



A Level Geography

7037/2: Human geography

Report on the exam

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Summary

The human geography examination was an accessible assessment, and it enabled students to score well across each of the themes. The overall distribution of marks indicated the paper discriminated well. The more able students could show their knowledge, understanding and skills whilst the less able could still access the lower levels of the mark scheme and gain credit.

As with previous years, students had prepared for the structure of the examination and again there were very few incidences of rubric infringement. Completing all thirteen questions is a demanding task and there were relatively few papers suggesting students had run out of time.

The standard format of the paper is for students to answer questions from two compulsory core sections and one of the three options. There was a very similar pattern of marks across the three options, but Resource security continues to be the least popular choice taught by centres.

Students showed that they were well prepared and that they understood how the questions align to the Assessment Objectives (AOs). Hence, there was evidence of clear geographical knowledge and understanding (AO1), appropriate application of knowledge (AO2) and some good use of geographical skills (AO3).

Areas where students excelled

- All question types showed evidence of good student performance.
- Performance on the 4-mark questions assessing AO1 was a particular strength.
- Question **02.1** was answered well with good knowledge of the term ‘endogenous factors’ and some clear links to how these contributed to the character of places.
- Question **03.1** assessed students understanding of the concept of urban decentralisation and the reasons why both people and/or businesses had moved away from city centres. Students could explain economic, social and environmental reasons behind these changes and quite often used examples to help demonstrate their understanding.
- AO3 questions provide students with the opportunity to apply geographical skills of analysis and interpretation to a variety of resources presenting geographical information. Many students accessed Level 2 by demonstrating analytical skills such as identifying overall patterns and trends, data manipulation, picking out anomalies, making connections between resources, and accurately interpreting scales and legends.
- In the 6- and 9-mark questions (AO1 & AO2) that used novel stimulus material there was evidence of some student confidence and clear application of knowledge and understanding.
- Question **01.3** and **02.3** scored almost identical mean marks into low Level 2. Question **01.3** showed students had knowledge of the role of NGOs and could assess their importance in raising awareness in the protection of Antarctica.

- Question **02.3** required students to assess how a person's lived experience affects their sense of place with the two photographs of London allowing students to consider insider and outsider perspectives.
- In Section C, students chose to answer questions from the optional topics they had studied.
 - On question **03.3** the novel resource focussed on fortress developments
 - On question **04.3** the novel resource focused on female education and fertility
 - On question **05.3** the novel resources focused on wastewater and greywater management
 Students linked the resources to their own knowledge, rather than describing the information presented.
- In Section C, each of the 9-mark questions showed mean scores of over 5.0, indicating mid-level 2 performance. Students showed knowledge and evaluation of sustainable cities, local-scale factors negatively impacting health, and the geopolitics of mineral resources.
- Student responses to the extended questions (20 marks) were often well structured and presented clear arguments with effective links to case studies.
- Question **02.4** had the highest mean, indicating mid-level 3 performance. Students provided detailed place knowledge to demonstrate how shifting flows of investment had an impact on the character of the place. Detroit, areas of London (Stratford, Shoreditch, Brick Lane and Docklands) and Liverpool all featured prominently as places where shifting flows of investment (both positive and negative) had changed the character of the place over time.
- The 20-mark question in Section C required students to make synoptic links between physical and human themes and required students to make a connection between impacts of the changing carbon cycle taken from the physical geography core theme of water and carbon cycles, and an aspect of the human options. Questions **03.5**, **04.5** and **05.5** all achieved mean marks within level 3.
- Question **04.5** had a mean score of over 12 and showed students had some clear knowledge and understanding of the possible impact of the changing carbon cycle on migration. Connections were drawn between increased carbon in the atmosphere, climate change, increased weather and climate related hazards, rising sea levels, impacts on agriculture, urban flooding and the possibility of climate related migration. There was evidence of good place knowledge here. Many focused on Pacific Island communities or sub-Saharan Africa.

Areas where students struggled

- In question **01.1** (AO1, 4 marks) a number of students misread the key terminology in the question, producing responses referring to environmental independence rather than interdependence. For those students studying Resource Security a number were unable to differentiate clearly between primary and secondary sources of energy.
- In general, there were some errors made by students on the resources questions (AO3).
- In question **02.2** there was some misinterpretation of the horizontal scale showing the percentage of respondents. Some students saw these values as actual numbers of responses.
- In question **05.2**, many students understood the logarithmic horizontal scale; however, some did not, and as a result, their analysis was incorrect and limited to Level 1.

- Most of the 6- and 9-mark questions evidenced some good subject knowledge and application. However, students could achieve higher marks within Level 2 or 3 by making their assessments and evaluations more explicit.
- The 20-mark essays did highlight some areas for improvement. When answering 20-mark questions, students were more successful when the response continued with a single line of reasoning, compared to responses that try to offer a balanced argument or approach from different angles.
- Question **01.4** (AO1, 20 marks) was a complex question linking unequal flows of technology to inequalities in patterns of consumption. Some students interpreted the term consumption simply in terms of food consumption. Others were determined to repeat their learned knowledge of global trade such as Apple, Coca Cola, bananas or coffee rather than integrate examples into their responses. A number of responses to 1.4 were convoluted and lacked a direction of argument.

Point marked questions

4-mark questions are point marked. A mark may be awarded where a student makes a single relevant point and subsequent marks awarded (if applicable) where the student develops those points with additional knowledge.

Levels marked questions

6-mark, 9-mark and 20-mark questions are levels marked where the response is holistically marked against the assessment objectives, given a mid-level mark initially and then a fine tune mark awarded within that level.

Assessment Objectives (AOs)

AO1: Demonstrate knowledge and understanding of places, environments, concepts, processes, interactions and change, at a variety of scales (30-40%).

AO2: Apply knowledge and understanding in different contexts to interpret, analyse and evaluate geographical information and issues (30-40%).

AO3: Use a variety of relevant quantitative, qualitative and fieldwork skills to:

- investigate geographical questions and issues
- interpret, analyse and evaluate data and evidence
- construct arguments and draw conclusions (20-30%)

4-mark AO1 questions

These questions assess knowledge and understanding and require students to outline key processes, concepts, interaction and change.

Qualities seen in more successful responses

The key to good marks in the 4-mark, AO1, questions is to make clear, focused responses that directly relate to the part of the specification being assessed. Specific knowledge is vital, and responses should be clear and if appropriate relate to a suitable example.

Question 1 Global systems and global governance

0 1 . 1 Outline what is meant by environmental interdependence.

[4 marks]

environmental interdependence relates to the growing importance of environmental sustainability among all nations. For environmental interdependence all nations must work together to reduce greenhouse gas emissions for example. Environmental interdependence is shown via the Paris agreement of 2015 trying to limit ~~the~~ global warming to 2°C above pre-industrial levels. However, Extra space the US do not ~~use~~ a part of the Paris Agreement, representing difficulties in obtaining environmental interdependence.

This response, from the core theme of Global Systems and Global Governance, is a very good example of a student writing clear, concise focused points about the topic being assessed, in this case environmental interdependence. It includes some details of an example of this interdependence, the Paris agreement of 2015.

(4 marks)

Question 1 Global systems and global governance

0 1 . 1 Outline what is meant by environmental interdependence.

[4 marks]

Interdependence is the non tangible linkages between nations, and in this case is focussed on global ties due to mutual agendas environmentally. Environmental interdependence could be developed due to TNCs exporting environmental degradation to host countries. It can be found most clearly in the governance of the global commons. But more importantly in the atmosphere as nations collectively have a goal to reduce greenhouse gas emissions, and therefore are dependent on each other to collectively cooperate and do their part as seen in the Paris agreement signed by 196 nations, committing to ~~not~~ ^{keep} limiting keeping global temperature rise at 2°C above pre industrial levels.

