AS
GEOGRAPHY
7036/1

Paper 1 Physical Geography and People and the Environment

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.

Section A

Qu	Part	Marking guidance	Total marks
01	1	**Which of the following describes the cryospheric store of water?** **D** All water stored in its solid state in glaciers, ice caps and sea ice.	**1** **AO1 = 1**
01	2	**Which of the following outlines a positive feedback in the water cycle?** **D** Increased water vapour in the atmosphere acts as a greenhouse gas → atmosphere warms up → more water is evaporated from the oceans → vapour increases in the atmosphere.	**1** **AO1 = 1**
01	3	**Outline features of a flood hydrograph.** Point marked Award 1 mark per valid point with extra mark(s) for developed points (d). For example: Notes for answers **AO1** • A graph of discharge of a river over the period of time when the normal flow of the river is affected by a storm event (1). • Precipitation during the storm event is typically shown as a bar graph (1). • The rising limb illustrates how quickly a river responds to the rainfall event (1). • The highest point on the graph indicates the peak discharge following the rainfall event (1). • The gap between the peak rainfall and peak discharge is the lag time (1). If the rising limb is very steep and the lag time short, then the rainfall has entered the river very quickly (1d). • The receding limb indicates the rate at which the river returns to its normal discharge (1). • Allow one mark for a basic list of elements of hydrographs (1). • NB – if a response includes an **accurate** sketch/drawing of a flood hydrograph allow 1 mark for a sketch on its own, however accurate annotations of features identified above can receive (1) per correct feature. The notes for answers are not exhaustive. Credit any valid points.	**3** **AO1 = 3**

01	4	**Analyse the data shown in Figure 1 and Figure 2.** **AO3** – There should be clear analysis of the relationship between levels of urbanisation and CO_2 emissions in different continents in both years. Analysis should consider changes in the data over time. There should be data manipulation to support the analysis. <u>Mark scheme</u> **Level 2 (4–6 marks)** **AO3** – Clear analysis 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 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> **AO3** • Both graphs show a clear positive relationship between the level of urbanisation and CO_2 emissions in both time periods. In 1960 only 5 countries with less than 20% urbanisation have emissions over 1 tCO_2 pp, whilst 6 countries with more than 80% urbanisation have over 1 tCO_2 p.p. In 2019 however, only 2 countries with less than 20% urbanisation have emissions over 1 tCO_2 pp, but ~6 times more countries with more than 80% urbanisation have over 1 tCO_2 pp than in 1960. • There has been a significant increase in the level of urbanisation between the two time periods. In 1960 ~30% of countries were less than 20% urban, and only 3 countries were over 90% urban, by 2019 only 7 countries were less than 20% urban but almost 4 times as many countries were now over 90% urban. • The graphs show that there has been a trend of more countries increasing their emissions. In 1960 about 1/5 of countries had emissions of less than 0.1 tCO2 pp and only 7 countries had emissions of 10 tCO_2 pp or above. By 2019 only 7 had less than 0.1 tCO_2 pp, but the number with over 10 tCO_2 pp had more than doubled, and 5 countries now even had emissions of 20 tCO_2 pp or above. • There is scope for analysis of data relating to different continents, this is clearly acceptable. Credit any other valid analysis.	**6** **AO3 = 6**

01	5	**Assess the scale of changes to stores of carbon in a tropical rainforest you have studied.** **AO1** – Knowledge and understanding of the carbon cycle in a tropical rainforest. Knowledge and understanding of changes to the size of the carbon stores in the case study tropical rainforest. **AO2** – Application of knowledge and understanding to analyse and evaluate the extent of changes to the size of the stores of carbon in the case study tropical rainforest. **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. Assessment is 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. Assessment is 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. Assessment is basic and supported with limited appropriate evidence. Notes for answers **AO1** • Factors driving change in the magnitude of stores of carbon, over time and in space, including flows and transfers at plant and sere scale. Photosynthesis, respiration, decomposition, combustion and carbon sequestration. • Changes in the carbon cycle over time, to include natural variation (including wildfires, volcanic activity) and human impact (including hydrocarbon fuel extraction and burning, farming practices, deforestation, land use changes). • Case study of a tropical rainforest setting to illustrate and analyse key themes in carbon cycles and their relationship to environmental change and human activity.	**9** **AO1 = 4** **AO2 = 5**

