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Examiners' Report

June 2011

GCSE Geography 5GA2H 01

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Introduction

This unit examines the Natural Environment, covering the physical geography topics of Coastal, River, Glacial and Tectonic landscapes in section A, and Wasteful and Watery Worlds in section B. In section A both Coastal landscapes and Tectonic landscapes proved to be the most popular options, with River and Glacial landscapes equally unpopular. In section B there was equal popularity amongst the two options.

Candidate performance was good, however, there were a few parts of the paper where improvements could be made. In particular answers to section A questions were not as good as those to section B.

A general summary of improvements are given below:

- i) On landform questions ensure that explanation is given to get beyond 2 marks. This can be in the form of explaining the process or part of the sequence.
- ii) In questions asking for evidence, please ensure that specific detail is taken from the resource e.g. the name of a place.
- ii) In questions asking for comparison ensure that candidates explicitly make links between the aspects being compared.
- iii) On case study questions candidates should ensure that the information and case material provided is relevant to the question.

On an administrative note if candidates make a mistake on the paper, can they clearly signal this to the examiners so that they know you have provided an alternative answer elsewhere on the paper. An asterisk is not always sufficient.

Question 1 (a) (i)

Many candidates were able to identify Ireland as having the longest fetch from Sefton.

Question 1 (a) (ii)

Most candidates were able to use the scale to measure the distance from Sefton to Angelsey. A range of answers were allowed to accommodate the interpretations of the arrow size. However, some candidates measured the Sefton to Ireland fetch having not read the question.

Question 1 (a) (iii)

Candidates were asked to suggest how fetch caused different rates of coastal recession. Some candidates confused the concept of fetch and suggested that a larger fetch led to less erosion. However, the majority understood the concept, and some candidates were able to explain that increased distance leads to increased wave energy. However, although some candidates showed a clear understanding, they were limited to 2 marks as they did not use evidence. In this case, reference to a place with a larger fetch e.g. Scottish coast, could exemplify the point.

(iii) Suggest how wave fetch can cause different rates of coastal recession.
Use evidence from Figure 1a in your answer.

(3)
If there is a big fetch the waves will be more powerful as there are deep bays in Ireland due to destructive waves pushed across over a long distance.



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Examiner Comments

This candidate refers to evidence from Figure 1a, and has the correct idea that increased fetch equals more erosion. However, they do not develop the idea of 'more powerful', therefore would not score full marks.



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Examiner Tip

Ensure that when asked to use evidence you relate to information from the figure, e.g. a name of a place.

Question 1 (a) (iv)

Candidates had a good understanding of wave characteristics. Swash and backwash were not credited separately though some candidates compared them so. It was pleasing to see the inclusion of specific detail to exemplify characteristics e.g. destructive waves occurred 10-15 times per minute. Candidates, however, must ensure that they actually compare and do not simply write about one type of wave followed by the other.

(iv) Compare the characteristics of constructive and destructive waves.

(4)

Constructive waves are responsible for deposition of sediment on the coastline. They form beaches. The swash is stronger than the backwash which makes it easier to deposit sediment on the beaches. Mainly found on gently sloping beaches. Destructive waves are mainly responsible for coastal erosion and for taking sediment away from coastlines. The backwash is stronger than the swash which helps to take sediment away from beaches. They are found on steep beaches.



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Here the candidate shows a clear understanding of wave characteristics. However, both are tackled separate of each other. To get to full marks the candidate would have needed to explicitly compare a similar characteristic of each wave, e.g. destructive waves remove material from a beach, whereas constructive waves are responsible for deposition.

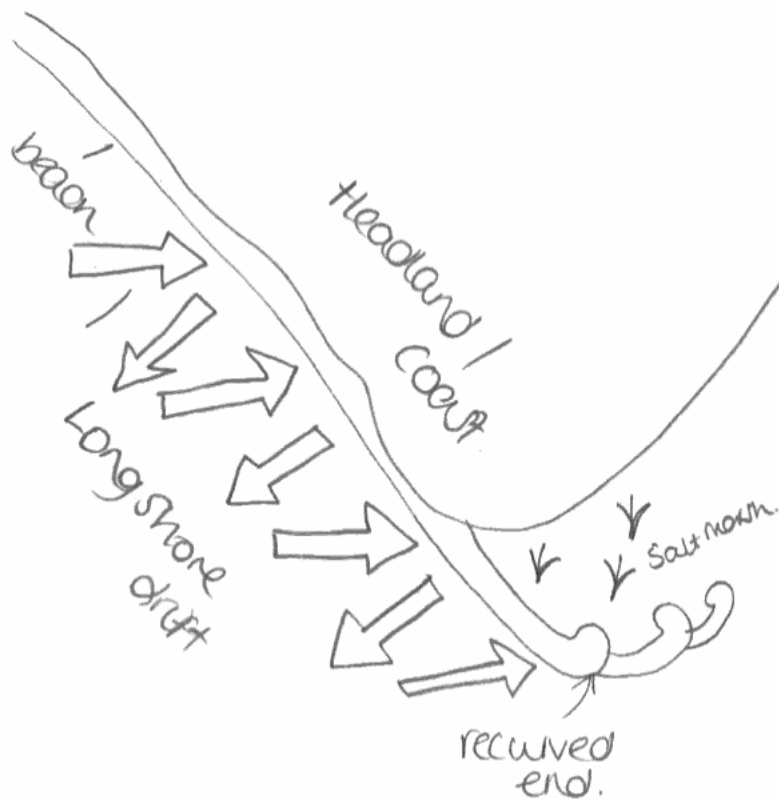


ResultsPlus Examiner Tip

Make sure that comparisons are explicit. Practise writing your answers in such a way.

Question 1 (b) (iii)

Spit formation once again proved challenging. Many candidates knew that spit formation was associated with Longshore Drift. However from there on, responses were highly varied. Some that had a clear idea were limited by lack of explanation. In this instance, the process of LSD could have been explained or, as many candidates did, explain the curved spit end. There were surprisingly few references to salt marsh formation as part of the sequence. This question also required a diagram to get to full marks. When candidates draw diagrams they should look to include helpful labels or annotations which add to the written answer.



A spit is formed when a coastline suddenly changes direction, but longshore drift is allowed to carry on. This will be because the water is shallow enough, longshore drift

will be because the water is shallow enough longshore drift carries on after the coastline has changed direction, it deposits sediment forming a beach coming off the coastline. This happens until the prevailing wind changes direction causing a "recurved end" spits will be stopped when the water becomes too deep as a current from an entry pushes the sediment away.



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Examiner Comments

This candidate has a good answer which includes a full sequence, including a temporal change, a process (deposition) and some explanation - in this case the reason for the curved end. The diagram is also very helpful as it shows the direction of longshore drift, the changing shape of the spit and the area of salt marsh.



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Examiner Tip

Ensure you include explanation in your answer and use words such as 'because', 'causing' or 'due to' in your answer to explain either part of the sequence or the process.

Question 1 (b) (i-ii)

Candidates either had a sound geographical understanding of slumping or gave generalised answers. There was much confusion with soil creep as some answers were a hybrid of both processes. On part bii some candidates were unsure of what 'impact on coastline' meant and therefore gave generalised responses. Centres are advised to ensure candidates specifically learn processes.

(b) (i) Outline the process of slumping. (2)

When rocks dry out they contract/get smaller. Then when it rains the rocks change from the hard ~~hard~~ rock to a ~~softer~~ soft one because they absorb water. This soft rock can then collapse under its own weight.