4 clear points relating to aspects of environmental interdependence. Max 4.

This answer demonstrates the student shows an understanding of the mutual agendas with environmental issues, effectively linking these to the governance of the global commons, and the shared responsibility in dealing with the issue of climate change. It was also awarded full marks.

(4 marks)

Limitations of less successful responses

Lower scoring responses to the 4-mark questions tend to show limited knowledge and understanding of the concept being assessed. Responses may make incorrect statements or simply not know enough about the topic.

Question 1 Global systems and global governance

0 1 . 1 Outline what is meant by environmental interdependence.

[4 marks]

environmental interdependence refers to the idea that all aspects of environment are linked and 'dependent' on one another. This allows for free flowing trade with ~~some~~ minimal conflict or upset.

In this example, from Global Systems and Global Governance, the response gained 1 mark. This was for an overall point about aspects of the environment being linked. However, it connects the environment to trade which is not the thrust of the question. The answer is very brief and demonstrates limited knowledge.

(1 mark)

Question 2 Changing places

0 2 . 1 Outline how endogenous factors contribute to the character of place.

[4 marks]

Endogenous factors like, the natural location, footprint, topography etc... all contribute to the character of the place. These all give a place a specific feeling, and ~~and~~ meaning to live there. They tend to be unchanged by time (physical geography, location etc...) and therefore form a unique character, specific to that certain place.

Extra space

lots of 'almost' statements - one mark for the overall response

This low-scoring response to question 02.1, on the topic of Changing Places refers to some endogenous factors (natural location, topography), but without developing how these contribute to the character of place. One mark is awarded for the overall sense of understanding, but the student has not produced clear knowledgeable statements.

(1 mark)

6-mark AO3 skills questions

These questions assess how students interpret, analyse and evaluate data, evidence and resources.

Qualities seen in more successful responses

The resources from the skills checklist used to present geographical information in this paper included bar graphs (simple, compound and comparative, using both linear and logarithmic scales), maps and comparative line graphs. To score well in the skills questions students should aim to apply relevant skills directly to the data provided. These skills may include identifying overall patterns ('the big picture'), recognising trends within the data, accurately reading scales and interpreting values, exemplifying key points and reporting on anomalies and manipulating data further to add depth to their analysis.

Figure 1a and Figure 1b are in the insert.

Figure 1a shows the sales of the transnational corporation LEGO Group, 2017–2021, by world region.

Figure 1b shows the global distribution of LEGO Group's corporate locations in 2021.

0 1 2 Analyse the data shown in Figure 1a and Figure 1b.

Figure 1a shows a year on year increase in sales. Sales in 2021 were 21 billion Kroner higher than in 2017. In every year the majority of sales are in Europe, middle east and africa. However, the asia and pacific region has experienced around a 6 billion Kroner increase since 2017. In figure 1b, corporate locations are 60% of sites are based in Europe, middle east and Africa which corresponds to the high number of sales there in figure 1a. The most sites in a single country are in the Czech republic and China. China accounts for around 42% of total sites in asia and the pacific. The Americas are the least active region in terms of corporate locations with just a 13% share of world sites but have the second highest sales of 22 billion Kroner.

not correct

link

correct manipulation

60.8%

60%

22 billion Kroner

Question 1 continues on the next page

This example uses data relating to the sales of LEGO and the global distribution of corporate locations. The response begins with an overview 'there has been a year-on-year increase' and shows that the scale was read with some degree of accuracy ('21bn Kroner higher in 2021 compared to 2017'). There is some data manipulation (use of percentages) and the student comments on both resources (compound bars and the map). There are connections made between the two resources.

Level 2 (6 marks)

Figure 7a shows average dietary energy supply in world regions from 2000 to 2018.

Figure 7b shows the adequacy of food supply in world regions from 2000 to 2018.

0 4 . 2

Analyse the data shown in Figure 7a and Figure 7b.

[6 marks]

link

In figures 7a and 7b higher dietary energy supply generally corresponds to a higher adequacy of food supply.

AO3 year not clear but true for 2018

An anomaly can be found in figure 7b with Latin America and the Caribbean having a higher adequacy rate

this is only area to move up in rank order in 7b

despite receiving less energy from food in figure 7a. The range in dietary energy supply is 960 calories with North America and Europe being the highest and Africa being the lowest by a considerable margin. Over both figures,

AO3

increases and decreases in energy supply and adequacy mirror each other. In both figures, Asia experiences the greatest increase in both measures. In dietary energy it experienced an increase of 360 calories. In terms of adequacy

AO3

correct

Extra space Asia experienced an increase of 13%.

AO3

In both figures, the regions generally matched the changes in food adequacy and energy supply. Asia, North America and Europe have the smallest change. Since 2000 of 80 calories and a 3% increase in adequacy.

correct

AO3

AO3

L2

all figures correct great answer full marks

Question 4 continues on the next page

This response, from the People and Environment topic, shows the student has good analytical skills by making clear links between the two-line graphs. There is clear use of data in support of these comments, and it uses comparative language in the statements. This was also assessed at the top of Level 2 and awarded 6 marks.

Level 2 (6 marks)

Limitations of less successful responses

Less successful responses to these questions can have a somewhat disjointed feel to them, lacking a clear sense of the bigger picture. They may also contain errors due to reading the data incorrectly.

10

Figure 3 is in the insert.

Figure 3 shows responses from adults and children about their perceptions of Stanley, a small market town in County Durham.

0 2 . 2 Analyse the information shown in Figure 3. [6 marks]

should be 23%

take this as 4%

this is correct manipulation

correct

correct figures

21% higher than lowest response

correct

this has a piecemeal feel with lots of separate statements; some basic manipulation of differences and averages, top L1

L1

1 0

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GI Jun25/7037/2

The example, from Changing Places, was awarded 3 marks placed at the top of Level 1. There are some comments about the data, but not all of them are accurate. Lower scoring responses have often misread the data being used. The response deals with each element in turn rather than seeing an overview. There is some credit for this response, but only at Level 1.

Level 1 (3 marks)

6- & 9-mark AO1/AO2 questions with stimulus

These questions assess knowledge and understanding when applied to novel situations (resource prompts).

Qualities seen in more successful responses

Section A includes one 6-mark question assessing AO1 and AO2. Section B also includes one 6-mark question assessing AO1 and AO2. In Section C, there are two 9-mark questions, both of which assess AO1 and AO2.

These questions are based on the novel resources, designed to assess students' abilities in how well they can apply their understanding of the specification topic to unfamiliar scenarios. Students should integrate their own knowledge and understanding, with the information presented in the novel material to answer the question.

In both of the 6- and 9-mark questions, AO2 has a greater bearing on the distribution of marks, so the assessment or evaluation is more significant. Students should use their 'own knowledge' (AO1) to support their reasons.

Figure 4a and Figure 4b are in the insert.

Figure 4a shows people in Canary Wharf, London Docklands.

Figure 4b shows a group of American tourists on a sightseeing tour of central London.

0 2 3

Using Figure 4a, Figure 4b and your own knowledge, assess how a person's lived experience affects their sense of place.

