AO1** - Knowledge and understanding of the development of SUDS. **AO2** - Application of knowledge and understanding to evaluate the use of SUDS in order to achieve the benefits shown in **Figure 6b**. <u>Mark scheme</u> **Level 3 (7–9 marks)** **AO1** – Demonstrates detailed knowledge and understanding of concepts, processes, interactions and change. These underpin the response throughout.	**9** **AO1 = 4** **AO2 = 5**

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.

Level 2 (4–6 marks)
AO1 – Demonstrates some appropriate knowledge and understanding of concepts, processes, interactions and change. These are mostly relevant though there may be some minor inaccuracy.
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.

Level 1 (1–3 marks)
AO1 – Demonstrates basic/limited knowledge and understanding of concepts, processes, interactions and change. These offer limited relevance with inaccuracy.
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.

Notes for answers
The question requires knowledge of the development of SUDS and different strategies used (including **Figure 6a**). This should then be applied to **Figure 6b** to evaluate the extent to which these benefits can be achieved.

Whilst there is no requirement within the spec to use specific case-studies, credit specific schemes where used appropriately.

AO1
- Knowledge and understanding of SUDS – environmentally friendly replications of natural drainage systems in the built environment.
- The aims of SUDS, for example, to slow surface run-off and the break-down of water pollution.
- Characteristics of SUDS – easy management, environmentally friendly, require little to no energy to function.
- Different strategies employed to develop SUDS for example swales, green roofs, rain-gardens, permeable road and pavement surfaces, infiltration trenches and detention basins.
- Case-study knowledge of specific SUDS. For example, Lamb Drove in Cambourne is a housing estate which has major flooding concerns. Detention basins were built to store water temporarily and during flood events.

AO2
- Evaluation of SUDS in achieving the benefits shown in **Figure 6b**. For example, detention basins can store water so reducing flood risks.

		These can be very successful as they also look natural and also achieve the benefit of enhancing biodiversity as a range of vegetation can be planted proving habitats for many animals and birds. • Analysis of different strategies and the degree to which they can achieve the benefits shown in **Figure 6b**. Water butts collect roof water slowing down run-off but are fairly small scale in achieving the benefit of flood risk management; however, as residents can store water this helps with drought management. • Analysis of the scheme shown in **Figure 6a**. These are swales (not necessary to name it) which collect excess water and slow down run-off. The water is collected in the vegetation which also cleans it. • Evaluation of the scheme shown in **Figure 6a** in relation to the possible benefits. For example, the swales will help with flood risk management, but they will also improve water quality and recreation opportunities as it provides a nice environment to walk in. • Evaluation of the success of SUDS. They may refer to specific schemes such as the Lamb Drove scheme which is a proven success. Costs are estimated to be 10% lower than conventional schemes. Biodiversity has increased. It has achieved many of the benefits shown in **Figure 6b**. • The challenges and problems with SUDS. There have been concerns about the detention ponds being a hazard in residential areas and on school sites. Many of the schemes are very small and only benefit very localised areas. • Students may consider other benefits not listed in **Figure 6b**. This would be a legitimate AO2 evaluation as long as they are comparing to **Figure 6b**. • Overall evaluation may conclude that SUDS schemes provide a range of benefits and it depends on the type and scale of the scheme. They may also conclude that as SUDS is relatively new, evaluation is quite limited and in fact there may be more long-term benefits that we are unable to assess yet. Credit any other valid approach.	

03	7	**For one urban area you have studied, to what extent are environmental problems a consequence of globalisation?** **AO1** – Knowledge and understanding of environmental problems in one urban area and knowledge and understanding of the concept of globalisation and the dimensions of globalisation – flows of capital, labour, products, services and information, patterns of production, distribution and consumption. **AO2** - Application of knowledge and understanding to analyse and evaluate the extent to which environmental problems are the result of globalisation. <u>Mark scheme</u> **Level 3 (7–9 marks)** **AO1** – Demonstrates detailed knowledge and understanding of concepts, processes, interactions and change. These underpin the response throughout. **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. **Level 2 (4–6 marks)** **AO1** – Demonstrates some appropriate knowledge and understanding of concepts, processes, interactions and change. These are mostly relevant though there may be some minor inaccuracy. **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. **Level 1 (1–3 marks)** **AO1** – Demonstrates basic/limited knowledge and understanding of concepts, processes, interactions and change. These offer limited relevance with inaccuracy. **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. <u>Notes for answers</u> This question links two different units of the specification, namely contemporary urban environments and global systems and global governance. Students are required to assess the extent to which globalisation (GG) is responsible for environmental problems in one urban area (CUE). Responses will be very much dependent on the urban area chosen. They may take the view that globalisation is not the dominant factor, and this is acceptable as long as they present a valid	**9** **AO1 = 4** **AO2 = 5**