		AO2 • Responses are likely to be heavily influenced by the exemplification and case study material. • Assessment of the impact of deforestation/logging/mining on the size of the biospheric store of carbon and any reduction in the amount of carbon stored in trees is likely to be a prominent feature of responses. • Assessment may be given of the spatial scale of change in the named rainforest. A judgement of the geographical area of forest cleared would allow the response to come to a view on the extent of change to that store of carbon. • Assessment may be given of the temporal scale of change in the named rainforest. A judgement of the speed with which the forest is being cleared would allow the response to come to a view on the rate of change to that store of carbon. • Assessment may be given of the impact of the removal of trees and subsequent impact of the interruption of transfers of carbon to the soil, and soil erosion, on the amount of carbon stored in the soil. • Others may provide assessment of the impact of possible afforestation and the replanting of trees on the scale of stores of carbon. Credit any other valid assessment.	

01	6	**'There is always a balance between the inputs and outputs of water in a drainage basin.'** **To what extent do you agree with this statement?** **AO1** – Knowledge and understanding of the drainage basin as an open system. Knowledge and understanding of the concept of water balance. **AO2** – Application of knowledge and understanding to assess nature of the drainage basin water cycle and water balance. <u>Notes for answers</u> **AO1** • Systems in physical geography: systems concepts and their application to the water cycle. Inputs, outputs, energy, stores/components, flows/transfers, positive/negative feedback, dynamic equilibrium. • Drainage basins as open systems – inputs and outputs, to include precipitation, evapotranspiration and runoff; stores and flows, to include: interception, surface, soil water, groundwater and channel storage; stemflow, infiltration, overland flow and channel flow. Concept of water balance. • Changes in the water cycle over time to include natural variation including storm events, seasonal changes and human impact including farming practices, land use change and water abstraction. • Case study of a river catchment(s) at a local scale to illustrate and analyse the key themes above, engage with field data and consider the impact of precipitation upon drainage basin stores and transfers and implications for sustainable water supply and/or flooding. **AO2** • It is likely that the direction taken will depend upon a chosen local scale river catchment, however the question does not dictate that the response refers to a case study. • Assessment of the scale and nature of natural inputs – precipitation. • Assessment of the subsequent scale of the impact of processes and transfers within the drainage basin: - Natural - interception, stemflow, infiltration, utilisation by vegetation, overland flow and channel flow. Also the impact of seasonal changes or storm events. - Human – farming practices, land use change and water abstraction. • Assessment of the subsequent scale and nature of natural outputs – evaporation, transpiration and runoff. • To fully address the AO2 element of the question there must be clear assessment of the extent to which there is ever balance between the inputs and outputs of water in a drainage basin. Assessment may focus on a snapshot in time, whilst others may come to the view that the answer depends on a range of factors, including temporal change, which may also be assessed. Any conclusion is acceptable, though should relate to the preceding content.	**20** **AO1 = 10** **AO2 = 10**

Marking grid for Question 01.6

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. • 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
02	1	**Which of the following are all landforms of coastal deposition?** **A** Beaches, barrier beaches, compound spits, offshore bars.	**1** **AO1 = 1**
02	2	**Which of the following outlines a positive feedback at the coast?** **B** Vegetation begins to grow in sediments of saltmarshes → vegetation traps more sediment → height of the marsh increases → length of time inundated by the sea reduces → vegetation growth increases.	**1** **AO1 = 1**
02	3	**Outline features of integrated coastal zone management.** Point marked Award 1 mark per valid point with extra mark(s) for developed points (d). For example: Notes for answers **AO1** • ICZM is a dynamic and multidisciplinary approach to coastal management that promotes sustainability (1). • ICZM is a process that: – takes account of the views and needs of all stakeholders in a given coastal zone (1) – seeks balance between environmental, economic, social, cultural and recreational objectives (1) – takes into account the marine and terrestrial elements of a given coastal zone (1). • It is a cyclical process (1) of information collection, planning, decision making, management and monitoring of implementation (1d). • In England and Wales, Shoreline Management Plans (SMPs) implement ICZM along stretches of the coast (1). The notes for answers are not exhaustive. Credit any valid points.	**3** **AO1 = 3**
02	4	**Analyse the data shown in Figure 3 and Figure 4.** **AO3** – There should be clear analysis of the relationship between the size of population and the number of people living at risk of coastal flooding in different continents in both years. Analysis should consider changes in the data over time. There should be data manipulation to support the analysis. Mark scheme **Level 2 (4–6 marks)**	**6** **AO3 = 6**