[6 marks]

The lived experience of a tourist is very different
AO2 to a local, a lived experience of people may mean
that they have an increased connection and sense of
place, they may have experienced the place from
a different perspective in figure 4a, the people
AO2 look like residents that are working, they may
see London as home and know more about it
compared to the tourists in 4b that may have seen
AO1 London via the Media so they may feel like
they don't belong there. In figure 4a we can
see how people are talking to each other, or
AO2 may work in the same organisation so they
extra space have a sense of AO1 belonging just like
a school where a group of friends and
teachers may feel a sense of understanding
and family compared to external visitors,
AO2 this makes their lived experience much more
positive - this could be the case for tourists
who may see London as the beauty in the world
via social media and news and when
AO2 looking at attraction they may have a positive
connection.

Question 2 continues on the next page

Turn over ►



L2

the candidate does seek to assess how LE affects sense of place using both figures

Q/Jun25/7037/2

This question, from *Changing Places*, requires students to assess how a person's lived experience affects their sense of place. The novel resources are two photographs showing people in Canary Wharf, London Docklands and tourists in central London. The example here makes clear use of both images and assesses how lived experience has shaped the sense of place of the people in the images. The student proposes that the people in figure 4a are local and have a sense of place shaped by the familiarity of people and places around them compared to the tourists in figure 4b who have knowledge of London as a media place. There is both AO1 (media place, the link to how people in a school have familiarity) and AO2 (engagement with the resources and assessment of the concept).

Level 2 (6 marks)

Figure 8a and Figure 8b are in the insert.

Figure 8a shows the percentage of girls completing primary school and fertility rate (the number of births per woman) in selected countries in 1980 and 2010.

Figure 8b is an extract from the website of 'She's the First', an NGO which campaigns to promote improved access to education for girls worldwide.

0 4 . 3

Using Figure 8a, Figure 8b and your own knowledge, assess the view that education is the most significant factor in reducing fertility rates.

[9 marks]

AO2

Education is a very significant factor and plays a very important role in reducing fertility rates, as women become more educated they ~~spend~~ dedicate more time to their career, so children are no longer a priority. In Tanzania the fertility rate of an educated woman is nearly half of a non-educated one, children are no longer a need as

AO1

AO1

women work on their careers and have a stable income, so there is no child replacement births, however many girls are not given the opportunity as seen in figure 8b, under 18 women are married every 2

AO2

seconds, therefore women are seen as the child-bear

AO2

In some cultures, this increases fertility rates. We can see in figure 8a that women who have completed primary education have the lowest

AO2

fertility rates. Finishing primary school enables them to have a strong start to their career and focus on

AO2

growing in the workplace and not just having children, educating women allows them to be

Extra space in healthy relationships and have a

voice, so they are able to decide when it would

Section C: Population and the Environment

25

Do not write outside the box

be best to leave children and this also leads to good family planning ~~which~~. There are other factors which also play a significant role in reducing fertility rates such as availability of contraception, in LIC's contraception is not available as widely leading children being born without any sort of family planning, contraception availability allows planning / discussions as parents may want

Question 4 continues on the next page

focus on their career before having children ~~which~~

Factors also play a significant role in health care

also plays a significant role. good pre-post natal care brings infant mortality rates

Reducing child replacement births in rural communities, in places like Tanzania we can see a high infant mortality rate of 28/1000 and a high fertility rate of 6/1000 as children are required for economic reasons, when women educate themselves children are soon as ^{economic} burdens as they are not needed to provide the woman does that.

In conclusion education plays a significant role as seen in figure 9a. women leaving education early (anything before 801), have an increased fertility rate, ~~for~~ increasing education of girls globally will allow more planning and a steady decrease in fertility rates.

a strong answer; a good combination of ao1 from Tanzania and other potential factors impacting fertility rates; comes to a conclusion - mid L3

Turn over ►



2 5

Q/Jun25/7037/2



The example is a 9-mark question in Section C: Population and the Environment. It does everything required to gain Level 3 marks. The response begins with a clear statement that education is a very significant factor in reducing fertility rates. The student uses their own knowledge with reference to Tanzania (AO1) and factors affecting fertility. There is detailed engagement with the novel resources provided to support their view. In summary, it shows detailed knowledge and understanding of the links between education and fertility rates and presents a coherent view (AO2).

Level 3 (9 marks)

Limitations of less successful responses

Students obtaining Level 1 in these questions often do not address the question posed or lean towards a description of the novel resources.

Figure 4a and Figure 4b are in the insert.

Figure 4a shows people in Canary Wharf, London Docklands.

Figure 4b shows a group of American tourists on a sightseeing tour of central London.

0 2 . 3

Using Figure 4a, Figure 4b and your own knowledge, assess how a person's lived experience affects their sense of place.

[6 marks]

Figure 4a shows people busy this is because due to their lived experience of Canary Wharf being their place of work their sense of place is that it should be somewhere to be busy. A02

Figure 4b shows tourists taking a photo, this is because their lived experience is A01 mostly based on as a media place, as A02 outsiders this means they see London as an exciting place leading to them only a selfie as it is a place they sense A02 they should remember. Extra space

Lived experience does very much affect sense of place for both insiders like those in Canary Wharf and outsiders like the tourists. L1

In the response there is some engagement with both resources (A02), and the student shows some basic knowledge (A01), with reference to insiders and outsiders, but beyond that there is no clear assessment. This response was placed at the top of Level 1 and received 3 marks.

Level 1 (3 marks)

Figure 8a and Figure 8b are in the insert.

Figure 8a shows the percentage of girls completing primary school and fertility rate (the number of births per woman) in selected countries in 1980 and 2010.

Figure 8b is an extract from the website of 'She's the First', an NGO which campaigns to promote improved access to education for girls worldwide.

0 4 . 3

Using Figure 8a, Figure 8b and your own knowledge, assess the view that education is the most significant factor in reducing fertility rates.

[9 marks]

In figure 8a it shows that as the percentage of girls attending full time education increases fertility rate decreases. This clearly shows that it is an important factor in the reduction of fertility rates, however it may not be the most important factor. Fertility rates are not only affected by education but by the demographics of somewhere as well as the economic situation someone finds themselves in. For example in Japan they are struggling with a declining population, one cause of this is the financial strain marriage and kids puts upon the man, this is an element that leads to low fertility rates, conversely in Japan the women are more focussed on their careers and see themselves as self reliant which links to both figures and is one of the main reasons for a decline in fertility rates, suggesting that increased education contributes a reduction in fertility rates.

L2

Question 4 continues on the next page

just level 2

This response to question 04.3 was assessed at low level 2 and gained 4 marks. There is only a basic link to Figure 8a and no reference to Figure 8b. There is some straightforward assessment (AO2), and some evidence of the student's own knowledge, linked to the Japanese economy and society, but the response lacks the depth and detail required for higher level marks.

Level 2 (4 marks)

9-mark AO1/AO2 questions

These questions assess knowledge and understanding without the use of resources.

Qualities seen in more successful responses

The 9-mark questions, without the use of resources, test students' subject knowledge and application in the optional themes. Responses should balance knowledge (AO1) with evaluation and assessment (AO2) to answer the question posed.

Level 3 answers demonstrate detailed knowledge and understanding, make clear connections and views are well supported with evidence and examples.

0 3 4 Assess the relative importance of factors contributing to a sustainable city. [9 marks]

~~Waste vs Energy~~ ~~People development~~
~~People development~~ ~~Most imp~~ ~~no plan~~ ~~w out~~ ~~it~~ ~~At least living wage~~

Sustainable urban drainage^(SUDS), Sustainable waste Management^(SWM) and
Sustainable energy production^(SEP) are crucial factors in contributing to a
Sustainable City. SUDS involves the use of green roofs, swales,
or channel dredging to increase water, amenity, biodiversity, quality and quantity.
For example the 400,000 wetland plants planted along the river Lea. SWM as
seen in Amsterdam involves incineration to reduce waste volume by 90%
and recycling of 64% of the AEB plants 1.1 million tonnes per year
in waste. Finally Sustainable energy production such as the 1 million
MWh per year produced by waste burning in Amsterdam. All three
factors have significant contributions to creating a more sustainable
city.