		alternative argument explaining why globalisation is not a factor. **Max L1** for generic responses with no identifiable urban area. If more than one urban area included, credit best response. **AO1** • Knowledge and understanding of environmental problems in urban areas. These might include dereliction, waste disposal, lack of green space, traffic congestion, air pollution and water pollution. • Case-study of one urban area. Understanding of the environmental problems found in the urban area. • Knowledge and understanding of the concept of globalisation – flows of money, labour and products. Patterns of industrialisation. • Knowledge and understanding of the issues resulting from globalisation such as unequal flows of money and people, ideas and technology. **AO2** • Evaluation of the extent to which environmental problems in an urban area are the result of globalisation. For example, increased wealth in has led to an increase in waste. Dereliction of many former factories in urban areas in UK occurred as a result of globalisation as much industry was transferred to Asia. • Analysis of extent to which globalisation results in environmental problems in the urban area studied. For example, Bangalore produces 20 000 tonnes of e-waste a year. This is the result of increased flows of money in the IT sector with firms like Google having bases in the city. 90% of the waste is removed using the informal sector – poor slum dwellers sort the waste but with no regulations this causes further environmental problems as toxic chemicals are released into the environment. • Responses could consider how unequal flows of money impact on the ability of urban areas to deal with the environmental problem such as waste disposal. Many western cities are now able to export large volumes of their waste each year, reducing their waste problem. Analysis of how globalisation has caused a flow of labour into many cities such as Dhaka in Bangladesh with many global brands locating there. This causes water pollution due to increased dwellers in slums producing sewage. • Analysis of the extent to which environmental problems are not the result of globalisation. Water pollution in many European cities is the result of old sewage infrastructure and poor waste disposal practice, for example disposal of wet wipes and fat disposal into main sewers. Similarly air pollution resulting from traffic congestion is difficult to relate directly to globalisation. • Overall evaluation of the extent to globalisation of money is responsible for environmental problems should reflect whole response but will very much depend on the urban area chosen. Credit any other valid approach.	

03	8	**With reference to two contrasting urban areas, assess the role played by the process of suburbanisation in creating patterns of economic and social well-being.** **AO1** – Knowledge and understanding of the patterns of economic and social-wellbeing in contrasting urban areas. Knowledge and understanding of the process of suburbanisation. **AO2** – Application of knowledge and understanding to analyse and evaluate the extent to which suburbanisation is responsible for patterns of economic and social-wellbeing in two contrasting locations. <u>Notes for answers</u> The question links various aspects of the Contemporary urban environments section of the specification, specifically suburbanisation and the section requiring the study of two contrasting urban areas. The contrasting areas could be different parts of the same urban area. They may consider that suburbanisation has had no effect in their urban areas and may suggest that other factors have created patterns of economic and social well-being. This is a legitimate response as long as they explain the absence of suburbanisation as a factor. **AO1** • An understanding of the key idea of suburbanisation should be expected. Its role as a process of urbanisation over time. Suburbanisation refers to the movement and outward growth of people, goods and services. • Knowledge and understanding of the generic impacts of suburbanisation and other processes of urbanisation such as counter-urbanisation and urban resurgence. For example, suburbanisation can result in urban sprawl, causing the loss of rural habitats. Traffic congestion becomes a problem due to increased levels of commuting. Retail parks built on the edge of urban areas create employment in low-skilled jobs. • Knowledge of patterns of economic and social well-being in two contrasting locations. Highest levels of wealth in London occur in inner boroughs in the west such as Kensington, whereas low levels of economic well-being found in inner boroughs in the east such as Tower Hamlets. In Nairobi the lowest levels of economic well-being are found on the outskirts some 30 km from the centre and also in Kibera a large slum. However, it much more mixed as Kibera sits next to the university and a large golf-course. • The causes of patterns of social well-being and economic well-being in the two locations without reference to suburbanisation. In London, Notting Hill has high levels of economic well-being due to gentrification and land-use with large Victorian villas that frequently sell for more than £10 million. In Mumbai, Dharavi has low levels of social well-being as people live in slums next to the railway land as this is the only land they can find.	**20** **AO1 = 10** **AO2 = 10**

AO2

- Assessment of the link between suburbanisation and economic and social well-being. For example suburbanisation has resulted in the development of retail and science parks on the edge of cities increasing levels of economic well-being in the suburbs. Social well-being has also improved due to increased levels of employment for those living in the suburb, reducing traffic congestion in the inner city.
- Suburbanisation can also cause social well-being to decline in the suburbs due to urban sprawl, reducing access to green space.
- Evaluation of the impact of suburbanisation on the inner-city for example, dead-heart syndrome and resulting inner-city decline, socially and economically. This is also true of CBD, for example in building out-of-town retail parks such as Cribbs Causeway had a detrimental effect on Broadmead in Bristol.
- Evaluation of the impact of suburbanisation in the two contrasting locations. For example, suburbanisation in Los Angeles has resulted in poor levels of social well-being in inner city areas such as South Central have led to riots, as those with limited choice are left behind creating social segregation. However, in Sao Paulo, higher levels of social well-being are seen in the centre as suburbanisation is less about choice as people locate slums in the suburbs where there is space and a long way from the CBD.
- The extent to which suburbanisation is responsible for patterns of social and economic well-being will very much depend on the two urban areas studied and this should be taken into account.
- The extent to which other factors are responsible for patterns of social and economic well-being may be considered, for example, de-industrialisation may be a more important factor. They could also consider land-use as playing a vital role.
- They may consider temporal change in that whilst suburbanisation has had an impact, this impact is now lessening due to regeneration. This will very much depend on the urban areas studied.
- They may also consider alternative futures. In Mumbai for example, suburbanisation has caused land prices to rise in Dharavi as wealthy houses have been built around it. This has resulted in the plan for Dharavi to be redeveloped – they may consider what effect this may have on future social and economic well-being.
- An overall judgement of the extent to which suburbanisation creates patterns of economic and social well-being should be addressed as a final conclusion. Any conclusion is valid as long as it supports the body of the essay.

Credit any other valid approach.