(ii) State **one** impact of slumping on the coast. (1)

The cliffs moving inland & losing land.



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Examiner Comments

This answer shows a clear understanding of slumping. Good answers included reference to saturation and then the link to movement. There was some confusion over the speed of movement as some felt it was a slow process and therefore confused with creep. A clear impact on the coast is given by the candidate.



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Examiner Tip

Try to understand the difference between soil creep and slumping, and learn your processes.

Question 1 (c) (i)

This answer produced mixed responses as some candidates spoke generally on hard engineering while others incorrectly recognised the types of hard engineering in the diagram. Many candidates were able to recognise how groynes reduce longshore drift and some developed this into how this reduced erosion. Many candidates simply wrote about what the hard engineering methods did rather than describing the advantages. Answers which included 'durable', or 'cheaper than soft engineering methods due to lack of upkeep' often got to full marks as they offered something else in addition to 'protecting the coastline'.

Question 1 (c) (ii)

This question presented a struggle for many candidates who simply referred to coastal recession. Although the lead in to the question referred them to Figure 1b the focus of the question was on reducing the effects of coastal flooding, and subsequently those answers which concentrated on erosion were limited to Level 1. Many answers were generalised and made links to the work of the Met Office or DEFRA but did not have the specific facts to get beyond Level 2. Many of the best answers focused on building design in Malibu or Bangladesh and equally sound answers referenced the methods to overcome events such as Hurricane Katrina, Cyclone Alia or Sidr. This is a good example of where teachers must not wholly rely on the course texts as although they both serve an excellent purpose they do not cover all aspects.

(ii) Explain how the effects of coastal flooding are reduced.

Use examples in your answer.

(6)

Swanage Bay - Swanage Bay is made of clay and is easily washed away! 40-50cm per year is eroded in Swanage, they have done many things to reduce this, they have replaced 18 Groynes, this'll prevent longshore drift, they have put 90,000m³ of sand! They have also had a sea wall up protecting the Grand Hotel

wall up protecting the Grand Hotel since the 1920's. ~~At the~~ The Sea wall and beach replenishment costed £2.2 million. They need to protect Swanage Bay because if the houses fall down, people will not want to live there, losing business. They need to protect the Grand Hotel so they don't lose their business, if this happens people will automatically stop coming to Swanage Bay'.



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Examiner Comments

This was a typical answer which focused on coastal recession not coastal flooding. Although the answer is rich in specific detail it is held at the top of Level 1 as it had incorrect focus. The only creditable information was the reference to the sea wall.



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Examiner Tip

Have different case studies for coastal flooding and coastal erosion. Good examples for flooding include Bangladesh, USA or the Thames Barrier.

Question 2 (a) (i)

Most candidates were able to identify feature Z as a plunge pool.

Question 2 (a) (ii)

The vast majority of candidates were able to calculate the retreat at 25m. Those that did not were not accurate with their measurements.

Question 2 (a) (iii)

Many candidates were able to score 2 marks on this question however were limited by their inability to use evidence from Figure 2a. Many candidates took it upon themselves to explain the formation of a waterfall and not focus their answer on erosion, however, in doing so got the answer by default. There was good use of processes such as hydraulic action and abrasion, but very few candidates explicitly referred to evidence such as 'limestone' or 'sandstone' or the amount of retreat. It was not enough in this case to refer to softer or harder rock as evidence.

When the water falls into the ^{plunge} splash pool, some water is splashed back onto the softer sandstone, there by eroding it over a period of years, this will eventually lead to the formation of a cliff or a hangover ~~there~~ ^{of} the harder rock (Limestone). ~~It~~ Eventually there will be no support of the harder limestone so it will break off and the cycle will start again. (3)



ResultsPlus Examiner Comments

This was a good answer achieving full marks as the candidate gave direct reference to evidence and included clear reference to the erosion of the waterfall.



ResultsPlus Examiner Tip

Ensure you refer to evidence from the figure if asked to. When commenting on erosion, try to include specific reference to types of erosion to enhance your answers.

Question 2 (a) (iv)

There were a variety of responses to this question. Some felt it enough to write about two features and simply compare these. There was no credit for opposites, therefore in such cases, candidates would have at most scored 2 marks. Some candidates confused terminology and many candidates thought wetted perimeter got smaller downstream, without talking about it in proportion to channel size. Strong answers focused on the Bradshaw model characteristics, however, features of the upper and lower course were acceptable and therefore landform references were given some credit. Of those that answered well, clear links to the Controlled Assessment task will have helped candidates and a range of characteristics were given.

(iv) Compare the characteristic features of a river in its upper and lower stages.

(4)

In the upper course of a river the channel is very narrow and shallow, this means it holds little discharge and high amounts of large bedload. As the channel goes downstream it has more tributaries join, making the channel wider, increasing discharge and depth, also more discharge lowers the size and mass of bedload due to the erosion.



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Examiner Comments

This answer scored full marks, and offered a range of characteristics. The comparison was not explicit within any sentence but it was enough to show the differences. The candidate shows a clear understanding of the changes.



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Examiner Tip

Practise comparison of upper and lower course characteristics before the exam to ensure that you explicitly compare. Ensure that you know at least four different features of the upper and lower course.

Question 2 (b) (i-ii)

Slumping presented a challenge to some and no issue to others. Some confused it with erosion of the bank although the majority of candidates had some idea of the process. Most of the struggle with this question came in part bii as candidates could not identify an appropriate impact on river landscapes even though this phrase comes directly from the specification. Stronger answers to this part included a widening of the channel, or an increase in material in the channel.

(b) (i) Outline the process of slumping.

(2)

Slumping is the slowest mass movement. Soil hardens and gets cracks in it when it rains, water fills these cracks and cause the soil to slide due to gravity. The steeper the gradient, the faster it moves.

(ii) State **one** impact of slumping on river landscapes.

(1)

The river gets more material in it, leading to the formation of levees and lateral erosion.



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Examiner Comments

This answer confuses soil creep with slumping but has the basis of a good answer. In part bii the first part of the answer is credit worthy.



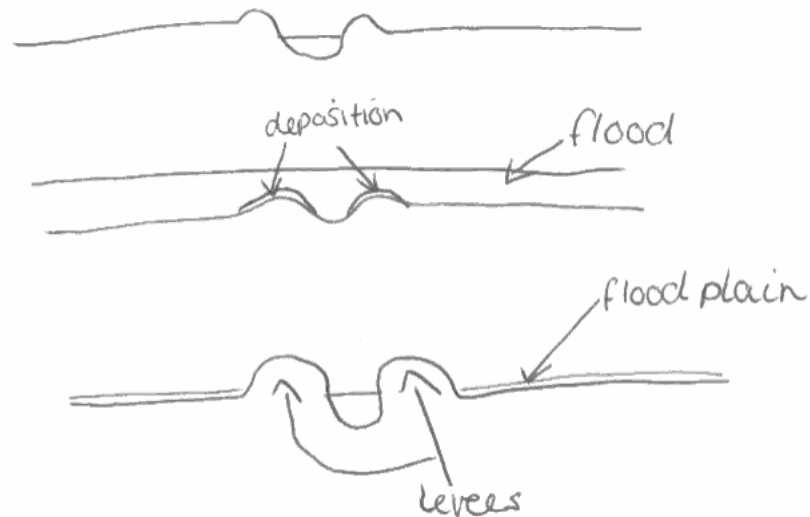
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Examiner Tip

Learn the processes of erosion, weathering and mass movement beyond the general meaning. Do not confuse types of mass movement such as slumping and soil creep.