However, all 3 are dependent on a city's economic
position. SUDS is expensive even for small scale of change and
arguably has the smallest impact on sustainability. Waste
Management costs over 250 million per year in Amsterdam

Extra space and incineration still releases 500,000 tonnes of CO₂ annually.
Sustainable energy production is equally expensive to implement
however has the longest lasting impact.

A02

detailed and
succinct
answer to the
question

Due to the longevity of Sustainable Urban power and energy
production it is undeniably the most important contributing factor
to a sustainable city. Despite policies such as the London Living Wage
and affordable housing in Stratford helping make London more sustainable.

A02

L3

With the increase in Mineral Scarcity and global growing pressures over
~~energy production~~, it is clear energy production in the future will be key for sustainable
Climate Change

A02

CHS

In this example, assessing Contemporary Urban Environments, the question 'assess the relative importance of factors contributing to a sustainable city' required students to identify key factors—economic, social, environmental, and technological—and evaluate their significance and interrelationships. Level 3 responses show knowledge of a range of factors, assess their importance and do so with respect to examples.

This response begins by identifying some key factors for sustainable cities (sustainable urban drainage, waste management and energy production). These factors are described with links to examples for support (AO1) and their importance and relative importance are considered (AO2). The answer is succinct and shows both detailed subject knowledge and good exam technique.

The response shows detailed AO1 knowledge. This was clearly a Level 3 response – it was assessed as being in the middle of Level 3 and awarded 8 marks. With a little more clarity in the introductory section on the concept of sustainable cities it would have received full marks.

Level 3 (8 marks)

Limitations of less successful responses

Responses that did not score well either lacked knowledge and understanding of the area of the specification being assessed, for example - sustainable cities, health factors at a local scale or mineral resource security - or a failed to really address the commands of the question (e.g. assess, to what extent).

0 4 . 4

Assess the relative importance of factors that have a negative impact on health in a local area that you have studied.

[9 marks]

One factor in Glasgow leading to negative impacts on health is drug use. Glasgow has the highest number of drug related deaths in Scotland, corresponding to a 73 year life expectancy, far below the UK average.

Another factor is absence of green spaces on mental health. Areas with no green areas like Drumchapel have a life expectancy of 67 versus areas with greenery like Kelvingrove which has a life expectancy of 80.

Finally, 'the Glasgow effect' suggests a decrease in health.

In this example, from the Environment and Population topic, the question requires an understanding of the relative importance of factors having a negative impact on health in a local area. This response does refer to Glasgow, the area studied, and shows some knowledge and understanding of life expectancy in different parts of Glasgow, as well as reference to health-related factors of drug use and absence of green spaces. However, whilst AO1 is evidenced, AO2 is partial. This response was assessed as being in mid-Level 1 and was given 2 marks.

Level 1 (2 marks)

20-mark questions

These questions assess knowledge, understanding and application: constructing arguments and drawing conclusions.

Qualities seen in more successful responses

The 20-mark questions assess students' deeper knowledge of the specification. Responses should be supported with relevant case studies or examples to demonstrate place knowledge. The generic level descriptors and strands within the marking guidance are used to assess student responses. Examiners are looking for a balance of geographical knowledge and understanding (AO1) and application of knowledge and understanding (AO2) to answer the question.

Responses should have a clear structure and follow a clear and sustained line of reasoning. The extended responses should come to a clear conclusion based on preceding evidence that summarises the student's answer to the question.

Given the time and demands of the paper responses should strike a balance between demonstrating detailed knowledge and understanding, whilst also being focused and succinct within the available answer space.

The following examples demonstrate good responses from the core topics that can be used with students to help hone their skills in answering extended questions.

0 1 4

'Unequal flows of technology are the main cause of inequalities in patterns of consumption around the world.'

Critically assess the extent to which you agree with this statement.

trading blocks
trade duties
inequality [20 marks]

tech
↓
poverty
↓
inequality

Unequal flows of technology lead to unequal consumption due to economic inequality. AO2
 Unequal flows of tech. of Africa today has no mobile signal, this has been called the 'great internet divide' this creates economic inequality as people in Africa can't access the internet, this means they can't access new information on techniques on how to develop new products or work more efficiently, leading to African business being outcompeted by transnational companies who have this information. AO1
 For example in Ethiopia ~~these farmers~~ 80% of rose farmers still use techniques and machinery from the 1970s, this leads to companies like 'Afriland' taking their business as they can offer the same product at lower cost due to more efficient technology and methods. AO2
 This leads to inequality in consumption as it leads people without access to technology poorer, this means they can't afford to consume ~~from large~~ more expensive AO2
 imported goods ^{like phones} whilst countries like

The Netherlands, where Afifora is based, can afford to consume from wherever they ^{the main} ~~source~~. Therefore through ~~praval~~ inequality, unequal flow of technology cause inequality in consumption.* (AO2)

Differential market access causes inequality of patterns of consumption through creation of trade blocs. (AO1) In Europe roughly 30 countries, those in the EU and those in the Shengen agreement make up a single market, this means there are no trade barriers between them, this leads to high consumption (AO1) of European like - Benelux or location close to goods. (AO2) As no trade barriers mean it is cheaper to consume many goods both those from abroad and those ~~for~~ domestically, as it decreases costs and in turn prices for countries (AO1) inside the bloc as there are no tariffs. However for countries outside the trading agreement consumption will be of (AO2) ~~decrease~~ high quality, high cost goods as well as of the range of goods as well decrease (AO2) this is because the trade bloc will divert trade, ~~this~~ this is because they have agreements like the EU are customs unions, this is where they ~~as~~ have a unified (AO1)

Turn over ▶

tariff rate on countries outside their agreement. This makes it very expensive to trade with countries inside the trade bloc, this particularly impacted North (AO1) African countries who ~~are~~ ^{are} cut off on access to European markets, this led to European goods being consumed much less in North Africa. Therefore trade blocs ~~lead~~ ^{block} to unequal flows of consumption by ~~the~~ ^{the} certain areas from trading (AO2)

continued

Question number	Additional page, if required. Write the question numbers in the left-hand margin.
1.4	* This gets worse in the long run as the difference in wealth of countries widens, this is because it creates a positive feedback loop as countries take out debts so difficult to trade but to get technology but this makes them poorer as they have to pay high interest loans eg Haiti, this leads to the gap in consumption of expensive imported goods widening. Overall currently the largest factor is different market access however in the long run the poverty trap created by unequal technology will lead to even greater differences in consumption, as richer nations get richer and consume more, whilst poor ones stay poor.

Some detailed AO1 with detailed and subtle AO2, leading to sound and well-supported

This example focussed on Global Systems and Global Governance. It required students to critically assess the extent to which they agreed with the statement 'unequal flows of technology are the main causes of inequalities in patterns of consumption around the world'.

The approach to marking the 20-mark questions is to consider the complete response and decide which of the four levels of response is the best match. The final mark is then decided by 'fine tuning' up or down within the range of marks for the level. In this example, Level 4 fits the response. It has a nice balance of opinions (AO2) and views to respond to the question, backed up with relevant geographical evidence (AO1). The student discusses aspects of technology (in agriculture) and links economic development to inequalities in consumption. It goes on to consider another factor – trade blocs – and their importance in inequalities of consumption. It is well-written and finishes with a clear conclusion. It shows awareness of spatial and temporal changes. Having decided on Level 4, the final mark was agreed as in the middle of the mark range as some of the AO1 points could have been more specific, rather than making general points about 'Africa'. It was awarded 18 marks.