		AO3 – Clear analysis 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 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. Notes for answers **AO3** • Both graphs show a clear positive relationship between the size of the population at risk of flooding and the population size of the countries. In 2020 only 2 countries with less than 1 million people have over 100 000 at risk of flooding, whilst over four times as many countries with populations over 100 million have more than 100 000 at risk. In 2100 4 of the countries predicted to have less than 1 million people have more than 100 000 at risk, but now all 16 countries with over 100 million people have more than 100 000 at risk. • In both time periods Asia has the most people at risk of floods. In 2020 11 of the 18 countries with over 1 million at risk are in Asia, but by 2100 the total number of countries with over 1 million at risk will increase by almost 60% with 17 of these in Asia. • The graphs predict that the number of people at risk is going to increase significantly. In 2020 ~1/2 of countries have less than 0.1 million at risk and only 3 countries have more than 10 million at risk. By 2100 ~1/4 have less than 0.1 million at risk and the number with over 10 million at risk is predicted to double. Credit any other valid analysis.	

02	5	**With reference to a coastal landscape beyond the UK that you have studied, assess the extent to which people will be able to successfully adapt to the risks they face in living on the coast in the future.** **AO1** – Knowledge and understanding of the adaptations made by people to cope with the risks they face in a coastal setting beyond the UK. **AO2** – Application of knowledge and understanding to analyse and assess the extent to which people have successfully adapted to the risks they face in the case study location. **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. Assessment is 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. Assessment is 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. Evaluation is basic and supported with limited appropriate evidence. Notes for answers **AO1** • The relationship between process, time, landforms and landscapes in coastal settings. • Case study of a contrasting coastal landscape beyond the UK to illustrate and analyse how it presents risks and opportunities for human occupation and development and evaluate human responses of resilience, mitigation and adaptation. **AO2** • Responses are likely to be heavily influenced by the exemplification and case study material. • Expect an assessment of the nature of the risks likely to be faced by the people in the chosen coastal landscape in the future. • Expect an assessment of the adaptations people may make in the future in the chosen coastal landscape.	**9** **AO1 = 4** **AO2 = 5**

		• Assessment should focus on the extent to which the adaptations people may make will, or will not be, successful in either allowing them to cope with, or mitigate the impacts of the risks they may face. • Responses may assess the extent to which adaptations are successful in improving the level of resilience to, and mitigation of, the risks people face. • Responses may come to an overall view of the likely level of success of the adaptations made, or assess the possible successfulness of specific adaptations. • Responses may identify and assess the extent to which people have recently adapted, or are currently adapting, which may be used to imply the future viability of living at that coast, this is acceptable. A response that solely and explicitly only focuses on the past will struggle to move through the levels. • Responses may clearly assess the future ability of people to successfully live at a coast but may not fully distinguish between methods of adaptation and mitigation. This may limit the ability to move through the levels fully but is credit worthy if the answer seeks to target the AO2 element of the question. Credit any other valid assessment as long as the argument is coherent and feasible.	

02	6	**'Submergent coastal landforms will develop faster than emergent features in the future.'** **To what extent do you agree with this statement?** **AO1** – Knowledge and understanding of submergent and emergent coastal landforms. Knowledge and understanding of predicted future sea level change. **AO2** – Application of knowledge and understanding to assess the extent to which global sea level rise will outpace any local scale isostatic uplift. <u>Notes for answers</u> **AO1** • Eustatic, isostatic and tectonic sea level change: major changes in the sea level in the last 10 000 years. • Coastlines of emergence and submergence. Origin and development of associated landforms: raised beaches, marine platforms; rias, fjords, Dalmatian coasts. • Recent and predicted climate change and potential impact on coasts. • The relationship between process, time, landforms and landscapes in coastal settings. **AO2** • Application of knowledge and understanding to assess the scale and role of key future processes, including: predicted sea level change; isostatic rebound; tectonic processes. • It is likely that responses will come to the view that the answer depends on the geographical scale at which the question is addressed. - Globally, eustatic sea level rise will undoubtedly lead to the accelerating development of submergent features in most parts of the world. - More locally, in areas where isostatic rebound is already occurring, or where it begins to happen in the future as more ice on land melts,	**20** **AO1 = 10** **AO2 = 10**

		outcomes will reflect the balance between rates of sea level rise and uplift of land. - In some places it is possible that major seismic events could rapidly lead to either uplift or submergence of the land at the coast. • Expect responses to come to the view that the accelerating rate at which global sea levels are predicted to rise in the 21st Century and beyond it is most likely that submergent features will develop faster than emergent features. • Responses may also come to the view that much will depend upon the rate, and extent, to which humans are able to mitigate both the causes and impacts of future climate change. • It is possible, although unlikely, that a response may make reference to the fact that Earth is currently in an interglacial and, at some point, there is likely to be another period of climatic cooling and sea level fall. This is valid. Any conclusion is acceptable, though should relate to the preceding content.	