Question 2 (b) (iii)

Many candidates were able to recognise a levee though some did confuse with a meander. Most candidates were able to score 2 out of 4 marks but were limited by a lack of explanation. The most common explanation given was for the cause of deposition. However, good answers also referenced sequential deposition and were able to comment on the temporal aspect to the formation. Some candidates were able to use their diagrams to show temporal change, or full sequence, in that they were numbered to show different stages of the formation.



When a river floods, the ~~the~~ ^{river} water breaks ~~over~~ its banks and floods the surrounding land because it can't hold all of its water. When it ~~is~~ a river floods, it ~~loses~~ loses energy because of this it drops its bed-

river floods. It ~~loses~~ loses energy because of this it drops its bed-load onto the surrounding land. It drops its heaviest bed load nearest the river. As ~~that~~ this happens more ~~the~~ humps next to the river are formed. These are called levees.



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Examiner Comments

This is a good answer which shows both full sequence and explanation. The diagram also shows sequence in three stages to show the progressive formation of the levee.



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Examiner Tip

Use of a clear diagram can aid your explanation. Make sure you include explanation - the easiest way to do this is to develop the reason for the process which leads to the formation of the landform.

Question 2 (c) (i)

Most candidates scored well on this question as they were able to elaborate on the effects in Figure 2b. Those that struggled on this question either did not focus on effects or gave effects which were not conceivably linked to the photograph. However, this generally presented little difficulty.

Question 2 (c) (ii)

This was answered better than the equivalent question on Coastal landscapes. There were, however, a lot of generic answers in reference to the work of DEFRA and the Met Office which reached a maximum of Level 2 answer. The strongest answers were on the river Nene and the various schemes put in place to counter flooding. These answers often had good references to specific detail and were able to explain.

River flooding can be reduced by making houses which are built inside flood plains flood resistant like replacing door frames with MDF or building the house over stilts. Hard engineering can be used by for example building embankments next to rivers this can contribute by stopping water escaping from its channel. Soft engineering can also be used, afforestation is a good example where trees are built and plants are built inside flood plains, the plants can intercept flood water and stop it from reaching settlements. Prediction can also be used through flood zoning, settlements can not be built inside flood plains to reduce surface run-off.

min-off.

Also flood warning systems can be put into place so when a flood is imminent a siren can be heard and mass evacuation takes place ~~inside~~ from the settlement.



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Examiner Comments

This was a typical response which referred to a series of generalised schemes to reduce the effects of flooding. A clear range of examples were given but no specific detail, therefore limiting the candidate to Level 2.



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Examiner Tip

Candidates must include facts or specific detail to support their points. Inclusion of a range of small examples are often more preferable than one major case study, however, the river Colne and Nene both offer good examples.

Question 3 (a) (i)

Although there were few responses to this section most of the candidates were able to correctly measure the distance between X and Y. The mark scheme allowed for a range of answers to include the different interpretations of the distance between X and Y.

Question 3 (a) (ii)

A surprising number of candidates misinterpreted the diagram and felt the glacier was retreating to the north. Careful study of the diagram clearly shows that the glacier was retreating to the south, with the terminal moraine included to help the candidate.

Question 3 (a) (iii)

This was poorly answered and some candidates had no idea what the type of moraine was. Some even put down terminal moraine, even though it is labelled on the diagram. Some candidates were able to identify N as medial moraine.

Question 3 (a) (iv)

Most candidates had some understanding of U-shape valley formation, however, many candidates were unable to offer explanation and subsequently many scored 2 and few scored 3. Explanation in this case could have been the reason for glacial movement or a development of process. Many of the diagrams included were helpful, and explanation can be annotated onto these.



The abrasive qualities of the glacier erode away the rock of the landscape that it passes over. A wide flat floor is created in the valley, with steep sides. There is a steep backwall from where the glacier started.



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Examiner Comments

Clear description of the landform but a lack of explanation resulted in a score of 2 out of 3.



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Examiner Tip

Ensure that you explain on landform questions. The easiest way to explain is to develop a process such as abrasion which is part of the formation.

Question 3 (a) (v)

This question was poorly answered considering candidates will have studied this topic. Four marks were achieved only by those who had a sound grasp of terminology and a clear understanding, and therefore candidates were able to compare. Strong candidates could recognise that they were both depositional processes, whereas others related the comparison to the movement of the glacier. Many confused ablation with abrasion which is understandable. Although these are difficult terms better understanding of terminology is needed on this topic.

lodgement is when pieces of rock or moraine get lodged in the base of the glacier. Ablation is when the glacier melts and rocks and other debris are left at the end of the glacier or in place where they were embedded when the glacier was ice. Both lodgement and ablation involve moraine which are pieces of debris or rock collected by the glacier during the erosional processes such as plucking, abrasion or freeze-thaw weathering.



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Examiner Comments

Although this answer offers a simplistic understanding of lodgement and a clear grasp of ablation, this candidate does make an explicit attempt to compare the two terms and subsequently received full marks.



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Examiner Tip

Ensure you learn terminology and are able to appropriately compare the differences between the processes.

Question 3 (b) (i)

The vast majority of candidates easily secured two marks here as many gave a comprehensive explanation of freeze thaw weathering.

Freeze-thaw weathering happens in rocks that can get wet at areas which the temperature varies above and below 0°C. In the day, water will get into cracks in the rock. It freezes at night, increasing in size by 9%, in the day it melts leaving a bigger crack. This process then repeats.



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Examiner Comments

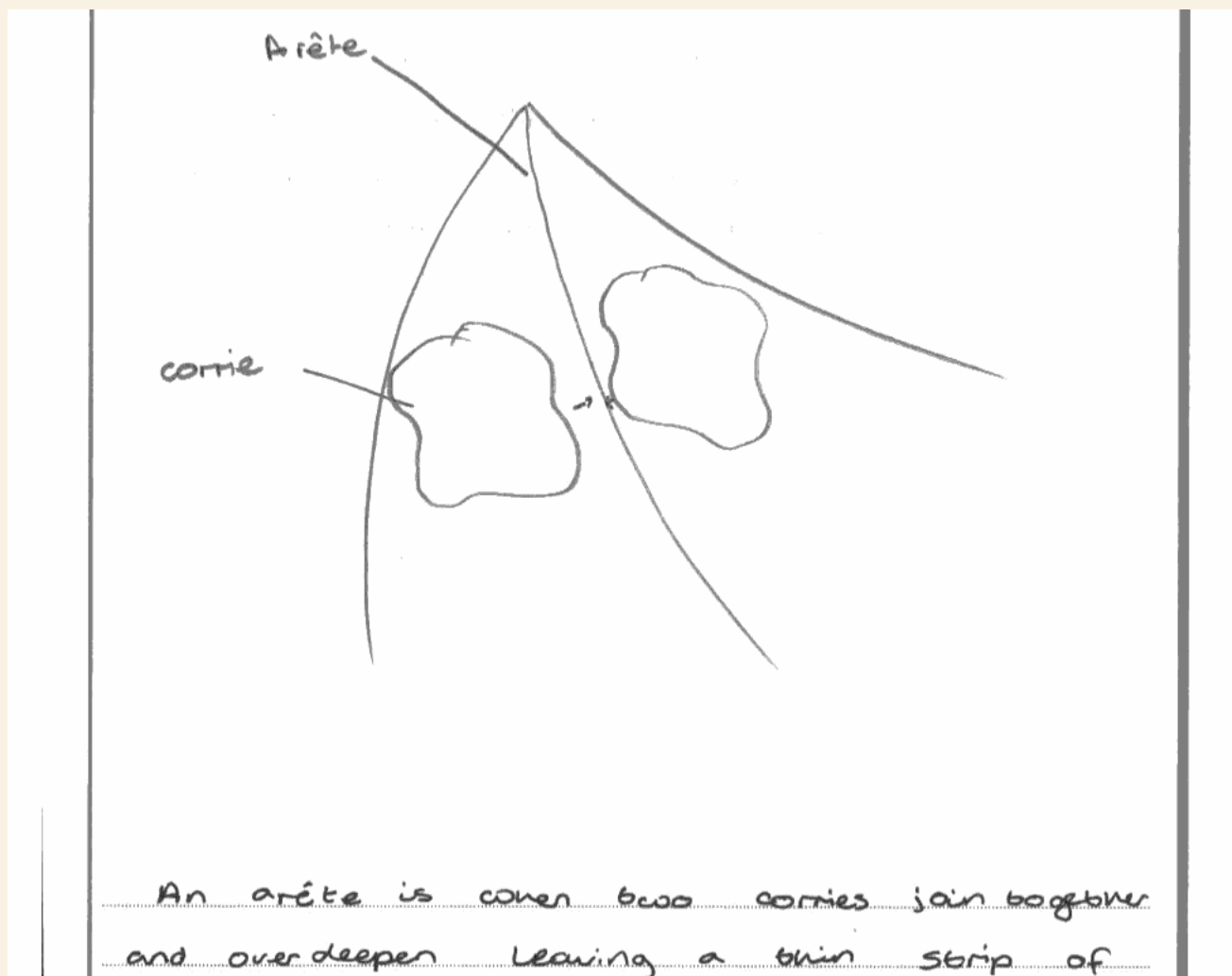
This answer is a good example of clear understanding with specific detail included as support.