Marking grid for Question 3.8

Level/ Mark Range	Criteria/Descriptor
Level 4 (16–20 marks)	• Detailed evaluative conclusion that is rational and firmly based on knowledge and understanding which is applied to the context of the question (AO2). • Detailed, coherent and relevant analysis and evaluation in the application of knowledge and understanding throughout (AO2). • Full evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts (AO2). • Detailed, highly relevant and appropriate knowledge and understanding of place(s) and environments used throughout (AO1). • Full and accurate knowledge and understanding of key concepts and processes throughout (AO1). • Detailed awareness of scale and temporal change which is well integrated where appropriate (AO1).
Level 3 (11–15 marks)	• Clear evaluative conclusion that is based on knowledge and understanding which is applied to the context of the question (AO2). • Generally clear, coherent and relevant analysis and evaluation in the application of knowledge and understanding (AO2). • Generally clear evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts (AO2). • Generally clear and relevant knowledge and understanding of place(s) and environments (AO1). • Generally clear and accurate knowledge and understanding of key concepts and processes (AO1). • Generally clear awareness of scale and temporal change which is integrated where appropriate (AO1).
Level 2 (6–10 marks)	• Some sense of an evaluative conclusion partially based upon knowledge and understanding which is applied to the context of the question (AO2). • Some partially relevant analysis and evaluation in the application of knowledge and understanding (AO2). • Some evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts (AO2). • Some relevant knowledge and understanding of place(s) and environments which is partially relevant (AO1). • Some knowledge and understanding of key concepts, processes and interactions and change (AO1). • Some awareness of scale and temporal change which is sometimes integrated where appropriate. There may be a few inaccuracies (AO1).
Level 1 (1–5 marks)	• Very limited and/or unsupported evaluative conclusion that is loosely based upon knowledge and understanding which is applied to the context of the question (AO2). • Very limited analysis and evaluation in the application of knowledge and understanding. This lacks clarity and coherence (AO2). • Very limited and rarely logical evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts (AO2). • Very limited relevant knowledge and understanding of place(s) and environments (AO1). • Isolated knowledge and understanding of key concepts and processes (AO1). • Very limited awareness of scale and temporal change which is rarely integrated where appropriate. There may be a number of inaccuracies (AO1).
Level 0 (0 marks)	• Nothing worthy of credit.

Qu	Part	Marking guidance	Total marks
04	1	**Which of the following strategies would not increase agricultural productivity?** A	**1** **AO1 = 1**
04	2	**Which of the following statements describes a demographic impact of migration?** C	**1** **AO1 = 1**
04	3	**What changes occur to a country as it moves from Stage 2 to Stage 3 in the demographic transition model?** C	**1** **AO1 = 1**
04	4	**Choose a health impact likely to result from ozone depletion.** A	**1** **AO1 = 1**
04	5	**Analyse the data shown in Figures 7a, 7b and 7c.** **AO3** – Analysis of the trends in the incidence of diabetes, global pattern of obesity and the relationship between diabetes and obesity. <u>Mark scheme</u> **Level 2 (4–6 marks)** **AO3** – Clear analysis of the quantitative evidence provided which makes appropriate use of data to support. Clear connections between different aspects of the data. **Level 1 (1–3 marks)** **AO3** – Basic analysis of the quantitative evidence provided which makes limited use of data to support. Basic or limited connections between different aspects of the data. <u>Notes for answers</u> The question requires analysis of all three Figures. Students should look for changes in the countries with the highest cases of diabetes, the global pattern of obesity. Connections should be made between the graph and	**6** **AO3 = 6**

		the map. For full marks there must be reference to **figure 7c**. **AO3** • 6 of the countries in the top 10 for diabetes are still in the top 10 in 2014. All of the countries that have dropped out are HICs and all the countries that have moved into the top 10 are LICs. • They may note that the ranking is based on numbers therefore large countries will have higher numbers due to higher populations. • Well over a third of the world's population with diabetes live in two countries – India and China. • The highest levels of obesity occur in North America, Northern Africa and the Middle East. The highest amounts are found in Saudi Arabia and USA which both have 35–40% obese people. • The lowest levels are found in south/south-east Asia and Africa (except north and South Africa). India and Bangladesh both have less than 5% obese people. • It is clear that some of the countries in **Figure 7b** also have the highest levels of obesity. For example, the USA is 3rd in 1980 and 2014 but also has the highest rates of obesity. The UK, Egypt and Mexico also have high levels of obesity. • However, some countries in the **Figure 7b** do not have high levels of obesity. For example, Japan and India both have very low levels below 5%. • The Rs calculation suggests there is positive correlation – as numbers of people with obesity increases so does the number of people with diabetes. The Rs value of 0.598 is above the critical value of 0.538, so we can reject the null hypothesis. • They may give an overall analysis that there is a relationship but there are many anomalies for example, India and Japan. Credit any other valid analysis.	

04	6	**Using Figures 8a, 8b and your own knowledge, how far do you agree that Thailand has achieved a demographic dividend?** **AO1** – Knowledge and understanding of the concept of a demographic dividend. Knowledge and understanding of models of population change. **AO2** – Application of knowledge and understanding to evaluate population data in order to assess validity of demographic dividend. <u>Mark scheme</u> **Level 3 (7–9 marks)** **AO1** – Demonstrates detailed knowledge and understanding of concepts, processes, interactions and change. These underpin the response throughout. **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	**9** **AO1 = 4** **AO2 = 5**

and coherent argument is presented.

Level 2 (4–6 marks)
AO1 – Demonstrates some appropriate knowledge and understanding of concepts, processes, interactions and change. These are mostly relevant though there may be some minor inaccuracy.
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.

Level 1 (1–3 marks)
AO1 – Demonstrates basic/limited knowledge and understanding of concepts, processes, interactions and change. These offer limited relevance with inaccuracy.
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.

Notes for answers

The question requires an understanding of the concept of a demographic dividend. Students then need to apply this knowledge to assess the extent to which Thailand has achieved such a dividend using population pyramids and development indicators.