Marking grid for Question 02.6

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. • 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
03	1	**Which of the following describes the distribution of alpine cold environments?** **C** In areas of high altitude in major mountain ranges, often with active valley glaciers.	**1** **AO1 = 1**
03	2	**Which of the following outlines a positive feedback in cold environments?** **C** Sea ice melts → darker surfaces exposed → less solar radiation reflected → more insolation absorbed → temperatures rise → more melting	**1** **AO1 = 1**
03	3	**Outline features of an outwash plain.** Point marked Award 1 mark per valid point with extra mark(s) for developed points (d). For example: Notes for answers • A large very gently sloping expanse of material deposited by meltwater in front of and/or at the snout of a glacier (1). Sediment can be 10s of metres deep, and outwash plains can extend to cover 100s to 1000s of km^2 (1d). • The material is graded (1) with the coarsest sediment found closest to the snout of the glacier and the finest particles having been carried some distance from the glacier (1d). • The sediments are often formed of alternating thicker and thinner layers due to seasonal variations in meltwater flow (1). • Constantly shifting braided meltwater channels are a common feature (1). Many will be blocked with sediment at times of low meltwater flow, or exhibit features of fluvial erosion during high meltwater flow (1d). • Small lakes, or kettle holes are a common feature (1) lake sediments often have alternating thinner and thicker layers of sediment, or varves (1d). The notes for answers are not exhaustive. Credit any valid points.	**3** **AO1 = 3**

03	4	**Analyse the data shown in Figure 5 and Figure 6.** **AO3** – There should be clear analysis of the relationship between the size of population and the average age of people living in the districts of Alaska in both years. Analysis should consider changes in the data over time. There should be data manipulation to support the analysis. Mark scheme **Level 2 (4–6 marks)** **AO3** – Clear analysis 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 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. Notes for answers **AO3** • There is no completely clear relationship between the average age and total population size of districts. However, in 2019 there was possibly a slight negative relationship, with the smaller settlements, under 3000 people, generally having older populations than many of the larger settlements, but this is less clear for 2045. • Despite there being a predicted increase in the median age for the whole of Alaska, by 2045 no districts are predicted to have an average age over 47, compared to 3 in 2019. Also the number of districts with average ages under 35 decreases from 9 to 7, suggesting that the spread/dispersion of ages is predicted to decrease. • There is predicted to be an approximately 25% increase in the number of districts with populations over 10,000. However, the predicted size of the 10 smallest districts in 2049 are slightly smaller than the 10 smallest districts in 2019. Suggesting that the spread/dispersion of the size of districts is predicted to decrease. Credit any other valid analysis.	**6** **AO3 = 6**

03	5	**Assess the extent to which people will be able to successfully adapt to the risks they face in the future in a glaciated landscape beyond the UK that you have studied.** **AO1** – Knowledge and understanding of the adaptations made by people to cope with the challenges they face in a glaciated landscape beyond the UK. **AO2** – Application of knowledge and understanding to analyse and assess the extent to which people will be able to successfully adapt to the challenges they face in the case study location in the future.	**9** **AO1 = 4** **AO2 = 5**

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. Assessment is 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. Assessment is 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. Assessment is basic and supported with limited appropriate evidence.

Notes for answers

AO1
- Concept of environmental fragility. Human impacts on cold environments over time and at a variety of scales. Recent and prospective impact of climate change. Management of cold environments at present and in alternative possible futures.
- Case study of a contrasting glaciated landscape beyond the UK to illustrate and analyse how it presents challenges and opportunities for human occupation and development and evaluate human responses of resilience, mitigation and adaptation.