Question 3 (b) (ii)

Answers produced a variety of answers, most of which were not relevant to the question. Those that had the correct focus sometimes repeated the answer to the previous question while others correctly identified scree or described moraine.

Question 3 (b) (iii)

There were two common types of answers, those that simply described what an arête was, and those that attempted to give detail on formation. Of those that tried to explain many failed and simply described arêtes as a 'ridge formed when two corries erode back to back'. Such descriptions were often accompanied by over-elaborate diagrams which must have taken a significant time to produce. Explanations were often limited as few developed the processes leading to arête formation, or parts of the sequence. Diagrams which showed progressive changes, therefore implying a temporal aspect to the answer were often the best. Good labelling can often enhance the response. In future candidates would be wise to try to learn the formation of arêtes or pyramidal peaks as a development of corrie formation.



and over deepen leaving a thin strip of land in between them. The overdeepening occurs by the process of abrasion when the edge of the corrie is worn away by the debris in the moving ice and snow collected in the corrie.



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Examiner Comments

This answer shows that the candidate has a clear understanding of the landform and uses an explanation of the process to get beyond two marks. However, it was felt that the candidate did not have a full sequence and therefore was limited to 3 out of 4.



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Examiner Tip

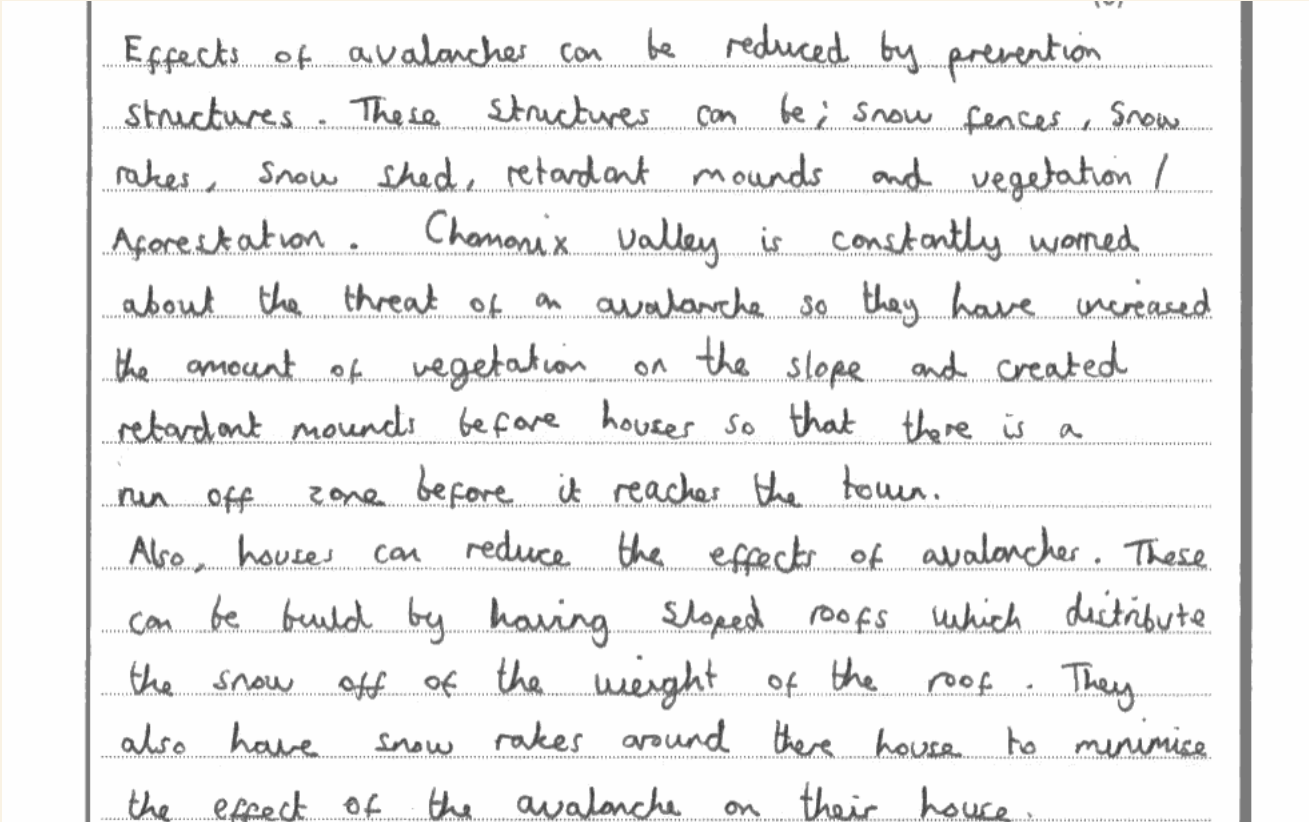
Explanation of landforms can be achieved by explaining either the process or part of the sequence. Practise of the less commonly understood landforms such as arêtes and pyramidal peaks needs to be treated as just as important as that of the more common corries.

Question 3 (c) (i)

Most candidates were able to recognise noise or vibrations, or ignoring warning signs as reasons for causing an avalanche. Many candidates scored at least one mark on this question, depending on the depth of development given in the answer.

Question 3 (c) (ii)

The vast majority of answers were limited to Level 2 marks as candidates struggled to provide specific detail to support their explanations. Most of the candidates who had used the course texts were limited by their examples in reducing effects specific to that particular place. This is a reminder to teachers that they should try to find examples which match to the specification and not wholly rely on the core texts. Good examples are abundant on the internet. However, candidates' knowledge of methods to reduce avalanche effects was often extensive. The majority of answers were in reference to Galtur or Montroc but many candidates were clearly hoping for a question on effects rather than reducing them.