AO1

- Knowledge and understanding of term demographic dividend – the economic boost a country gets when its working population outnumbers its dependents.
- The link between demographic dividend, the DTM and population pyramids. Demographic Dividend is linked with stage 3 when fertility rates fall rapidly, and life expectancy is rising. This can also be seen as a bulge on a population pyramid in working age.
- An understanding of how an economic boost is created. Less money is spent on dependents so investment in economic development, health and education increases. This results in greater productivity and lower burdens on families.
- Understanding of how the dividend can be affected by different circumstances such as political instability.
- Concept of second demographic dividend – ageing populations mean that retirement ages are increased. Retirees often have a large spending power due to accrued assets over a longer working life. This increases the national income through taxes and spending.
- Knowledge of population pyramids showing an understanding of the implications of different structures. For example, a wide base, suggests many dependent children. A wider top suggests an ageing population.

AO2

		• Analysis of **Figure 8a** to interpret the population pyramids – 1980 suggests there was a large dependent population as a wide base – approximately 16% are under 15. In 2010 there is bulge suggesting a large working population compared to dependents. Future projection suggests Thailand will have an ageing population as the bulge is now higher up. • Analysis of population pyramids to link to DTM. In 1980 Thailand still at end of stage 2 as it has a wide base whereas by 2010 it is more stage 4 suggesting it has moved through DTM very rapidly. By 2030 the shape suggests it is moving towards stage 5. • Analysis of **Figure 8b** to interpret the development indicators and relationship to DTM. The data supports the idea that Thailand has moved from stage 2 to 4 as fertility rates have more than halved and have now levelled out (stage 4). There has been a corresponding fall in death rates evident from rising life expectancy. This data supports the population pyramids showing a narrowing base. • Evaluation of the relationship between **Figure 8a** and the demographic dividend. Demographic dividend is usually reached at stage 3 of DTM so the population pyramid for 2010 certainly suggests this is the case. There is a large bulge in the working population with a narrow base and top. This means that there are lots of workers paying taxes and since they have fewer children they will invest more of their earnings. • However, 2030 suggests an ageing population which could mean that Thailand only has a short window to reap the benefits of the dividend as by 2030 it will have too many elderly dependents to support. This is supported by data in **Figure 8b** which suggests that life expectancy is still rising. • Evaluation of the data in **Figure 8b** in support of Thailand's demographic dividend. Productivity has increased from 1980 to 2010 suggesting the dividend has been attained. This is supported also by an increase in adult literacy from 1980–2010, perhaps due to greater investment in education and smaller class-sizes as a result of lower fertility rates. • However, by 2015 there has been a fall in both economic growth and adult literacy rate suggesting the demographic dividend has now passed. • The degree to which the data is reliable as evidence would also be a legitimate approach. They may consider that we are only seeing snapshots in time. For example, the decline in economic growth in 2015 could just be 'blip' and it could now be increasing again. Or it could be due to global economic conditions so not related to Thailand's demographic dividend. • Alternative futures may also be considered. The 2030 pyramid suggests an ageing population which could create the possibility of a second demographic dividend. • Overall evaluation of the extent to which Thailand has achieved a demographic dividend. There is certainly a lot of evidence in the population pyramid structure for 2010 and the data in **Figure 8b** that a dividend has been achieved. However, this appears to be	

		unsustainable as evidence in **Figure 8b** suggests economic growth is declining. Credit any other valid approach.	

04	7	**To what extent has globalisation contributed to patterns of population change in a country or society you have studied?** **AO1** – Knowledge and understanding of population change in one country or society. Knowledge and understanding of the dimensions of globalisation. **AO2** – Applies knowledge and understanding to analyse and evaluate the extent to which globalisation has caused population change in the country or society studied. <u>Mark scheme</u> **Level 3 (7–9 marks)** **AO1** – Demonstrates detailed knowledge and understanding of concepts, processes, interactions and change. These underpin the response throughout. **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. **Level 2 (4–6 marks)** **AO1** – Demonstrates some appropriate knowledge and understanding of concepts, processes, interactions and change. These are mostly relevant though there may be some minor inaccuracy. **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. **Level 1 (1–3 marks)** **AO1** – Demonstrates basic/limited knowledge and understanding of concepts, processes, interactions and change. These offer limited relevance with inaccuracy. **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. <u>Notes for answers</u>	**9** **AO1 = 4** **AO2 = 5**

This question makes connections across two different units, namely Global Governance and Population and the environment. Responses should focus on dimensions of globalisation (GG) and the requirement to study population change in one country (PE).

Responses will vary according to the country or society studied. They may take the view that globalisation is not the dominant factor; this is acceptable as long as they present a valid alternative argument explaining why globalisation is not a factor.

Max L1 for generic responses with no identifiable country or society.

AO1

- Awareness of factors in natural population change. Key vital population rates, specifically birth and death rates. Knowledge and understanding of the factors affecting population change.
- Knowledge of changes in birth and death rates in the country studied. For example, in China there has been a rapid decrease in the birth rate due to the one-child policy. Death rates have also fallen considerably but recently have begun to rise due to an ageing population.
- Knowledge of specific patterns of overall population change in the country studied. Likely future scenarios of change based on current rates.
- Temporal change in overall population growth rates in the country studied and reasons for such change.
- Knowledge of the dimensions of globalisation – flows of capital, labour, products, services and information.