AO2:
- Responses are likely to be heavily influenced by the exemplification and case study material. The question does require reference to a landscape beyond the UK. Answers without a case study or only reference to the UK will gain limited credit.
- Expect an assessment of the nature of the risks people may face in the chosen glaciated landscape in the future.
- Expect an assessment of the likely adaptations people may make in the chosen glaciated landscape in the future.
- Assessment should focus on the extent to which the possible adaptations made by the people will, or will not, be successful in either allowing them to cope with, or mitigate the impacts of the risks they face in the future.
- Responses may identify and assess the extent to which people have recently adapted, or are currently adapting, which may be used to

		imply the future viability of living at that coast, this is acceptable. A response that solely and explicitly only focuses on the past will struggle to move through the levels. • Responses may clearly assess the future ability of people to successfully live at a coast but may not fully distinguish between methods of adaptation and mitigation. This may limit the ability to move through the levels fully but is credit worthy if the answer seeks to target the AO2 element of the question. • Responses may come to an overall view of the level of success of the adaptations will possibly make, or assess the successfulness of specific adaptations. Credit any other valid assessment as long as the argument is coherent and feasible.	

03	6	**'The characteristics and distribution of periglacial landscapes will change rapidly in the future.'** **To what extent do you agree with this statement?** **AO1** – Knowledge and understanding of the character and distribution of periglacial landscapes. Knowledge and understanding of future climate change in cold environments. **AO2** – Application of knowledge and understanding to assess the speed at which climate change will lead to changes in the characteristics and distribution of periglacial landscapes in the future. <u>Notes for answers</u> **AO1** • The global distribution of cold environments (periglacial). • Periglacial features and processes: permafrost, active layer, mass movement. • Periglacial landforms: patterned ground, ice wedges, pingos, blockfields, solifluction lobes, terracettes, thermokarst. Characteristic periglacial landscapes. • The relationship between process, time, landforms and landscapes in glaciated settings: characteristic glaciated and periglacial landscapes. • Concept of environmental fragility. Human impacts on fragile cold environments over time and at a variety of scales. Recent and prospective impact of climate change. Management of cold environments at present and in alternative possible futures. **AO2** • Assessment is likely to come to the view that both the characteristics and distribution of periglacial landscapes will indeed change rapidly in the future. • Responses are likely to assess the changes to periglacial landscapes in relation to predicted future climate change. • Characteristics – assessment is likely to come to the view that the features of pre-existing periglacial landscapes (as listed in AO1 above)	**20** **AO1 = 10** **AO2 = 10**

		will be affected by higher temperatures and the melting of ice. Assessment is likely to come to the view that the speed of change will be governed by the speed of temperature change, and hence ice melt. • Distribution – assessment is likely to come to the view that the spatial extent of periglacial landscape will increase. However, expect responses to suggest that as temperatures rise, periglacial conditions may begin to encroach polewards, beginning to change currently glacial landscapes. At the same time as warmer temperatures spread polewards, currently periglacial landscapes furthest from the poles may see the disappearance of some periglacial landscape features. • Similar assessment to the above may be seen relating to altitudinal changes. • Responses are likely to conclude that the speed at which changes happen will be determined by the rate of climate change. As predicted temperature increases vary significantly, this may be included in the assessment. • Responses may also come to the view that much will depend upon the rate, and extent, to which humans are able to mitigate both the causes and impacts of future climate change. • Some responses may only focus on past, recent or current changes, which on its own will achieve limited credit. But, if there is a clear inference that current processes or change will continue into the future this may be more creditworthy. • Some responses may feature human characteristics of periglacial landscapes. This is acceptable but, assessment should focus on the speed with which these features may change in the future. Any conclusion is acceptable, as long as it is supported by the preceding content.	

Marking grid for Question 03.6

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. • 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
04	1	**Which of the following summarises the process of slab pull?** **B** A driving force of plate movement generated at a subduction zone as an old, cold dense plate sinks into the mantle beneath.	**1** **AO1 = 1**
04	2	**Which of the following describes primary impacts of tropical storms?** **B** Death and injury due to flying debris, fallen power lines and storm surges.	**1** **AO1 = 1**
04	3	**Summarise the formation of rift valleys.** Point marked Award 1 mark per valid point with extra mark(s) for developed points (d). For example: Notes for answers **AO1** • Rift valleys are formed where continental plates pull apart (1) becoming an emergent constructive plate boundary (1d). • Hot magma rises in the upper mantle below the crust (1) this causes the crust to dome (1d). • Parallel linear faults/cracks form in the brittle crust (1). • As the plate is pulled apart the crust between the faults begins to sink (1) forming the linear flat-bottomed and steep sided rift valley (1d). • Where the rift is well developed the valley floor can often sink below sea level (1). The notes for answers are not exhaustive. Credit any valid points.	**3** **AO1 = 3**