Effects of avalanches can be reduced by prevention structures. These structures can be; snow fences, snow rakes, snow shed, retardant mounds and vegetation / Afforestation. Chamonix valley is constantly worried about the threat of an avalanche so they have increased the amount of vegetation on the slope and created retardant mounds before houses so that there is a run off zone before it reaches the town.

Also, houses can reduce the effects of avalanches. These can be build by having sloped roofs which distribute the snow off of the weight of the roof. They also have snow rakes around there house to minimise the effect of the avalanche on their house.

the effect of the avalanche on their house.

Also, to reduce the effect of ~~an~~ another avalanche on Mont Blanc, they have been setting off small explosions which in turn have created small avalanches. These are controlled and reduces the ~~is~~ overall effect of an avalanche if one happens because there will be less of a build up of snow



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Examiner Comments

Here is a classic example of a candidate who gives a variety of methods to reduce the impact of avalanches. However, little specific detail is included and names alone, without additional detail, were insufficient to help this candidate achieve Level 3 marks.



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Examiner Tip

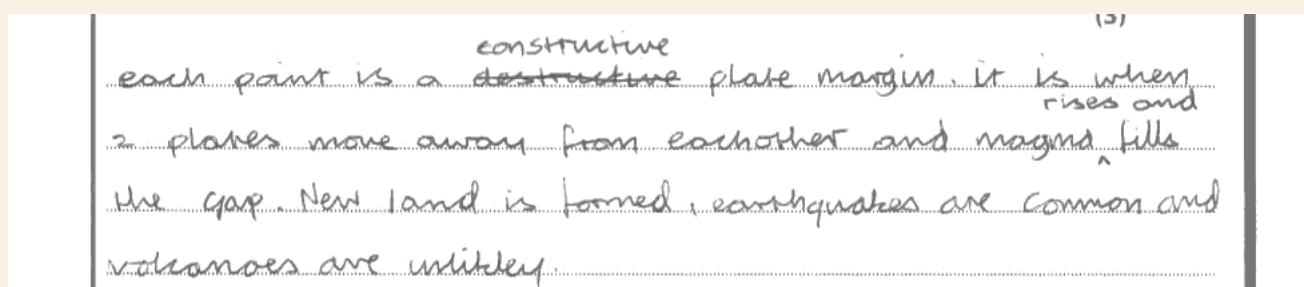
When preparing for case studies ensure that you have specific facts which cover all of the aspects of the specification which could be examined as a case study type question.

Question 4 (a) (i)

The vast majority of candidates were able to identify Y as having the most movement along the Mid-Atlantic Ridge.

Question 4 (a) (ii)

Although there has been a vast improvement by candidates in describing over the past two exam series, the vast majority of candidates scored only 1 mark in describing the movement along the plate boundary. Too many candidates tried to explain the movements, many providing an answer which would have served better on 4aiv. Good answers identified the divergence and then used evidence to describe the variations in movement along the plate boundary.



each point is a ^{constructive} destructive plate margin. it is when ⁽²⁾ rises and 2 plates move away from each other and magma fills the gap. New land is formed, earthquakes are common and volcanoes are unlikely.



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Examiner Comments

This was a classic example of candidates trying to explain divergence, hence scoring only 1 mark.



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Examiner Tip

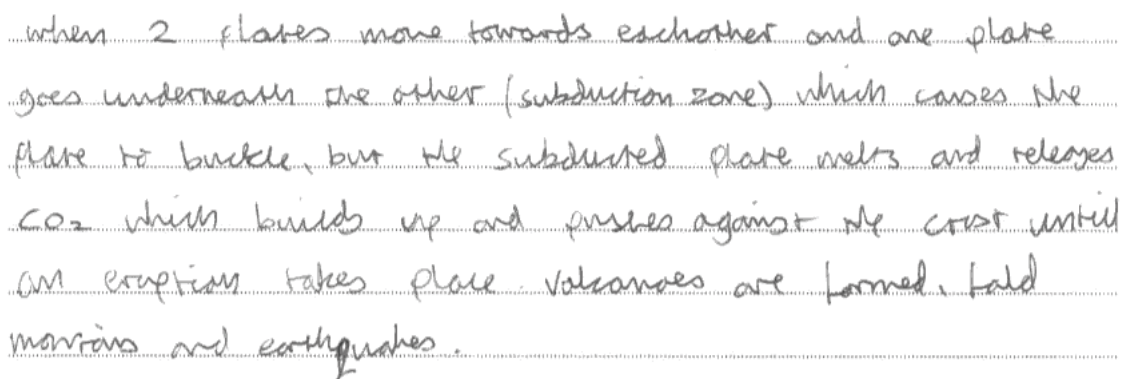
When describing always try to use evidence from the figure in support of your answer.

Question 4 (a) (iii)

Most were able to identify that the volcano would be located along a plate boundary at spot 1. Some even had locational knowledge and identified Iceland.

Question 4 (a) (iv)

A surprisingly few number of candidates were able to achieve full marks on this question, with many limited to just 2. Few were able to fully explain. In this case, convection of rising magma was the most logical explanation. Equally doming or fracturing of the crust could have been developed. To gain full marks candidates needed to show some evidence of temporal build up of the volcanic edifice, which often begins life under the sea. Some candidates confused divergence with hotspots, while others confused it with convergence - such answers scored zero.



when 2 plates move towards each other and one plate goes underneath the other (subduction zone) which causes the plate to buckle, but the subducted plate melts and releases CO₂ which builds up and pushes against the crust until an eruption takes place volcanoes are formed, fold mountains and earthquakes.



ResultsPlus Examiner Comments

This answer was typical of candidates who lacked an understanding of the term divergence. Unfortunately, such answers referencing subduction scored no marks.



ResultsPlus Examiner Tip

When learning plate boundaries, ensure that you can offer appropriate reasons for the formation of volcanoes or earthquakes at that particular boundary. Reasons for volcanic activity at divergent plate boundaries are different than those at a convergent plate boundary.

Question 4 (a) (v)

Although many candidates could identify a series of features from each plate boundary many were limited to 3 marks as they did not compare at any point. Candidates must remember that comparisons can either be similarities or differences and in this case good answers easily identified differences in movement or similarities in features such as earthquakes. A large number of candidates confused conservative with divergent plate boundaries and therefore limited the marks they could gain.

Convergent plate boundary is when 2 plates of any sort; e.g. oceanic + continental, when they hit each other with tremendous force to either create volcano or earthquake. The volcano is caused when ~~the~~ the oceanic plate goes underneath the continental because its denser which lets out magma to melt through the plate and ooze into the surface. while conservative plate boundary is when 2 plates slide or rub along each other, this can only make earthquakes because there is no gas for magma to come out of mantle. 1 example of conservative.



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Examiner Comments

This answer has a range of features from each plate boundary and the word 'while' was enough to allow implicit comparison. This response scored 4 marks.



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Examiner Tip

Candidates should learn the features specific to each type of plate boundaries. They should then practise, using specific comparative terms, to draw similarities or differences between the features at plate boundaries.

Question 4 (b)

Most candidates were able to offer some reasons for living near areas affected by earthquakes, and familiar answers included: poor economic status, family ties or living in earthquake proof structures. However, many confused earthquake areas with volcanic areas and these reasons are not necessarily relevant for both areas. For example, many places have fertile soils and this is specific to volcanic zones, but not relevant to earthquake zones.

People continue to live in areas affected by earthquakes due to the advances in earthquake proof buildings. These buildings^{often} have reinforced foundations and huge ball bearings on the roof which counteract the tremors caused by earthquakes. Another reason they continue to live in these earthquake areas is awareness. Among communities there are often emergency meeting points and plans which take place at times when necessary. Children are often educated about what to do in situations, and parents are too.