AO2

- Evaluation of the causes of population change and their relative importance. This will vary according to the case-study. For example, Uganda has recently seen a fall in birth rates, the most important factor in this has been improved education and access to family planning as a result of a government programme.
- Analysis of the reasons for patterns of change across the country studied. For example birth rates have fallen much faster in Chinese cities such as Shanghai as opposed to rural regions. This is the result of the one-child policy being easier to police in cities but also education levels and career opportunities are greater in cities.
- Analysis of the link between globalisation and population change. Greater employment in TNCs leads to a fall in birth rates as women have more career opportunities. TNCs often provide better healthcare, leading to a fall in death rates. Improved services provided by organisations such as Oxfam has led to a fall in death rates in rural areas.
- Analysis of the link between globalisation and the pattern of change in the country studied. In China, employment opportunities are greater in cities, where TNCs operate. This has caused much out-migration from rural areas, leading to population decline in some areas.
- Evaluation of the extent to which population change is caused by globalisation. This will depend on country studied. For example, in

		China globalisation has made a huge contribution to patterns of population change whereas in Uganda it is perhaps less important. • Evaluation of the extent to which factors others than globalisation contribute to population change. For example, impact of one-child policy in China. • The overall extent to which globalisation contributes to population change in the country studied. Students may come to an overall conclusion and this should be based on the evidence presented. Credit any other valid approach.	

04	8	**'As more and more countries exceed their carrying capacity, soil problems will inevitably increase and there is very little that can be done to mitigate this.'** **To what extent do you agree with this statement?** **AO1** – Knowledge and understanding of soil problems and their management. Knowledge and understanding of the concept of carrying capacity. Knowledge and understanding of factors affecting population change. **AO2** – Application of knowledge and understanding to evaluate the link between population growth/increased consumption and soil problems, and the degree to which this can be managed. <u>Notes for answers</u> The question requires links between several aspects of the Population and the Environment section of the specification, specifically soil problems and their management and the concept of carrying capacity. It also links the idea of population growth and pressures on agriculture due to increased production and consumption. **AO1** • Knowledge and understanding of the concept of carrying capacity. • Knowledge and understanding of soil problems relating to agriculture – soil erosion, waterlogging, salinization etc. • The causes of soil problems in relation to agriculture. • Knowledge of strategies to manage soil problems such as field drains and tree planting. • Awareness of the global and regional patterns of food production and consumption. • Understanding of the issues around food security and strategies to manage these. • Knowledge of population growth dynamics – underpopulation, overpopulation and optimum population. • An appreciation of perspectives on population growth would also be appropriate for example, Malthusian viewpoints versus Boserup ideas.	**20** **AO1 = 10** **AO2 = 10**

AO2

- Evaluation of the link between population pressures and soil problems. The extent to which population pressure increases the likelihood of soil problems.
- Evaluation of the causes of soil problems for example, commercial farming, population growth, demands for exotic food, climate change.
- Analysis of the extent of future soil problems in the light of environmental change. Climate change may present new challenges. More land will become marginal.
- Evaluation of strategies to reduce population growth. Awareness of alternative futures in managing population growth.
- The extent to which soil problems cause countries to exceed their carrying capacity would also be appropriate. For example, soil erosion means that it is difficult to grow crops to support a population. In the Sahel many countries have already exceeded their carrying capacity for this reason.
- The extent to which carrying capacity is exceeded for other reasons, for example, conflict, population growth, climate change and natural hazards.
- Assessment of the link between soil problems and overpopulation. For example many areas of the Indus Valley are now abandoned due to salinization meaning this area has high levels of out-migration as it can't simply support the local population.
- Varying levels of success in managing soil problems leading to increased yields, for example contour stones in Burkina Faso have reduced problems of soil erosion meaning carrying capacity is increased.
- An evaluation of the effectiveness of strategies to manage soil problems and the factors affecting mitigation of soil problems. Awareness of alternative futures in managing soil problems.
- The extent to which management of soil problems can in turn lead to increased yields and therefore support a population, reducing likelihood of carrying capacity being exceeded.
- The extent to which the statement applies in different countries/regions may also be considered. Carrying capacity is less likely to be exceeded in HICs who can afford to import food and mitigate against soil problems. However HICs may increasingly cause soil problems in LICs due to increased demands and consumption as a result of increasing affluence.
- Some may conclude that soil problems are caused by intensive commercial farming and demands from HICs rather than population growth. This would be an appropriate conclusion.
- Students should come to an overall conclusion as to whether they agree that soil problems are inevitable and the extent to which these can be managed. Any viewpoint is valid as long as it is supported by the evidence presented in the response.

Credit any other valid approach.

Marking grid for Question 4.8

Level/ Mark Range	Criteria/Descriptor
Level 4 (16–20 marks)	• Detailed evaluative conclusion that is rational and firmly based on knowledge and understanding which is applied to the context of the question (AO2). • Detailed, coherent and relevant analysis and evaluation in the application of knowledge and understanding throughout (AO2). • Full evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts (AO2). • Detailed, highly relevant and appropriate knowledge and understanding of place(s) and environments used throughout (AO1). • Full and accurate knowledge and understanding of key concepts and processes throughout (AO1). • Detailed awareness of scale and temporal change which is well integrated where appropriate (AO1).
Level 3 (11–15 marks)	• Clear evaluative conclusion that is based on knowledge and understanding which is applied to the context of the question (AO2). • Generally clear, coherent and relevant analysis and evaluation in the application of knowledge and understanding (AO2). • Generally clear evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts (AO2). • Generally clear and relevant knowledge and understanding of place(s) and environments (AO1). • Generally clear and accurate knowledge and understanding of key concepts and processes (AO1). • Generally clear awareness of scale and temporal change which is integrated where appropriate (AO1).
Level 2 (6–10 marks)	• Some sense of an evaluative conclusion partially based upon knowledge and understanding which is applied to the context of the question (AO2). • Some partially relevant analysis and evaluation in the application of knowledge and understanding (AO2). • Some evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts (AO2). • Some relevant knowledge and understanding of place(s) and environments which is partially relevant (AO1). • Some knowledge and understanding of key concepts, processes and interactions and change (AO1). • Some awareness of scale and temporal change which is sometimes integrated where appropriate. There may be a few inaccuracies (AO1).
Level 1 (1–5 marks)	• Very limited and/or unsupported evaluative conclusion that is loosely based upon knowledge and understanding which is applied to the context of the question (AO2). • Very limited analysis and evaluation in the application of knowledge and understanding. This lacks clarity and coherence (AO2). • Very limited and rarely logical evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts (AO2). • Very limited relevant knowledge and understanding of place(s) and environments (AO1). • Isolated knowledge and understanding of key concepts and processes (AO1). • Very limited awareness of scale and temporal change which is rarely integrated where appropriate. There may be a number of inaccuracies (AO1).
Level 0 (0 marks)	• Nothing worthy of credit.