04	4	**Analyse the data shown in Figure 7 and Figure 8.** **AO3** – There should be clear analysis of the different proportions of people affected by, and killed by, different natural hazards. Analysis should consider similarities and differences in the two figures. There should be data manipulation to support the analysis. Mark scheme **Level 2 (4–6 marks)** **AO3** – Clear analysis 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 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. Notes for answers **AO3** • The figures show that there was a very significant difference in the number of people affected by and number killed by natural hazards in the time period. Just over 4 billion were affected by hazards, over 3000 times more than were killed. • The proportions of people affected and killed by the different hazards varied greatly. The hazards that affected the most people were not the most deadly, and some of the most deadly did not rank amongst those affecting the most people. • Earthquakes only accounted for 3% of those affected by hazards, yet accounted for 58% of those killed by hazards in the time period. • Floods accounted for 39% of those affected, but only 8% of deaths. • Whilst drought accounted for about 1/3 of those affected by hazards, they only accounted for a fraction of 3% of the total deaths in the time period. • Despite accounting for the 3rd highest number of deaths, over 10% of the total, extreme temperature accounted for a fraction of 3% of those affected by hazards. • Those affected and deaths are both dominated by two hazards. Drought and floods accounted for over ¾ of those affected, whilst just under ¾ of deaths were due to earthquakes and storms. • Due to conflation of some of the categories analysis of the impacts of some hazards is challenging. Credit any other valid analysis.	**6** **AO3 = 6**

04	5	**Assess the extent to which the frequency and magnitude of volcanic activity is more predictable at some plate margins than others.** **AO1** – Knowledge and understanding of the frequency and magnitude of volcanic activity. Knowledge and understanding of how the nature of plate boundaries affects the frequency and magnitude of volcanic activity. **AO2** – Application of knowledge and understanding to analyse and assess whether the frequency and magnitude of volcanic activity is more or less predictable at different plate boundaries. **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. Evaluation is 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. Evaluation is 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. Evaluation is basic and supported with limited appropriate evidence. Notes for answers **AO1** • Earth structure and internal energy sources. Plate tectonic theory of crustal evolution: tectonic plates; plate movement; gravitational sliding; ridge push, slab pull; convection currents and sea-floor spreading. • Destructive, constructive and conservative plate margins. Characteristic processes: vulcanicity. • The nature of vulcanicity and its relation to plate tectonics: forms of volcanic hazard: nuées ardentes, lava flows, mudflows, pyroclastic and ash fallout, gases/acid rain, tephra. Spatial distribution, randomness, magnitude, frequency, regularity and predictability of hazard events.	**9** **AO1 = 4** **AO2 = 5**

		AO2 • Responses should assess the frequency of volcanic activity at different types of plate margins. • Responses should assess the magnitude of volcanic activity at different types of plate margins. • Assessment may assess the predictability of frequency and magnitude separately, however it is likely that a judgement will be given about the predictability of both at different plate margins. • It is expected that volcanic activity is assessed at more than one type of plate margin. • Some responses may seek to assess the predictability of frequency and magnitude based on the geographical location and level of economic and technological development of the location where the volcanic activity occurs. This is acceptable. But, to address the question fully, a comparison would need to be made between locations. • Assessment may be illustrated and supported with evidence from named plate boundaries or specific volcanoes. Credit any valid assessment as long as the argument is coherent and feasible.	

04	6	**'Earthquakes have a greater impact on the human characteristics of place than the physical characteristics of place.'** **With reference to a recent seismic event you have studied, how far do you agree with the statement above?** **AO1** – Knowledge and understanding of the impacts of a recent seismic event. Knowledge and understanding of the factors affecting the characteristics of place. **AO2** – Application of knowledge and understanding to assess the extent to which the recent earthquake affected the place human and physical characteristics of the place. <u>Notes for answers</u> **AO1** • The nature of seismicity and its relation to plate tectonics: forms of seismic hazard: earthquakes, shockwaves, tsunamis, liquefaction, landslides. Spatial distribution, randomness, magnitude, frequency, regularity, predictability of hazard events. • Impacts: primary/secondary; environmental, social, economic, political. Short and long-term responses; risk management designed to reduce the impacts of the hazard through preparedness, mitigation, prevention and adaptation. • Impacts and human responses as evidenced by a recent seismic event. • Factors contributing to the character of places: – Endogenous: location, topography, physical geography, land use, built environment and infrastructure, demographic and economic characteristics	**20** **AO1 = 10** **AO2 = 10**