Level 4 (18 marks)

0 2 . 4

'Shifting flows of investment can have significant impacts on the character of place.'

With reference to the distant place you have studied, to what extent do you agree with this statement?

[20 marks]

AO1

AO2

Shoreditch (in the London Borough of Hackney) has experienced differing flows of investment. In recent years, levels of investment have been very high. However, historically after post-industrialisation, flows of investment were significantly lower in Shoreditch thus resulting in a drastically different place character than today.

AO1

AO1

AO1

AO2

AO1

AO2

Historically, before the 20th Century, Shoreditch received high levels of investment as an industrial hub in the 1800s. Immigration of skilled frequent migrants along with private investment resulted in a prosperous manufacturing industry emerging in Shoreditch. The area specialised in furniture and textile ~~manufacturing~~ ^{manufacture}. These developments ~~into~~ from investment gave Shoreditch the character of a vibrant economic hub in which private enterprise was prospering. In addition, its proximity to the regents canal and other transport links make it a commercially important district within London. Overall high levels of investment into manufacturing in Shoreditch gave it a positive character during the height of industrial Britain.

outside
box

AO1

On the other hand, in the 20th Century, Shoreditch experienced a steep decline in investment, ultimately creating a negative place character of deprivation. As Britain ~~ended~~ transitioned to ~~the~~ post-industrial nation after the second world war, Shoreditch suffered from

AO2

AO1

neglect both from private companies and the central government. Bombing during the Blitz ~~has~~ greatly

ng
stment

damaged the built environment of Shoreditch with over 200 bombs being recorded to have hit Shoreditch alone. This

AO1

resulted in damage to manufacturing facilities as well as a steep decline in living standards. Shoreditch became

AO1

AO2

an area experiencing very high unemployment rates, poverty and crime as a result leading to a threatening and

deprived character of place. Until the gentrification of Shoreditch in the 1980s, a lack of investment due

AO2

to Britain's post-industrial status meant that Shoreditch became a place synonymous with poverty,

Extra space Crime and general decline.

AO2

Finally, substantial levels of investment into Shoreditch post-gentrification has led to a radically improved character of place in the present day. Gentrification

AO1

initially occurred in Shoreditch as a result of the arts scene, used as a form of escapism by local residents. Wealthier individuals began to move to

AO1

Shoreditch eventually leading to the development of

Turn over ►



Commerciality in Shoreditch such as in Brick Lane and Boopark. In 2010, David Cameron (Prime Minister) prompted large flows of investment into Shoreditch as he named it 'the Silicon roundabout' in a speech delivered there. Despite not investing in Shoreditch with government funds, a huge amount of private investment followed with companies such as insurance giant Aviva choosing to base their offices there. Cameron's designation of Shoreditch as a potential economic hub has added an entrepreneurial element to Shoreditch's character. The presence of poverty attracted investment as a result of the gritty place character resulting from historical decline (continued in extra space)

2.4 Overall, high levels of investment into Shoreditch in the 21st Century has resulted in a character rooted in cultural vibrancy and private enterprise.

In conclusion, shifting flows of investment undeniably have a very major impact on place character. Shoreditch exemplifies this with its receipt of substantial investment during the 21st Century entirely transforming its character from the 20th Century. Intervention from

39

Question number	Additional page, if required. Write the question numbers in the left-hand margin
AO2	Central government provided a massive boost to the commonly perceived modern and trendy character of Shoreditch

This example focusses on Changing Places. In question 02.4, students were directed to use the distant place they had studied to say to what extent they agreed with the statement that 'shifting flows of investment can have significant impacts on the character of places.'

The response identifies the distant place studied, Shoreditch in London and gives some valid details on historical changes and flows of investment from migration and private investment and how these link to the vibrant character of Shoreditch. The changes that occurred when private and public investment were withdrawn in the transition to a post-industrial economy post-World War 2 are then covered. It finishes the response with discussion of more recent commercial and new industrial growth and how this links to the character of the district. It also has a clear conclusion that summarises the key points. The response was awarded 20 marks at the top of Level 4.

Level 4 (20 marks)

Limitations of less successful responses

Less successful responses can be attributed to a number of factors. Students may have misread the question or sometimes drifted away from the question focus. In some responses they get rather mixed up with their arguments, threads become intertwined, and clarity is lost. Lower scoring responses often arise from those students determined to include learned case study material in their answers whether it is relevant or not. Using case studies appropriately is a key skill and a feature of higher scoring responses.

0 1 4 'Unequal flows of technology are the main cause of inequalities in patterns of consumption around the world.'

Critically assess the extent to which you agree with this statement. [20 marks]

AO2

I agree with the statement of unequal technological flows causing inequality in global consumption due to the damage this has to global flows of information. For example in the vast banana producing LDC of Ecuador, they lack technological advancement thus lack global flows of information. This leads to them having lacking knowledge of containerism, for example that would aid their global banana sales and cheap transport. So, lacking technology limits Ecuador's consumption of flows of information limiting them from dealing in a low cost way.

very simplistic view

AO2

Furthermore, a lack of flows of technology exacerbates inequality and this is due to a lack of access to capital equipment that may boost the GDP rate of nations. For example in Ecuador capital may help the people dam the TNC's like 'el monte' and obtain greater profits from the number 1 global fruit at \$10bn annual revenue and

Do not write outside box

[A01]

\$13.6bn trade export value in 2018. Therefore, unequal laws & technology caused inequality in Ecuador as it reduced domestic consumption via capital machinery technology.?

links unclear

on the other hand, differential ^{and special} access to markets allows a reduction in the need for technological advancement in order to specialise in production on a global scale.

This is done by the WTO to aid fair trade and ^{exchange} ~~allow~~ stability globally, with or without technology. Shown via the fair trade rise in workers pay from 4% to 14% & profit per banana. Therefore, differential and special access to markets ^{accepted} by the WTO reduce inequality despite unequal laws & technology. [A02]

[A01]

Also, TNC'S like Apple cause inequality in consumption, greater than ^{extra space} unequal laws & technology. This

~~is~~ is shown via inequality in ~~wages~~ ^{and} economic consumption & workers exploited by Apple's good production

[A01]

outsourced to Foxconn, China. Therefore, via the only 20% & income staying in the EME & China as the global TNC Apple sell 44% & their goods ~~to~~ in their domestic nations & the US, inequality is

Turn over ▶

caused by Apple via financial consumption in LDC'S.

To conclude, Despite Apple's financial inequality and ~~unequal~~ special and differential trade treatment resulting in reduced inequality despite ~~it~~ not having ~~it~~ great ~~draws~~ & Technology, so overall unequal ~~draws~~ & Technology is the main cause of global inequality in the consumption & income ~~globally~~ globally, like in Ecuador, leading to impacted

AO2

End of Section A

links to technology / consumption / inequality are not clear or well-expressed. All rather tentative

L2

continues p38.

partial response - tries to use AO1 knowledge of Ecuador but links between aspects of globalisation are not well understood. Mid L2, fine tuned down.

Question number	Additional page, if required. Write the question numbers in the left-hand margin.
Q1.4)	goods produced impacting the Ecuador financial consumption via specialisation and global income consumption globally as the entire technology aids the draws & goods via containerism do example. 📍

The response from Q1.4 is very keen to introduce a learned case study of the banana industry in Ecuador but offers some quite simplistic and unsubstantiated views. There are references to some relevant knowledge of factors such as the role of the WTO and the influence of TNCs such as Apple, but the response does not form a convincing argument. There is evidence of some relevant knowledge and understanding of concepts and processes in global systems and some partial knowledge of places. It fits a Level 2 descriptor very well and was awarded 7 marks.