Qu	Part	Marking guidance	Total marks
05	1	**Choose the answer below that would be considered an appropriate strategy to manage water consumption.** B	**1** **AO1 = 1**
05	2	**Which of the following defines the concept of a resource frontier?** B	**1** **AO1 = 1**
05	3	**Which of the following has the correct examples of primary and secondary sources of energy in the correct columns?** A	**1** **AO1 = 1**
05	4	**Choose the best definition of the virtual water trade from the list below.** C	**1** **AO1 = 1**
05	5	**Analyse the data shown in Figures 9a, 9b and 9c.** **AO3** - Analysis of map data, pie chart and Spearman's rank data to analyse the relationship between coal production and coal consumption. <u>Mark scheme</u> **Level 2 (4–6 marks)** **AO3** – Clear analysis and interpretation of the quantitative evidence provided, which makes appropriate use of data in support. Clear connection(s) between different aspects of the data and evidence. **Level 1 (1–3 marks)** **AO3** – Basic analysis and interpretation of the quantitative evidence provided, which makes limited use of data and evidence in support. Basic connection(s) between different aspects of the data and evidence. <u>Notes for answers</u> Analysis should seek connections within or between the data sets. They	**6** **AO3 = 6**

		may consider the relationship between coal production and coal consumption. For full marks there must be reference to **figure 9c** **AO3** • **Figure 9a** shows that production is dominated by China, which produces over 3 times, the amount of the next highest – the USA. • Production of coal is widespread with major producers in all continents except South America. • **Figure 9b** shows that consumption is also dominated by China which accounts for 50% of the world's consumption of coal. In fact, 3 countries account for nearly ¾ of the world's consumption. • The Rs calculation suggests there is a strong positive correlation between production and consumption as the Rs value of 0.806 is clearly above the critical value of 0.648, meaning we can reject the null hypothesis. • Eight out of ten countries in the top 10 consumers are also in the top 10 producers. Only Japan and South Korea, who together account for 5% of the world's consumption, are not correspondingly major producers. • However, some of the countries who produce a lot of coal don't rank so highly for consumption. For example, Australia is the 4th ranked for production but is second to last for consumption, with only Kazakhstan consuming less. India produces less coal than the USA but is second in terms of consumption. India also is the only country in the top 10 to consume more than it produces. • There is obviously a clear relationship between production and consumption – by the fact that 8 out of 10 top producing countries are also the highest consumers. This is also supported by the Spearman's rank calculation which suggests there is a strong positive correlation. Credit any other valid analysis.	

05	6	**Using Figures 10a, 10b, 10c and your own knowledge, assess the relationship between energy supply and physical geography.** **AO1** – Knowledge and understanding of the relationship between energy supply and physical geography – climate, geology and drainage. **AO2** – Applies knowledge and understanding to assess the extent of the relationship between energy supply in selected European countries and the physical geography. <u>Mark scheme</u> **Level 3 (7–9 marks)** **AO1** – Demonstrates detailed knowledge and understanding of concepts, processes, interactions and change. These underpin the response throughout. **AO2** – Applies knowledge and understanding appropriately with detail. Connections and relationships between different aspects of study are	**9** **AO1 = 4** **AO2 = 5**

fully developed with complete relevance. Analysis and evaluation are detailed and well supported with appropriate evidence.

Level 2 (4–6 marks)
AO1 – Demonstrates clear knowledge and understanding of concepts, processes, interactions and change. These are mostly relevant though there may be some minor inaccuracy.
AO2 – Applies clear knowledge and understanding appropriately. Connections and relationships between different aspects of study are evident with some relevance. Analysis and evaluation are evident and supported with clear and appropriate evidence.

Level 1 (1–3 marks)
AO1 – Demonstrates basic knowledge and understanding of concepts, processes, interactions and change. This offers limited relevance with inaccuracy.
AO2 – Applies limited knowledge and understanding. Connections and relationships between different aspects of study are basic with limited relevance. Analysis and evaluation are basic and supported with limited appropriate evidence.

Notes for answers
The question requires understanding of how physical geography can affect energy supply. Students should apply this knowledge to the data in **Figure 10a** and use **Figures 10b** and **10c** to assess the extent of the link.

AO1
- Knowledge and understanding of different types of energy – non-renewable and renewable.
- Understanding of how physical geography affects the supply of energy.
- Climate and supply of energy – solar needs larger amounts of daylight hours. Wind energy can be supplied in climates with higher wind velocities. Hydroelectricity is dependent on higher precipitation amounts.
- The impact of geology on energy supply – higher yields of fossil fuels.
- Drainage and energy supply – harnessing for HEP.
- Other physical geography factors affecting energy supply such as tectonic hazards generating geothermal power or presenting challenges in supplying nuclear energy for example.
- Knowledge and understanding of how physical geography affects the energy mix in specific countries may also be included. For example the energy mix in Nigeria is still dominated by fuelwood (51%) and Oil (41%); this is due to regional geological factors and the presence of large, local oil reserves. Lack of rainfall means that hydro only accounts for 3%.

AO2
- Analysis of **Figure 10a** to apply knowledge of how energy types are supplied. For example, hydroelectricity is a major contributor to many European countries' energy mixes – this needs large amounts of precipitation and/or high ground to allow fall in gravity.