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Examiner Comments

This candidate scored full marks as they mentioned earthquake proof buildings and then developed the point. In addition, they hinted at the idea of planning as a reason why people may choose to live there. The answers here are focused on earthquake zones.



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Examiner Tip

Do not confuse reasons for living near volcanoes with reasons for living in an earthquake zone.

Question 4 (c) (i)

There were some good answers to this question with many identifying reference to proofing buildings, or preparing plans to inform people in the area, or even referring to education. It was impressive to see reference to specific examples such as National Hazards day in Japan which enhanced answers. It was perplexing to see the number of candidates who suggested areas could be evacuated before the event, suggesting that earthquakes could be accurately predicted.

(3)

Planning before the event could have reduced the effects of these ~~see~~ earthquakes because of these reasons:

- ① Housing planning: building houses which are close to each other allows the earthquake to do more damage while if they built the houses separately, this may reduce the effects of the earthquakes.
- ② Housing materials: By building houses which ~~are~~ with steel metals and vibration machines underneath and within the building, this allows the house to withstand the movement and even so, it is massive, the vibration machine underneath the building would allow the building to bounce and shock the strength of the earthquake.
- ③ Health Areas (Area evacuation areas): These areas allow people to evacuate even before the earthquake empty and that helps people to ~~save the~~ save the lives and also minimise the effects of the earthquake.



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Examiner Comments

This candidate scored 3 marks for the reference to land use planning and a development of building materials, with specific reference to the pictured earthquake. No credit was given for the reference to evacuation.



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Examiner Tip

Try to learn at least three different methods to overcome effects of earthquakes or volcanoes. This will give you a range of things to mention in the exam. Use of examples where possible is always beneficial.

Question 4 (c) (ii)

This was by far the best answered of the four case study questions in section A. Many candidates were able to identify a series of effects and include specific facts as support. The most common references were to either the Izmit or Haiti earthquakes, or the Montserrat or Icelandic volcanic eruptions. Some candidates, however, struggled to get beyond 4 marks as they were unable to fully explain the effects. Some candidates also tried to cover both an earthquake and a volcanic eruption therefore misreading the question.

The effects of a volcanic eruptions such as the Montserrat Volcanoe June 25 1997 - 1999. Even though this only killed 19 people but it was devastating. The large dome on top of the volcano collapsed ejecting hot rocks, ash which created a pyro-clastic flow, this is ~~extreme~~ ^{extremely} hot and runs at 110 mph approximately, this killed nearby farmers who were planting crops and incinerated through the entire city forcing people to evacuate country while most already evacuated. The pyro-clastic flow buried the whole town with ash, melted through plastics, glass and aluminium. While some ⁷ were trying to hide in their house ~~to~~ ^{about} but got burnt. Before all this ~~out~~ ^{when the} volcano gave signs of its eruption in 1997, ~~7000~~ ^{out of the} ~~per cent of the~~ 11,000 people, 7000 ~~were~~ evacuated ~~to~~ ^{to} Neighbourly Countries, ~~3000~~ ^{4,000} went to UK and the rest went to USA. Those who died were in the exclusion zone and because they didn't hear the alarm ~~that~~ ^{and} ~~they~~ ^{they} were too slow that's why they died.

were too slow that's why they died.

A volcano is mainly dangerous ~~to~~ when it releases pyro-clastic flows, but when it erupts ~~with~~ lava it will only ~~burn~~ ^{melt} everything in its way and can be stopped easily.



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Examiner Comments

This was a good example of a well understood case study which achieves a Level 3 mark. Lots of specific detail is given, with some explanation. Specific facts were not credited for detail of the event, e.g. time and date.



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Examiner Tip

Ensure you can explain your effects not just list them off.

Question 5 (a) (i)

A pleasing number of candidates were able to secure full marks on this question, however, a disappointing number of candidates failed to draw straight lines in construction of their pie chart.

5 (a) Study Figure 5a.

It is a pie chart showing types of waste in Surrey.

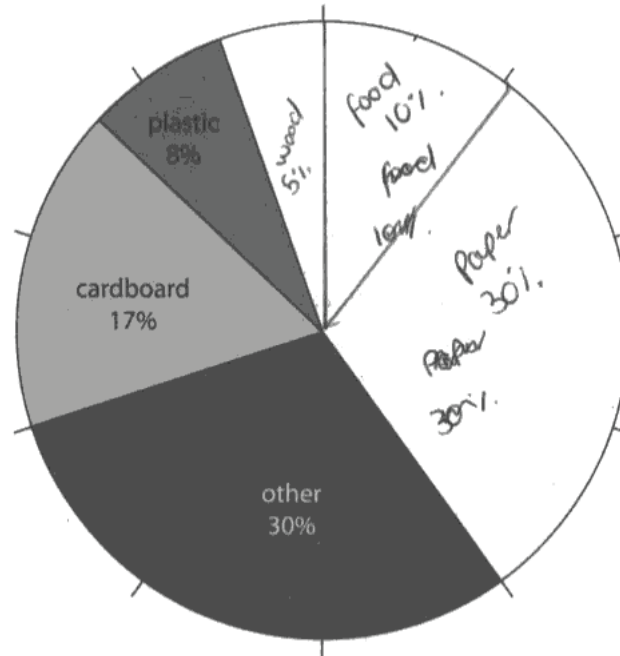


Figure 5a

(i) Complete the pie chart.

Use the data in the table below.

(2)

Type of waste	Percentage (%)
Food	10
Paper	30
Wood	5



ResultsPlus Examiner Comments

This example only scored 1 mark as the candidate was not precise in this line drawing, especially when markers were given to represent each 10% interval.



ResultsPlus Examiner Tip

Make sure you use a ruler when drawing a line and be precise.

Question 5 (a) (ii)

Candidates scored well on this response and often were able to offer at least two reasons. Some of the lower scoring candidates restricted themselves by repeating the words in the question and suggesting that High Income Countries (HICs) produced more waste as they had more money. Equally candidates were not credited for opposite reasons, for example; HICs read more newspapers therefore have more paper waste, while LICs read less and have less paper waste. This would only be worth one mark. Good answers had a range of reasons and avoided generalisations, so commented on packaging, increased food purchases, e-waste, or the concept of a consumer society.

(ii) Suggest reasons why people in High Income Countries (HICs) create more waste than people in Low Income Countries (LICs).

(4)

Have a higher income so there have more resources. e.g there is more packaging involved in products also HICs have more paper thrown away as in LICs less people can read. Also LICs recycle or make use of resources e.g. wood for buildings

(iii) Outline how HICs dispose of domestic waste



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Examiner Comments

Four simple points are made, but there is enough for full marks. Reference to more resources and therefore more packaging was better than suggesting that HICs had more money. There is a good balance between points on HICs and LICs.



ResultsPlus

Examiner Tip

On questions referring to differences between HICs and LICs, be careful not to get drawn into over simplification e.g. too much money; too poor.