Level 2 (7 marks)

0 2 . 4

→ Jobs, fishermen → leather
→ Dharavi

'Shifting flows of investment can have significant impacts on the character of place.'

With reference to the distant place you have studied, to what extent do you agree with this statement?

[20 marks]

Whilst shifting flows of investment can have a great impact on the character of place other ^{exogenous} aspects such as migration and tourism may have a more of an impact. [AO2]

flows of investment include factors such as actual external investment into a place but also endogenous factors such as the shift in work type within Dharavi. Dharavi is one of the largest slums in the world and is home to 1 million people. Previously they were their main source of income was through fishing until the area was drained now the industry with greatest turnover is leather goods which are sold on Dharavi market.com. The slum has 1 billion turnover/year due to 5000 separate business entities is [AO1]



a form of investment and this is great shift from previous times. The investment from buyers allows for more money to be redirected into the town and their businesses, this impacts the character of Otterham by changing the way it is perceived by its residents. Its character ~~now~~ will change from one of pessimism to optimism and excitement at future economic prospects.

Alternatively migration may impact character of place to a greater degree as all the businesses now come from the migration of people from Gujarat and Tamil. This highlights the potential that investment and migration are codependent as increasing are due to migration, however these prospects may lead to more migration, which would have a great effect on the character of Otterham.

Overall when investment levels change and shift it ultimately can't have any other impact than to change the character of place but there are other groups of people also play a significant role.

Makes reference to different factors as well as investment to show change in the character of place. Some clear points made and answers the question for L3.

While this example is not a particularly poor response, it stands out in contrast to the response that received 20 marks. It has a nice opening paragraph that sets up the answer and there is clear reference to the distant place studied, Dharavi in India. There is some reference to investments and the changing economy, so the student is answering the question. However, some of the links to character are not fully developed. There are elements of a clear response, so this was assessed at low Level 3 and awarded 11 marks.

Level 3 (11 marks)

Synoptic question

These questions assess knowledge and understanding applied to links across specification content.

The synoptic question appears once each series in either Paper 1 or Paper 2 and makes links across specification content. In the 2025 series, the synoptic question appeared in the 20-mark questions in Section C for Paper 2.

Depending on the optional topic studied, students were required to link aspects of the changing carbon cycle to one of the following themes:

- Contemporary urban environments – managing environmental problems in urban areas.
- Population and the environment – causes of migration.
- Resource security – management of energy supply and/or consumption.

Qualities seen in more successful responses

The more successful responses to this question showed knowledge and understanding of changes within the carbon cycle, for example, such as increased atmospheric CO₂ resulting from fossil fuel combustion, leading to climate change and rising sea level. These changes were connected to the key aspect of the optional topic studied in each question with an evaluation of the question statement. Good responses made effective use of case studies to illustrate points made. Typically, they would have a clear structure and an evaluative conclusion.

Section C: Contemporary Urban Environments

0 3 . 5

'Impacts of changes to the carbon cycle will make managing environmental problems in urban areas more difficult.'

To what extent do you agree with this statement?

[20 marks]

PLAN: ~~Italy~~ ~~Urban Heat Island~~ ~~Permafrost~~ ~~Sea level rise 1880-24cm~~
 - pollution 1°C per 0-4 exchange combustion ~~basin~~ ~~120 billion~~
 - SUDS helps Manage Environmentally + LDC less able to respond
 - ULEZ + ~~expensive~~ + LAMATA Overall SUDS + ULEZ
 are harder Management even
 the they limit.

Changes to the Carbon cycle such as the melting of
 [AO1] Sea Ice and permafrost, as well as the transfer of carbon
 from the Slow to Fast cycle via extraction and Combustion will
 make Managing environmental issues in urban areas more difficult. [AO2]

[AO1] However this difficulty can be alleviated by sustainable urban
 Drainage Systems and cleaner air policies and legislation.

[AO1] 12.8% of Arctic Sea Ice melts per decade reducing its
 capacity to store Carbon in the Cryosphere by 30%.

Turn over ►

In addition permafrost is 294 times more potent than carbon and is released from permafrost melting. Not only does ice melting raise global sea levels as seen by a 24cm rise since 1992 globally, it also creates a positive feedback loop by building up the ozone layer. Managing environmental issues such as flooding in urban areas will become significantly more difficult. In Lagos, 120 billion dollars worth of infrastructure is at risk due to sea level rise. Additionally in HICs such as London the urban heat island effect increases the frequency of thunderstorms, straining drainage systems due to cities high surface runoff and short lag time. An issue clearly exacerbated by the increase of global temperatures due to changing carbon cycles. *

Further more anthropogenic factors contributing to the changing carbon cycle equally make managing environmental issues in urban areas more difficult as humans extract fossil fuels and

By increasing the area at risk of flooding and lengthening the duration of the risk period it is clear changes to the carbon cycle make environmental issues in urban areas more difficult to manage.

combust them in transport this releases emissions. These CO₂ emissions can lead to PM2.5 or photochemical smog forming. In London 49% of CO₂ emissions are released by diesel vehicles, and in Lagos PM2.5 readings of 217 exceed the WHO's recommendation of 54. As carbon is being transferred from the lithosphere to the atmosphere it severely increases air pollution and can lead to exacerbated respiratory issues amongst humans. In London 4000, and in Lagos 11,200, premature deaths are due to air pollution, underlining that changes to the carbon cycle make environmental issues harder to manage.

Extra space by increasing the number of those effected and the scale of the issue.

However, it can be contested changes to the carbon cycle don't make environmental issues harder to manage in urban areas as the introduction of sustainable urban drainage systems such as the 50 million pound river Lea restoration in London can help to alleviate the issue of flooding. A project put in place prior to growing concerns over carbon cycles, which expands river capacity and reduces flood risk with little adjustment needed as carbon cycles change, creating a strong case that environmental issues in urban areas aren't made harder to manage by changes to the carbon cycle. However in LICs such as Lagos they cannot afford the luxuries of flood management to the same extent so it is not applicable to all nations.

Moreover, legislation put in place to reduce emissions will mitigate and potentially in the future eradicate the worsening environmental issues in urban areas. Policies such as ULEZ in London has reduced petrol cars in the capital 47% and lowered roadside NO₂ emissions 62%. In Lagos LAMATA, an integrated transport system carries on its buses alone 25% of commuters, 200,000 people daily, reducing emissions 13%. This displays how regulations can limit environmental issues impact by lowering CO₂ in the atmosphere which prevents issues getting larger in urban areas.

! See Extra Page Sat back for Conclusion 3.5!

Question number	Additional page, if required. Write the question numbers in the left-hand margin.
3.5	It is undeniable impacts of changes to the carbon cycle make management of environmental issues in urban areas harder. AO1 Whilst efforts made to manage these impacts directly or reduce them by altering behaviours are successful to an extent. AO1 It is irrefutable that the need for adaption in flood management or air pollution schemes shows developing and increasing issues that are undoubtedly harder to manage. with manage AO2 Ease of management significantly depends on a nation's fiscal ability to combat the problem. With HICs able to invest in infrastructure or holistic management, LICs have to rely on what they have. which in the case of Lagos is drainage infrastructure from the 1970s built for a population of 3 million. AO2

detailed response that uses some valid examples and scenarios. Level 4 - understands the topic well and presents a good case with a detailed conclusion

Contemporary Urban Environments

This is a strong response to question 03.5 demonstrating a good understanding of contemporary urban environments. The question required students to present their view on the extent to which impacts of changes to the carbon cycle would make managing environmental problems in urban areas more difficult. This student has taken some time to write a brief plan and this is often seen with good responses.