		• Analysis of **Figure 10a** and **Figure 10b** to evaluate the link between physical geography and energy supply. Countries with high relief such as Norway are producing large amounts of hydro power. However, this is not always the case as some countries with high relief, such as the Germany produce very limited amounts of hydro so other factors such as attitudes towards renewables may come into force. • Analysis of **Figure 10a** and **Figure 10c** to evaluate link between energy supply and climate. They may consider that high precipitation amounts will encourage use of hydro for example in Norway and Austria. Spain has high relief but lower precipitation levels which may explain why hydro is less important in the energy mix • Assessment of other physical geography factors that may be responsible for the energy mixes shown. Iceland generates about 27% of power from geothermal due to its position on the Mid Atlantic ridge so it can harness volcanic activity. Spain has high relief so is able to generate much of its power from wind. • Analysis of other physical geography factors that may be contributing to the overall energy mix. For example, UK is only generating 32% of its power from nuclear/renewables. This is due to natural gas reserves found under the North Sea. • Evaluation of other factors contributing to the energy mixes, for example human factors such as political ideologies regarding sustainability goals, use of renewables and nuclear power and so on. Levels of economic development and local capacities for innovation and development in energy supply. Population densities may constrain or facilitate the development of space consuming renewable options such as wind and solar power. • Evaluation of the importance of physical geography in determining energy supply. Students may conclude that it has limited importance and that political and economic factors are far more important in determining the energy mix of a country. Credit any other valid assessment.	

05	7	**To what extent are water conflicts the result of globalisation?** **AO1** – Knowledge and understanding of water conflicts. Knowledge and understanding of the dimensions of globalisation. **AO2** – Application of knowledge and understanding to evaluate the role played by globalisation in causing water conflicts. Mark scheme **Level 3 (7–9 marks)** **AO1** – Demonstrates detailed knowledge and understanding of concepts, processes, interactions and change. These underpin the response throughout. **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 are detailed and well supported with appropriate evidence. **Level 2 (4–6 marks)** **AO1** – Demonstrates clear knowledge and understanding of concepts, processes, interactions and change. These are mostly relevant though there may be some minor inaccuracy. **AO2** – Applies clear knowledge and understanding appropriately. Connections and relationships between different aspects of study are evident with some relevance. Analysis and evaluation are evident and supported with clear and appropriate evidence. **Level 1 (1–3 marks)** **AO1** – Demonstrates basic knowledge and understanding of concepts, processes, interactions and change. This offers limited relevance with inaccuracy. **AO2** – Applies limited knowledge and understanding. Connections and relationships between different aspects of study are basic with limited relevance. Analysis and evaluation are basic and supported with limited appropriate evidence. Notes for answers The question requires links to be made between two different units namely global governance and resource security, specifically the relationship between globalisation (GG) and water conflicts (RS). They may take the view that globalisation is not the dominant factor; this is acceptable as long as they present a valid alternative argument explaining why globalisation is not a factor. **AO1** • Knowledge and understanding of water conflicts at a variety of scales from local to international. • Knowledge and understanding of the causes of water conflicts such as social, environmental, economic and political. • Specific examples of conflicts described eg Uttar Pradesh (local farmers versus Coca-Cola), Ganges River (Bangladesh and India),	**9** **AO1 = 4** **AO2 = 5**

		Tibetan Plateau (India and China). • Knowledge and understanding of the dimensions of globalisation - – flows of capital, labour, products, services and information. **AO2** • Awareness of the link between globalisation and water conflicts. Globalisation frequently the basis of the conflict. TNCs often extract water for use in industry. Evidence includes Uttar Pradesh, where Coca-Cola extracts water reducing the supply for local farmers. In Chile, Copper extraction by TNCs has depleted the supply of water for local farmers. • Evaluation of the relative importance of the causes of water conflicts. For example, in India new dams are being built by India on the Ganges, this political decision is the main source of conflict. In Gaza, political reasons are the main source of conflict although climate change and population increase also playing a part following several droughts. • Analysis of part played by global systems in causing water conflicts. Coca-Cola is the main cause of the conflict in Utter Pradesh where as its influence is very limited in Gaza. • An analysis of different values and attitudes towards the water conflict and causes of the conflict. • Evaluation of the extent to which globalisation plays a part in causing water conflicts. It is often the major reason in many local conflicts where water is extracted for use by TNCs. However often a major cause is climate change or population increase which is not always related to globalisation. Rivers basins often cover many countries and political decisions are often at the heart of the conflict. • Analysis of the conflict between reducing demand in the home and the huge water losses at a corporate level and the subsequent impact on achieving sustainability. For example, in UK, 43% of homes have installed water meters. In Southern Water areas – this saves about 30 million litres a day, but Southern water reportedly loses about 87million litres a day due to leaks from water pipes. • A legitimate response would be to consider whether globalisation may actually reduce water conflicts, for example, at a local-scale many farmers leave rural areas to work in TNCs, thereby reducing water demand in areas of stress. Globalisation also means that international charities have been able to employ strategies such as borehole pumps to reduce water conflicts. • Students should come to a conclusion as to the extent to which globalisation causes water conflicts. Any conclusion is valid as long as it supports the content of the response. Credit any other valid approach.	