Question 5 (a) (iii)

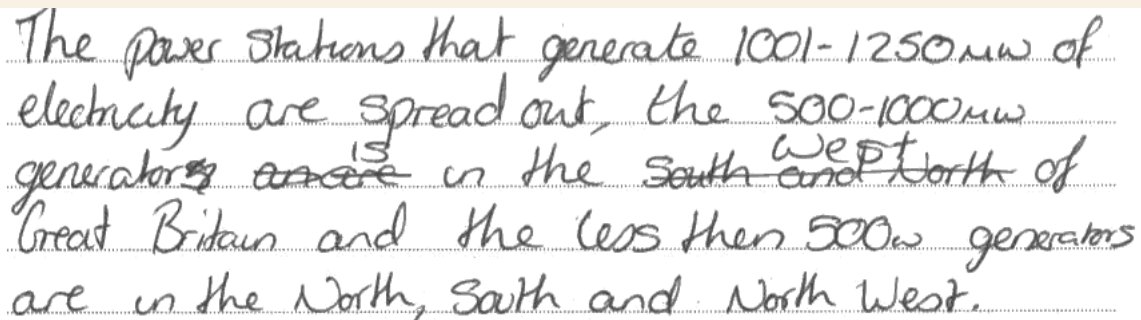
Many candidates were able to get at least two marks by listing recycling, incineration and landfill. Some candidates additionally commented on waste exporting. Good answers focused on an example and many candidates gave specific information on waste in Germany. Some candidates limited their answers by focusing on personal waste disposal or by concentrating on one form of waste disposal e.g. recycling. Overall this was a well answered question.

Question 5 (b) (i)

The vast majority of candidates chose a correct location in answer to this question.

Question 5 (b) (ii)

Candidates found this question tricky as there were many different points of focus. Many concentrated on the coastal location or the evenly spaced distribution but beyond this many just gave a tour of UK power stations. Some good answers were able to calculate numbers of power stations around different parts of the UK or were able to recognise the lack of nuclear power stations away from the coast. Sticking to the general trends and quoting evidence from the map would have enabled candidates to score at least 3.



The power stations that generate 1001-1250mw of electricity are spread out, the 500-1000mw generators ~~are~~ ^{is} in the south and ~~North~~ ^{West} North of Great Britain and the less than 500w generators are in the North, South and North West.



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Examiner Comments

This candidate received credit for the concept of 'spread out' and then evidence from the map. However, like many other candidates the rest of the answer lacked focus.



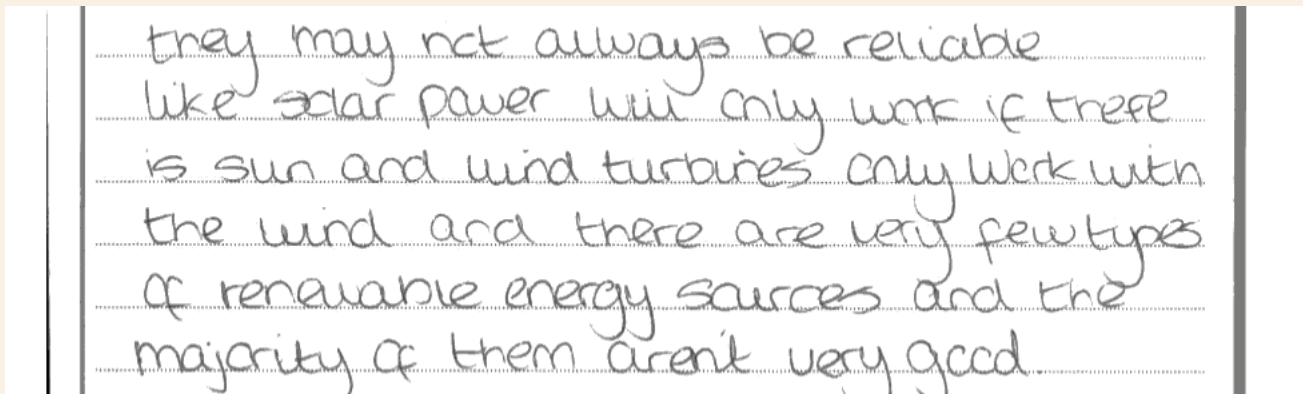
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Examiner Tip

When describing distribution give the general trend, map evidence and then a description of what is found in different parts of the map.

Question 5 (c)

Most of the candidates scored well on this question and were able to identify appropriate renewable resources, although some did refer to nuclear and wood. The main constraint on candidate performance was lack of explanation or repetition of the same point, for example, wind turbines are unreliable as they need consistent wind, and solar panels only work in the day. Candidates need to understand the difference between description and explanation.



they may not always be reliable
like solar power will only work if there
is sun and wind turbines only work with
the wind and there are very few types
of renewable energy sources and the
majority of them aren't very good.



ResultsPlus

Examiner Comments

This is a classic example of a candidate repeating the same point in reference to two different types of renewable energy.



ResultsPlus

Examiner Tip

Candidates need to learn different advantages and disadvantages for different types of energy sources. This will allow the candidate to avoid repetition in the exam.

Question 5 (d)

This question was very similar to the case study on the January 2011 exam. Even so, many candidates struggled to tackle this question and get above Level 2 marks. Too many candidates focused on reducing energy waste for the individual therefore limiting themselves to Level 1 marks. Candidates needed to focus on methods employed on a local, regional or national scale as well to score highly. Those candidates that had learnt specific detail found it easy to access Level 3, and there were some good references to CHP schemes. It was disappointing to see a lack of reference to national schemes employed by the government or environmental organisations to reduce energy waste. A few candidates were still referring to reducing waste through recycling schemes rather than focusing on reducing energy wastage.

The UK can reduce its energy wastage in a number of ways. When the heating is on in a house ensure all the doors and windows are shut to save heat energy. Also insulation could be fitted to prevent as much heat going out the roof and walls. Electrical items such as TVs should be turned off at the mains and not left on standby. When it's day time or noones in the room lights should be turned off. When using the washing machine put a full load in instead of doing ~~two~~ multiple smaller loads of washing. When making a cup of tea only fill it to however much you need. ~~Also~~ Also streetlights could be on for shorter periods of time. Lights in schools that are on when not needed should be turned off.



ResultsPlus Examiner Comments

This candidate mainly focuses on the individual, but does have reference to other ideas. There is some explanation therefore this would be a Level 2 response.



ResultsPlus Examiner Tip

Ensure that you focus on reducing energy wastage, and make sure you include specific facts in your answer. It would be nice to see more focus on national scale responses.

Question 6 (a) (i)

A pleasing number of candidates were able to secure full marks on this question, however, a disappointing number of candidates failed to draw straight lines in construction of their pie chart.

6 (a) Study Figure 6a.

It is a pie chart of domestic water usage in Canada, a High Income Country (HIC).

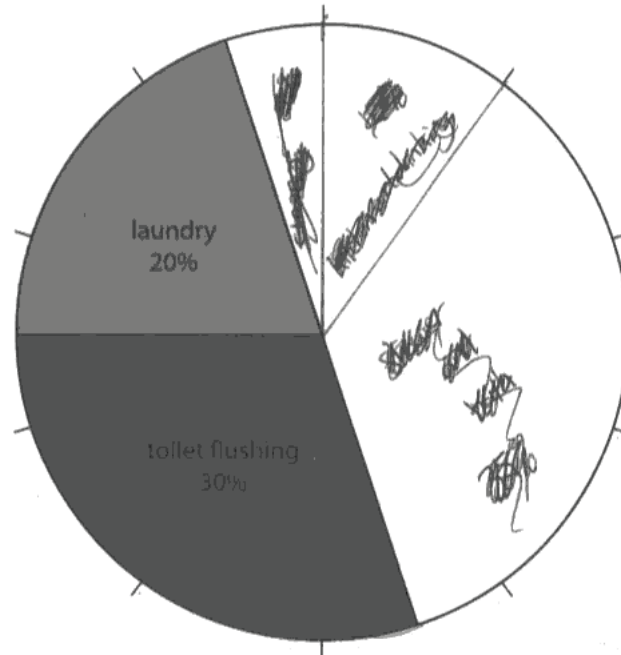


Figure 6a

(i) Complete the pie chart.