The student then demonstrates knowledge and understanding relating to impacts of changes in the carbon cycle such as rising sea levels, melting permafrost and increased air pollution. These impacts are considered in relation to the urban environmental problems to which they can lead. Examples are drawn from London and Lagos. The response is not perfect, there are some errors and misunderstandings, but this illustrates the positive ethos of marking where credit is given for good geography rather than negatively marking by focusing on errors. The student makes effective synoptic links between the carbon cycle and urban environments. This response was credited in Level 4 and given the full 20 marks.

Level 4 (20 marks)

Section C: Population and The Environment

0 4 . 5

'Impacts of changes to the carbon cycle will become an increasingly important cause of migration in the future.'

To what extent do you agree with this statement?

[20 marks]

Changes to the carbon cycle, mostly through climate change will greatly impact future migration. Climate change will have varying effects globally, mostly making many areas submerged, desertified and economically not productive. However it could be argued that implications will be limited.

first impact

It could be argued that climate change will become a cause of migration. Firstly, a rise in global sea levels will render many low lying countries dangerous. For example, the Netherlands is at profound risk with 80% of its area expected to submerge according to projections by 2100. This will result in lots of emigration from coastal and low lying countries into those at a higher elevation. Furthermore, increases in global temperatures will alter precipitation patterns, thus disrupting the water cycle and rendering large areas of agricultural

second impact

Land unfarmable. This will see large levels of economic emigration from countries negatively affected such as in South America due to the need to cultivate Maize (which requires large areas of land). Disruption to global agriculture will result in immigration to countries like Canada and regions like Central Asia which will most likely benefit from climate change. Overall, changes to the carbon cycle will result in sea level rise and destruction of farmland making it likely to be a significant push factor for vulnerable countries.

any more outside box

On the other hand, it could be argued that these impacts will not be a major cause of migration due to the growth of sustainable methods. For example, the green revolution has resulted in greatly improved agricultural yields along with a greater efficiency due to technologies like hydroponics. Practised action in LICs such as terraced fields has suggested that Extra space Communities will adapt, both in this case reducing the extent of migration caused (particularly emigration from vulnerable countries). Advances in rain water harvesting amongst local tribes such as the Bedouin in the Badia desert has resulted in the restoration of desertified land. According to

thinkers like Esther Boserup and Julian Simon, humans will inevitably come up with ways to obtain and find new resources by virtue of inherent innovation. This theory would suggest that this innovation would neutralise the reduction in resources and thus negate possible push factors, meaning migration is limited. Overall, impacts from climate change will likely be negated and adapted to according to geographers like Boserup suggesting that its impact on migration may be not major.

In conclusion, the statement is mostly true. Although many impacts can be negated by sustainable practices and ~~new~~ boserupian innovation, (continued on back)

End of Question 4

page 39

Do not write outside the box

AO2

developing more complex overall geographical ideas

48

L4-5

AO2

Climate change will inevitably render many places difficult to live in, this providing a plethora of push factors inevitably leading to emigration. However, outside of the most at risk areas, impacts of changes to the carbon cycle will not be a much larger cause of immigration as present day push and pull factors, particularly in the long term if borescution theory prevails.

L4

a well written essay here with detailed and well thought through geographical ideas; detailed ao1 and complex ao2 thoughtful conclusion that reflects the essay

Population and The Environment

This response links the impacts of changes to the carbon cycle to causes of migration. It has an assertive opening statement in the introduction. The response then goes on to make links between climate change, rising sea levels and migration from low lying and coastal communities such as The Netherlands. It connects changing rainfall patterns to possible impacts on agriculture and the consequences regarding migration.

The student does offer an alternative perspective, which is not necessary, but credited. They show good synoptic thinking by integrating geographical theory into the response before finishing with a clear conclusion. This was also assessed as a Level 4 response as it is detailed with highly relevant and appropriate knowledge. It was given 20 marks.

Level 4 (20 marks)

Section C: Resource Security

0 5 . 5

'Impacts of changes to the carbon cycle will cause significant challenges for the management of energy supply and/or energy consumption.'

To what extent do you agree with this statement? $5 \times 4 = 20$

3:57 - 4:25 stop

4:25 stop

[20 marks]

(AO1)

One key factor that is causing changes to the carbon cycle is ~~global warming~~ the enhanced greenhouse effect. Factors like the burning of fossil fuels (combustion)

(AO1)

and deforestation is causing more carbon to be released into the atmosphere. More carbon + greenhouse gases in the atmosphere cause more heat to become trapped in the

(AO1)

atmosphere, as less ~~is~~ is reflected off the earth's surface. This increase of carbon in the atmosphere due to human activity is the enhanced greenhouse effect, which is causing global warming.

(AO2)

Global warming will cause significant challenges to energy consumption, as it will cause a large increase

(AO1)

in the demand for air-conditioning. For example, ~~in~~ Saudi Arabia is the world's ~~largest~~ ^{6th} largest oil exporter + producer, as they have the 2nd largest oil reserves in

4:22
conc

(AO1)

the world - estimated at 260 billion tonnes. Due to Saudi Arabia's high supply of oil, lots of it is used for electricity, and 70% of Saudi Arabia's electricity is used

(AO1)

for air-conditioning due to its already hot + dry climate (avg temp of 40°C). The demand for air conditioning is estimated to triple in Saudi Arabia by 2050, and

(AO1)

usage is already increasing at 7% per year. This suggests how severe this ~~an~~ change in the carbon cycle will be on energy consumption, as many other countries such as the UK may have to invest in AC due to the increasing temp + demand. (AO2)

clear focus here on question

not really answering the question.

However, another key challenge with managing energy supply is the environmental (env) impact & energy extraction can have. In Nigeria, 5 major oil companies export & extract copper from the area of the Niger Delta, particularly Shell. But this extraction has caused extreme damage to the env. Since production started, over 7,000 oil spills have occurred, causing over 400,000 barrels of oil to be released into the water, contaminating it. This has caused severe damage to wildlife, as fish stocks have reduced, but also damage to humans, as the ~~rate~~ mortality rate for infants is 2x higher in

AO1

AO1

AO1

Extra space Nigeria's mothers were ~~pregnant~~ near/exposed to an oil spill while pregnant.

Overall, changes to the carbon cycle will ~~have a larger~~ cause more challenges to energy consumption + supply + demand in the long term, but environmental ^{impacts} ~~challenges~~ are a current key challenge in management ~~at this~~ of how our energy is supplied.

AO2

Does answer the Q - initially re changes to carbon cycle, Saudi Arabia... and then consider and alternative environmental issue linked to energy supply. Level 3.

Resource Security

Question 05.5 required students to consider the extent to which impacts of changes to the carbon cycle will cause significant challenges for the management of energy supply and/or energy consumption. This example was credited at mid-Level 3 and awarded 13 marks. It begins by outlining changes to the carbon cycle linked to the enhanced greenhouse effect. It then goes on to explain how global warming will cause significant challenges to energy consumption with a focus on the demand for air conditioning in Saudi Arabia. It has some precise use of facts and figures in support (AO1). The second part of the answer linked to Nigeria is not fully relevant but there are some links to energy supply.

Level 3 (13 marks)

Limitations of less successful responses

Some of the less successful responses to the synoptic question were not well-balanced in terms of the content from both areas of the specification. Some lack focus and there is a skill in crafting relatively concise answers that deal with the question directly whilst still showing some depth of knowledge and understanding.