05	8	**'Increasing demand for energy and/or mineral ores is inevitably leading to an increase in the importance of geopolitics.'** **To what extent do you agree with this statement?** **AO1** – Knowledge and understanding of the demand and security of energy and/or mineral resources. Knowledge and understanding of the geopolitics of resources. **AO2** – Application of knowledge and understanding to evaluate the extent to which management of energy and/or mineral resources is a geopolitical issue. Application of knowledge and understanding to assess the importance of geopolitics in resource and global security. <u>Notes for answers</u> The question links different parts of the Resource Security section specifically demand for energy and/or mineral resources and the geopolitics of resources. It also links future possibilities for resources and strategies for managing resources. There is no requirement for students to consider both resources and full marks could be achieved by only using one. **AO1** • Components of demand for energy and mineral resources. • Global patterns of production, consumption and trade of energy and mineral ores. • Factors leading to increased demand: population pressures, increased affluence, climate change, technological advancements etc. • An understanding of the concept of geopolitics – the process by which countries and regions attempt to manage and affect the use of resources. • Knowledge and understanding of the geopolitics of energy and mineral ores in terms of distribution, trade and management. • Strategies to manage the consumption of energy and minerals, including international agreements and use of new technologies. **AO2** • Evaluation of the role played by geopolitics in managing demand of resources. For example, OPEC control the supply of oil and in the 1970s withheld supplies of oil resulting in high oil prices. This in turn reduced the use of oil. However, this was inadvertent and not intentional. • Evaluation of the extent to which geopolitics can cause an increase in resource insecurity or demand would also be a valid response. Islamic State (ISIS) took control of many oil facilities in Iraq and disrupted the supplied increasing the insecurity of oil supplies in the region. Decision made in one country can increase demand in another. For example, increased demand on the US oil supplies during the Gulf Wars. • Analysis of the extent to which geopolitics is necessary in solving resource conflict. For example, President Obama signed an	**20** **AO1 = 10** **AO2 = 10**

		agreement in 2010 to restrict use of conflict minerals such as Coltan in the Democratic Republic of Congo. Increasing demand for Coltan for mobile phones was funding armed conflict. • Analysis of the increasing need for self-sufficiency in obtaining resource security and reducing the reliance on imports in some countries. Technological advancements may reduce the need for geopolitical decisions. For example, new technologies may allow us to separate and process rare earth chemicals reducing need for mineral such as coltan. • Analysis of the extent to which future technologies can overcome physical challenges in the specified place. For example, in Mexico City, extraction of water from deeper aquifers may be possible. Ecological rainwater capture is also being explored. However, these may be thwarted by economic costs. Fracking may have an important impact on the need to drill in Alaska. Therefore, less need to overcome the physical challenge of cold environments. • Evaluation of the role geopolitics can play in managing demand through international agreements. Climate change agreements should reduce demand on fossil fuels. • Evaluation of the importance of geopolitics in protecting wilderness areas with increased pressure on the demand for resources. For example, Montreal Protocol protects Antarctica from commercial mineral exploitation. These may need to increase in future as demand increases. • Analysis of future possibilities in terms of the roles played by TNCs rather than governments. Some may argue that TNCs are themselves important agents in geopolitics and/or point to the link between major TNCs and governments in shaping attitudes and policies regarding energy and mineral ore demand. • Analysis of how future changes in demand will be affected by growing populations, levels of business activity, urbanisation patterns and climate change. LICs are likely to see huge increases in energy demand. There may be greater use of large scale power plants, but sustainable small scale developments may be the way forward in many poorer countries. Therefore the degree to which geopolitics is important will vary depending on the size of future developments. • Answers should evaluate the relative importance of geopolitics in managing resource security in the face of increasing demand. Any conclusion is possible as long as it supported by evidence in the body of the answer. The conclusion will be very much dependant on resources discussed and the evidence used. Credit any other valid approach.	

Marking grid for question 5.8

Level/ Mark Range	Criteria/Descriptor
Level 4 (16–20 marks)	• Detailed evaluative conclusion that is rational and firmly based on knowledge and understanding which is applied to the context of the question (AO2). • Detailed, coherent and relevant analysis and evaluation in the application of knowledge and understanding throughout (AO2). • Full evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts (AO2). • Detailed, highly relevant and appropriate knowledge and understanding of place(s) and environments used throughout (AO1). • Full and accurate knowledge and understanding of key concepts and processes throughout (AO1). • Detailed awareness of scale and temporal change which is well integrated where appropriate (AO1).
Level 3 (11–15 marks)	• Clear evaluative conclusion that is based on knowledge and understanding which is applied to the context of the question (AO2). • Generally clear, coherent and relevant analysis and evaluation in the application of knowledge and understanding (AO2). • Generally clear evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts (AO2). • Generally clear and relevant knowledge and understanding of place(s) and environments (AO1). • Generally clear and accurate knowledge and understanding of key concepts and processes (AO1). • Generally clear awareness of scale and temporal change which is integrated where appropriate (AO1).
Level 2 (6–10 marks)	• Some sense of an evaluative conclusion partially based upon knowledge and understanding which is applied to the context of the question (AO2). • Some partially relevant analysis and evaluation in the application of knowledge and understanding (AO2). • Some evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts (AO2). • Some relevant knowledge and understanding of place(s) and environments which is partially relevant (AO1). • Some knowledge and understanding of key concepts, processes and interactions and change (AO1). • Some awareness of scale and temporal change which is sometimes integrated where appropriate. There may be a few inaccuracies (AO1).
Level 1 (1–5 marks)	• Very limited and/or unsupported evaluative conclusion that is loosely based upon knowledge and understanding which is applied to the context of the question (AO2). • Very limited analysis and evaluation in the application of knowledge and understanding. This lacks clarity and coherence (AO2). • Very limited and rarely logical evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts (AO2). • Very limited relevant knowledge and understanding of place(s) and environments (AO1). • Isolated knowledge and understanding of key concepts and processes (AO1). • Very limited awareness of scale and temporal change which is rarely integrated where appropriate. There may be a number of inaccuracies (AO1).
Level 0 (0 marks)	• Nothing worthy of credit.