		– Exogenous: relationships with other places. **AO2** Responses are expected to show an understanding of the impacts of the chosen recent seismic event. There should be clear recognition of the learning from the Changing Places unit in the relative impact of the recent seismic event on both the human and physical characteristics of place. Reciting learned case study material does not constitute AO2. It is the integration of the place study ideas and concepts which allow access to AO2. • Responses will be influenced by the exemplification and chosen place. The answer depends on the nature of the changes to the human and physical place characteristics that the recent seismic event led to in the chosen place. • Physical characteristics of place – assessment of the impact of the recent seismic event on: – the geomorphology of the land – cracks/fissures appearing in the land surface; elevation/depression of land; landslides and associated impacts; tsunami and associated impacts. • Human characteristics of place – assessment of the impact of the recent seismic event on: - the demographics and population structure of the place due to death, evacuation or displacement of people etc - the social characteristics – impacts on physical and mental health, familial and community relationships and structure, disproportionate impacts on specific social groups etc - the economic characteristics – extent of economic impacts for individuals, communities and businesses - the cultural characteristics – destruction of sites with historical or religious importance - the built environment – damage and destruction of infrastructure. • Many responses may come to the view that it is inevitable that seismic activity has a greater impact on human characteristics. This is acceptable. However, to access all levels of the mark scheme there must also be some assessment of the impact on some physical characteristics. • In order to fully address the AO2 assessment element of the question, the response must come to a view as to which place characteristics the recent seismic event has affected the most. Any conclusion is acceptable, as long as it is supported by the preceding content.	

Marking grid for Question 04.6

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. • 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	**Which of the following is a cause of the rise of the service economy?** **B** Increasing wealth in urban areas increases demand for leisure and retail facilities.	**1** **AO1 = 1**
05	2	**Which of the following are features of fortress developments?** **C** Urban spaces designed around security, protection, surveillance and exclusion.	**1** **AO1 = 1**
05	3	**Summarise the causes of social segregation in urban areas.** Point marked Award 1 mark per valid point with extra mark(s) for developed points (d). For example: Notes for answers **AO1** • Social segregation occurs when distinct communities/groups of people occupy different areas within an urban area, often related to income, wealth, ethnicity, age and cultural aspects such as religion. (1). • Differential access to the housing market (1). Higher income/wealthier households exercise more choice and thus tend to occupy more desirable areas relegating lower income households to less desirable and cheaper housing areas (1d). • Different districts in urban areas vary in terms of accessibility, topography, quality of environment etc. affecting residential land values with household residential choices responding accordingly. (1) • Immigrant and minority communities may experience discrimination in labour and housing markets limiting access to housing. They thus tend to concentrate in area of poorer quality, less desirable housing (1). • Limited social and economic mobility mean that established patterns reflecting earlier factors and processes may persist over successive generations (1). The notes for answers are not exhaustive. Credit any valid points.	**3** **AO1 = 3**

05	4	**Analyse the data shown in Figure 9 and Figure 10.** **AO3** – There should be clear analysis of the population living in the large urban areas in each region in each figure. Analysis should consider changes over time. There should be data manipulation to support the analysis. Mark scheme **Level 2 (4–6 marks)** **AO3** – Clear analysis 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 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. Notes for answers **AO3** • There has been a significant change in the number of people living in the urban areas in each region over the time period. • In 1950 the total urban population represented is 419.1 million. By 2020 the population living in the same urban areas is just over 6 times higher at 2569 million. • In 1950 together Asia and Europe dominated, together accounting for just over 2/3 of the total. Asia having 36% of the total and Europe 31%. • In 2020 Asia dominates, accounting for about 57% of the population on its own. Europe now has the 4th largest share and only accounts for less than 10% of the total, compared to 31% in 1950. • Whilst the North American urban areas now have 3 times as many people living in them, the continent's share of the total has halved from around 17% to around 9%. • Africa's share has almost tripled. In 1950 it was ranked 5th behind Latin America and the Caribbean, but was ranked 3rd, ahead of Europe in 2020. The size of the population in the African urban areas is now 15 times larger than in 1950. • Despite a quadrupling in the size of their population the urban areas in Oceania saw their share of the total drop from 1.2% to 0.8% of the total. Credit any other valid analysis.	**6** **AO3 = 6**