Section C: Contemporary Urban Environments

03.5 'Impacts of changes to the carbon cycle will make managing environmental problems in urban areas more difficult.'

$+ = \text{psi} = \text{P} \cdot \frac{1}{\text{area}}$ in urban areas more difficult.
 $- = \text{for not for no (any)}$
 $- = \text{To what extent do you agree with this statement?}$
 $\uparrow \text{CO}_2 =$
 $\uparrow \text{search}$
 understanding I agree in agreement

[20 marks]

by ~~I agree~~ In agreement to the Statement that that ~~more carbon~~ there is a positive correlation between carbon and environmental problems in urban areas, an increase in sea levels eustatically that this provides. A rise in sea levels due to carbon dioxide trapping heat melting ice caps, in a positive feedback loop ~~leads to~~ means the displacement of people's livelihoods, thus they may move to London, ~~to seek~~ or Alpha++ City to seek work. This leads to a ~~this~~ increase in population density, adding to the 8.9 million population of London. Therefore, a high population density requires governmental aid in building homes to reduce homelessness, rather than environmental pitches like the ^{and more green} sustenance of green spaces; ^{in street level} ~~leading to~~ ^{AO2} ~~this~~ This shows how increased carbon leads to greater difficulty in managing environmental problems. ^{AO2}

Furthermore, an increase in carbon in the atmosphere further increases the urban heat island effect; ~~more~~ This effect makes urban up to 10°C hotter than its rural surroundings. This leads to conditions too hot for vegetation to survive. This further adds to carbon dioxide in the atmosphere via the decomposition of a carbon sink. Therefore, further increasing the enhanced greenhouse gas effect via increased atmospheric carbon, exacerbating change away from dynamic equilibrium in a positive feedback loop. overall showing how increased atmospheric carbon makes managing environmental problems more difficult.

on the other hand, heightened climate change occurring due to rise in atmospheric carbon outputs and inputs lead to increased global cooperation at a seismic level.

Extra space This is shown via the Paris Agreement in 2015 aiming to limit global warming to well below 2°C above pre-industrial levels, leading to ULEZ implementation to reduce carbon emissions via driving in London since 2019, charging $\pounds 12.50$ a day to drive in London. This is done due to rise in carbon causing rising ^{severity} into reducing carbon emissions. Therefore, aid cooperation between people and governments in reducing CO_2 emissions, showing how rising carbon inputs ~~at outputs~~ may not make managing environmental problems in urban areas more difficult. ^{AO2}

Furthermore, an increase in the ~~at~~ stored carbon in the ^{medium/long} term atmosphere store overall leads to a negative feedback process, ~~giving~~ bringing the system back to dynamic equilibrium. This is because more ~~at~~ atmospheric CO_2 being available for carbon sequestration via photosynthesis, that the process of

Question number	Additional page, if required. Write the question numbers in the left-hand margin.
03.5)	absorbs CO ₂ as plant food, this This leads to
A01	increased health and the size & plants species,
	leading to more and more carbon sequestered,
	reducing atmospheric CO ₂ . Therefore, due to this
	negative feedback cycle increasing stored
A02	atmospheric carbon may not make managing
	environmental problems in urban areas more difficult.
	As shown via the planting of 4000 tree plantings
	in Stratford as part of the 2008 Olympic Park
	regeneration scheme A01
	To conclude, despite increasing
	population density in urban areas by sea level
	rise and the fact 87% of the global population
A01	being expected to live in urban areas by 2050,
	increases in carbon in the carbon cycle does not
	lead directly lead to difficulty in managing
	environmental problems. This is shown in the
A02	urban area of London via the increased
	action and Sincerity of global action due
	to increased risks of irreversible change due to
	the global warming. Shown via the Paris
	Agreement 2015 and the report to UNEP
	2019, and the negative feedback loop
	via carbon sequestration leading to
	this outcome & dismissing the constant

Question number	Additional page, if required. Write the question numbers in the left-hand margin.
AO2	Positive correlation between increasing stored carbon in the carbon cycle, ^{atmos} leading to increased difficulty in fighting in managing environmental problems in urban areas areas. In the future, if CO₂ levels continue to rise enhancing the greenhouse gas effect the difficulty may rise accordingly...

L2 - attempts to answer the question with reference to London - some valid AO1 points but argument is not convincing. Partial. Top L2

Contemporary Urban Environments

This response to question 03.5 begins by outlining some relevant knowledge and understanding of the changes to the carbon cycle and links this to urban challenges in London associated with a rising population. There is consideration of the environmental problems linked with the urban heat island, but the response then goes on and considers many aspects of carbon feedback cycles. It is very long and lacks clear focus. It was assessed as a Level 2 response and awarded 8 marks.

Level 2 (8 marks)

Section C: Population and The Environment

0 4 . 5 'Impacts of changes to the carbon cycle will become an increasingly important cause of migration in the future.'

To what extent do you agree with this statement?

[20 marks]

~~Even~~ whilst the carbon cycle changing will have a large impact on migration, it is more logical to look at all the aspects that have an influence. [A02]

Changes in the carbon cycle are occurring now more than ever due to climate change and increased fossil fuel emissions over time. [A01]

We have gone over our carbon budget limit and now the changes to the environment are unstoppable. Some impacts the changes have are increasing global warming and ozone depletion which will start to make the ~~hot~~ hot countries even hotter and potentially unlivable in the future. This will inevitably [A01]

Turn over ►



lead to high amounts of migration AO2
~~to move temperate cooler climates~~
~~away from the equator~~ with
people needing to move to temperate
cooler climates ~~away from the~~
~~or~~ to ensure survival. ~~whilst~~
whilst this is a more long term
reason for migration, if we do not
act fast then it will become a short
term consequence - with projected
levels suggesting this may occur AO2
sooner than expected.

Other impacts that may occur
is food and water shortages AO1
due to the increased heat ~~and~~
which may dry up freshwater
and cause crops to die/wither.
Factors such as these ~~play~~
will play a massive role in AO2
Extra space migration, ~~as~~ less developed
countries will not longer be
able to sustain themselves meaning
migration to HIC's will become
~~increasingly~~ increasingly
more prevalent due to the search

for necessary produce.

Overall changes in the carbon cycle will have large scale impacts in the future and these impacts may become so detrimental that migration is not a want but a need to survive.

A01

L2

Partial response with attempts to link migration to changes in the carbon cycle

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Population and The Environment

The response to question 04.5 shown below starts with an opinion (A02), but the introduction is not particularly clear in terms of where the answer is going. There is some knowledge and understanding of the changing carbon budget and links to migration however there is no particular place focus. It refers to the impact on changing climate on agriculture and the links to migration, but apart from a reference to less developed countries there are no examples used. It finishes with a conclusion that rounds off the response. Overall, this was assessed as Level 2 and awarded 7 marks.

Level 2 (7 marks)

Support and guidance

Our reports on the exams are part of a suite of support we offer to enhance your understanding of our assessments and your students' performance.

Mark ranges and award of grades

Grade boundaries and cumulative percentage grades are available on our [website](#).

Data Insights

Use our Data Insights analysis tool to create and customise different reports to help understand your students' performance.

Data Insights is our free online service for you to gain a detailed insight into your students' results. You can:

- analyse your students' scores for each exam question
- identify topics, skills and types of question where students may need further support
- compare your students' performance with those of other classes and with students in other AQA schools nationally.

For more information on Data Insights, log into Centre Services via your '[My AQA](#)' account.

Professional development

Attend one of our [courses](#) where you can review example responses from students and commentaries from our examiners.

Contact us

Our friendly team will be happy to support you between 8am and 5pm, Monday to Friday.

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