Use the data in the table below.

(2)

Waste Usage	Percentage (%)
Kitchen and drinking	10
Shower and bath	35
Cleaning	5



ResultsPlus

Examiner Comments

Although this candidate accurately draws the lines on the pie chart they fail to give the labels therefore score 1 mark.



ResultsPlus

Examiner Tip

Ensure that when drawing pie charts that a ruler is used and the lines are precise.

Question 6 (a) (ii)

Many candidates scored well on this question and were able to secure full marks. However, some candidates were limited by their inability to suggest reasons. Some candidates often wrote opposite points and no credit was available for this. Equally some candidates repeated the wording of the question in their answers by suggesting that HICs used more water as they had more money, without offering any specific information. Good answers focused on water supply, or water usage differences.

(ii) Suggest reasons why water consumption differs between High Income Countries (HICs) and Low Income Countries (LICs).

(4)

In HICs water can be piped to houses so domestic usage is more. Also in HIC's irrigation ~~plants~~ systems use more water than the use of buckets of water in LICs. In HIC's there are more appliances that use water increasing domestic usage. Also there are more factories in HIC's which use more water in industry.



ResultsPlus Examiner Comments

This candidate was able to offer a series of reasons for the differences and therefore was able to achieve full marks.



ResultsPlus Examiner Tip

Do not offer opposite points when asked to suggest reasons for differences as these do not gain credit.

Question 6 (b) (i)

Although a simple question many candidates gave the answer of South or South East and therefore must have misinterpreted the question to mean which area has least water. Those that read the question carefully easily scored a mark on this question.

Question 6 (b) (ii)

This answer was well received and many scored 4 out of 4. Evidence came in the form of named areas so many received some credit. Good answers recognised the decreasing water supply problems further north with the exception of the South West. Most were able to access full marks with an area by area description of the water supply problems. However, many candidates tried to offer explanation on this response and subsequently repeated themselves on the following question. Please understand the difference between description and explanation.

In general, the further south and the further east, the more serious the water supply problems. The ~~highest~~ most 'serious' issues are in the South and South-East, whereas the North-West and North-East both are ranked as 'low'. Both the East and West Midlands are 'moderate' and it is only the South-West with its 'low' status disrupts the "North = low, South = Serious" pattern, suggesting the further East also increases severity.



ResultsPlus

Examiner Comments

A good answer with clear focus on the pattern and use of map evidence.



ResultsPlus

Examiner Tip

Ensure in a describe question that you do not explain.

Question 6 (b) (iii)

Many candidates found themselves repeating information in this response if they had tried to explain in the previous question. Most focused on the rainfall population imbalance which was the intended focus of the question, however, some candidates focused on seasonal temporal variations which were not credited. Most answers were limited to 2 marks as they simply suggested that the South East had the most people, therefore demand, yet the least rainfall and then giving the opposite for the North. Good answers gave specific detail about amounts of rainfall or places in England or gave reference to the problems of leaky pipes in urban areas. This question was one of the most challenging for pupils who opted for Watery World.

Britain has supply - population imbalance. The areas of highest rainfall are those of lowest demand, and the lowest rainfall of highest population and ergo demand, accentuating the issue in low - rainfall areas. Seasonal imbalance is also an issue, all of Britain has the highest need for water for agriculture etc. in the summer months, and this ~~water~~ when supply is the lowest, thus it must be stored and transported.

(c) Explain how HICs manage their usage of water in industry and agriculture and transport.



ResultsPlus Examiner Comments

This represents a typical answer of a candidate who offers little more than high demand, low rainfall. They go onto limit themselves with reference to seasonal variation.



ResultsPlus Examiner Tip

Understand the difference between reasons for spatial variation in water and seasonal variation in water.

Question 6 (c)

This was surprisingly well answered and many candidates were able to access full marks. Those that did not often failed to explain their answers fully or lacked focus on both industry and agriculture. However, there were some excellent references to drip irrigation systems and the various water saving measures employed at the Walkers and Cadbury production plants.

In MICS water usage in industry has been made more efficient by recycling water. Furthermore industries such as Walkers Crisps have added 30 water meters to work out where most water is used and reduce this so overall they have saved £700 million litres of water a year, reducing water usage by 30%. In agriculture less has been done, as sprinklers use 79 litres of water per second, the way this has been managed is to only use them for set periods of time and water is also collected through rainwater harvesting.



ResultsPlus Examiner Comments

This was an excellent answer, scoring full marks, which had clear focus and specific facts on both the industrial and agricultural management. This type of response was not unusual.



ResultsPlus Examiner Tip

Use of specific facts or examples to support your point can often gain you credit.

Question 6 (d)

When this topic appeared in June 2010 it presented problems for candidates. It did so again this time. The syllabus refers to water management schemes separately from appropriate technology, and industrial and agricultural management schemes and therefore these answers were credited only to Level 1. Larger scale schemes were able to gain credit beyond Level 1, however, many of the answers told a story of a case study learnt. References to conflict case studies were generally held at Level 1 marks unless they were specific on the reasons. Equally reference to water (river) management tended to be held at Level 1 as the focus here was not on managing water as a resource. However if specific reasons for such schemes were given they could access the higher Levels. Most answers focused on Sydney Olympics or the Three Gorges Dam. In the case of the Three Gorges Dam many candidates simply wrote about the advantages and disadvantage of the scheme. As the question requested reasons for the scheme the disadvantages were usually discounted. It appears that many centres who opt for Watery World need to carefully coach their candidates through the various options available to candidates in the case study question.

Chosen water management scheme Three - Gorges - China

Three - Gorges water management scheme was set up to provide a reservoir for water supply in the area. It also incorporated a dam that can produce hydro - electric power by turning turbines and ~~int~~ ^{turn} generators that are in the dam when water passes through it. The scheme was ~~also~~ ^{mainly} designed, with flood control in mind, it has a control capacity of over 15 ~~000~~ million litres of water that serve to protect the agriculture and housing of 15.4 million people from flooding. The scheme was also designed to improve transport and navigation, allowing ships to travel right up the Yangtze, providing the area with more commerce, raw goods, and ultimately a boomed economy. Tourism

and ultimately a boomed economy. Tourism was also impregnated into the scheme with the 'Tanzilins' providing a panoramic view of the area. In 2007 alone it had 800,000 visitors providing an \$1,000,000 to the economy.

(Total for Question 6 = 25 marks)



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Examiner Comments

This answer was typical of those that focused on the three Gorges Dam. It had clear specific facts and some explanation and therefore accessed Level 3 marks.



ResultsPlus

Examiner Tip

Know which case studies to use for conflict case study and which to use for a water management scheme.

* (d) Choose an example of a water management scheme you have studied.

Explain the reasons for the scheme.

(6)

Chosen water management scheme Desalination

This is a process in which the water from the sea is taken out and made into clear water.

The advantages of this is that there is enough resource and there will be enough to distribute to the whole UK.

The disadvantage of this is that it would be destroying habitats, and it is too expensive because you will need to get the right research and equipment for the ~~sky~~ sea.



ResultsPlus

Examiner Comments

This was an example of an inappropriate scheme which was kept at Level 1.

Summary

This paper continues to be well received by most centres. However, candidate performance on case study questions has improved and it is pleasing to see the inclusion of specific case detail. It would be nice in future to see more centres attempt the Glacial landscape questions. Well done to all candidates for your efforts.

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