05	5	**Assess the extent to which incineration is a more sustainable approach to waste management than landfill.** **AO1** – Knowledge and understanding of incineration and landfill as approaches to waste management. Knowledge and understanding of the sustainability of approaches to waste management. **AO2** – Application of knowledge and understanding to analyse and assess the sustainability of different approaches to waste management. **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. Assessment is 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. Assessment is 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. Assessment is basic and supported with limited appropriate evidence. Notes for answers **AO1** • The environmental impacts of alternative approaches to waste disposal: unregulated, recycling, recovery, incineration, burial, submergence and trade. • Comparison of incineration and landfill approaches to waste disposal in relation to a specified urban area. • Contemporary opportunities and challenges in developing more sustainable cities. **AO2** • Responses may assess the role of both incineration and landfill as approaches to waste management. • The direction of the response may be influenced by any exemplification or case study material.	**9** **AO1 = 4** **AO2 = 5**

		• Assessment is likely to focus on the extent to which incineration and landfill are more or less environmentally sustainable than each other. • Assessment could focus on the extent to which incineration and landfill are more or less sustainable than each other in different contexts, eg economic, environmental or social sustainability. • Assessment may be illustrated and supported with evidence from places where incineration and landfill are used as approaches to managing waste. Credit any valid assessment as long as the argument is coherent and feasible.	

05	6	**'Counter-urbanisation affects the human characteristics of place more than the physical characteristics of place.'** **With reference to an urban area you have studied, how far do you agree with this statement?** **AO1** – Knowledge and understanding of Counter-urbanisation and its impacts. Knowledge and understanding of factors affecting the characteristics of place. **AO2** – Application of knowledge and understanding to assess the extent to which counter-urbanisation affected the place human and physical characteristics of the place. <u>Notes for answers</u> **AO1** • Counter-urbanisation. • Physical and human factors in human forms. Spatial patterns of land use, economic inequality, social segregation and cultural diversity in contrasting urban areas, and the factors that influence them. • Issues associated with economic inequality, social segregation and cultural diversity. • Case studies of two contrasting urban areas to illustrate and analyse the key themes set out above to include: – Patterns of economic and social well-being – The nature and impact of physical environmental conditions. • With particular reference to the implications for environmental sustainability, the character of the study areas and the experience and attitudes of their populations. • Factors contributing to the character of places: – Endogenous: location, topography, physical geography, land use, built environment and infrastructure, demographic and economic characteristics – Exogenous: relationships with other places. **AO2** Responses are expected to show an understanding of counter-urbanisation in the chosen urban area. There should be clear recognition	**20** **AO1 = 10** **AO2 = 10**

		of the learning from the Changing Places unit in the relative impact of counter-urbanisation on both the human and physical characteristics of place. Reciting learned case study material does not constitute AO2. It is the integration of the place study ideas and concepts which allow access to AO2. • Responses will be influenced by the exemplification and chosen place. The answer depends on the nature of the changes to the human and physical place characteristics that counter-urbanisation led to in the chosen place. • Physical characteristics of place – assessment of the impact of counter-urbanisation on: – the size of the settlement and the impact this may have had on the physical landscape – for example, the impacts of changes to the settlement on geomorphology, drainage, ecosystems and wildlife habitats. • Human characteristics of place – assessment of the impact of counter-urbanisation on: - the demographics and population structure of the place - the social characteristics – changing levels of affluence, social interaction, leisure activities etc - the economic characteristics – changes to house prices, business opportunities, commercial activities - the cultural characteristics – changes in the population's heritage, languages spoken or connections with other places - the built form of the place – new buildings, changes to existing buildings, new or changed infrastructure, such as road networks. • Some responses may seek to address the impact of counter-urbanisation on the *origin* or *destination* area, or *both*. This is acceptable. • In some urban areas, definitively distinguishing between what is counter-urbanisation, or further suburbanisation, urban sprawl or infilling, may be difficult. If it is clear there is an attempt to assess the impacts of people moving from within to beyond the named urban area responses can move through the levels. If the response is clearly focussing on the concept of suburbanisation only it may gain less credit. • In order to fully address the AO2 assessment element of the question, the response must come to a view as to which place characteristics counter-urbanisation has affected the most. Any conclusion is acceptable, as long as it is supported by the preceding content.	

Marking grid for Question 05.6

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. • 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.