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Int GCSE Geography 4GE1 01R

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Introduction

This paper consists of two sections from which candidates answer two 25 mark questions from section A and one 20 mark question from section B. The total paper marks are 70.

The exam includes multiple-choice questions, short, open response, calculations and extended response questions. The exam command words used in the paper are defined in the specification. Each of the questions is mapped to one or more of the Assessment Objectives (AOs).

In section A, river environments, coastal environments and hazardous environments are covered. Candidates are required to select two out of three questions.

In section B candidates choose one out of three fieldwork questions relating to river environments, coastal environments and hazardous environments.

It is important that candidates focus on the requirements for each command word and the Assessment Objective (AO) distribution, particularly for the longer response 8 mark questions, to ensure they access the full range of marks available.

Please note that in this report the examiner comments made for all question 5 parts also apply to all of question 4 and question 6. This is because the questions are in parallel and the resources very similar. Therefore, the last question in this report before the summary advice is Q05(e).

Question 1 (b)(ii)

Candidates accessed this question well and were able to state one physical cause of river flooding. On rare occasions, candidates stated a human cause of river flooding and some responses were too vague for credit, eg impermeable surfaces. This needed to be more specific to ensure they demonstrated they were not talking about concrete/tarmac but rather rock/soil type to accurately answer the question.

(ii) State **one** physical cause of river flooding.

(1)

Heavy rainfall

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1 mark:

Heavy rainfall (1).

Rainfall on its own would not have been credited.

(ii) State **one** physical cause of river flooding.

(1)

Urbanisation

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Examiner Comments

0 marks:

This is human cause for flooding and so does not answer the question.

(ii) State **one** physical cause of river flooding.

(1)

~~Short- lag~~ Impermeable surfaces.

ResultsPlus
Examiner Comments

0 marks:

Impermeable surfaces is too vague for credit as it needs to be clearly linked to a physical cause. So they would need to have mentioned either geology/rock or soil.

Question 1 (b)(iii)

A significant proportion of candidates were able to achieve 2 marks on this question. As the factor temperature was provided in the question stem, candidates were not given credit for stating whether the temperature was hot or cold. To gain the development mark they need to explain the impact on the river regime.

(iii) Explain **one** way temperature can affect river regimes.

(2)

If there is hot temperatures like during the summer there will be more evapuration which remove water from rivers therefore lowering the discharge, therefore the river regime for the summer will be lower on any time there is a rise in temparature

ResultsPlus
Examiner Comments

2 marks:

During summer there will be more evaporation (1) which will remove water from the rivers therefore lowering discharge (1).

(iii) Explain **one** way temperature can affect river regimes.

(2)

Increased temperature can increase river discharge as increased temperature will cause melting of many ice caps and glaciers in mountains, ~~which~~ which into water will flow into a river, thus increasing river discharge

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Examiner Comments

2 marks:

Increased temperatures can increase river discharge (1) as it causes melting of ice in mountains which will flow into a river (1).

(iii) Explain **one** way temperature can affect river regimes.

(2)

hot weather can evaporate the water.

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Examiner Comments

1 mark:

Hot weather can evaporate the water (1).

There is no credit for stating whether the temperature is hot or cold as the question stem specifically asks about temperature. This response needs to explain why hot weather would increase discharge.

Question 1 (c)

This question requires candidates to use a resource (Figure 1a) showing a diagram of a river's long profile and cross section in the upper, middle and lower courses. The first mark is awarded for identification of a relevant piece of evidence with the second mark awarded for the reason why this change occurs.

Candidates generally coped well with the demands of this question, although, a proportion of responses only stated what the characteristic and reason was for the upper course in their first point and what the same characteristic was in their second point and this limited the response to 2 marks as the focus of the question is on changes in the long/cross profiles.

Candidates should be reminded they can only gain AO3 credit for evidence specifically shown in the resource; some responses stated changes like bigger bedload, for which there is no evidence shown in the resource, limiting the response to just AO2 marks.

(c) Study Figure 1a in the Resource Booklet.

Suggest **two** reasons the river channel cross section changes along a river.

(4)

1 As water flows slower in cross-section A, there is less hydraulic action to push out the lower sediment of the river bedload, leading to the river being less deep in Area A than C.

2 As 2 streams converge before Area B, the river discharge is greatly increased, leading to the river expanding to accomodate more water. This is why the river width in B and C are far greater than A.

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4 marks:

As the water flows slower in A there is less hydraulic action (eroding the bedload) leading to the river being less deep in A than C (1).

As two streams converge before area B the river discharge is greatly increased (1) leading to the river expanding to accommodate more water. This is why the river width in B and C are far greater than A (1).

(c) Study Figure 1a in the Resource Booklet.

Suggest **two** reasons the river channel cross section changes along a river.

(4)

1 The speed of the water increases which leads to a higher rate of erosion further down the river.

2 As material gets carried down the river, it becomes wider due to the rocks eroding the river bed.

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Examiner Comments

3 marks:

Speed of water increases which leads to higher rates of erosion (1). There is no reference to anything shown on the resource and so no AO3 credit can be awarded.

As material gets carried down the river it becomes wider (1) due to the rocks eroding the riverbed (1).

Although the start of the response is a little unclear they are stating the river channel becomes wider downstream which is considered just enough to gain the AO3 mark as this is shown in the resource.

(c) Study Figure 1a in the Resource Booklet.

Suggest **two** reasons the river channel cross section changes along a river.

(4)

1 A's cross section is small because all rivers start as a stream at a high altitude and ~~ggg~~ erodes bigger as the altitude decreases, but part A is small because the ~~water~~ river has just started to form.

2 C's cross section is larger because it is the mouth to the ocean. It is where the river carries the most sediment to bring to the ocean

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2 marks:

This response gets 2 AO3 marks but there is no clear explanation for why the river changes along it's course.

A's cross section is small because it is where a river starts (1).

C's cross section is larger because it is the mouth to the ocean (1).

(c) Study Figure 1a in the Resource Booklet.

Suggest **two** reasons the river channel cross section changes along a river.

(4)

1 Erosion: the land around the river is affected through it causing the form of the cross section to alter

2 Weather conditions can affect the stream or the river causing the cross section to also be affected.

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Examiner Comments

1 mark:

Erosion: (eroding) the land around the river (1).

This response is awarded 1 mark for AO2 (just). This is the correct process identified with a very simple idea that the land around a river is eroded.

There is no credit for the second point and no accurate reference to a change shown on the resource.

Question 1 (d)

The vast majority of candidates achieved the mark for this question.

Question 1 (e)

For this question candidates are required to explain one reason why rivers deposit sediment. It is often these 3 mark questions which candidates find most demanding as it is challenging developing one point in sufficient depth to be awarded full marks.

Most candidates were able to identify a correct reason linked to a decrease in energy. However, fewer responses demonstrated the detailed explanation for why the loss of energy happens.

(e) Explain **one** reason why rivers deposit sediment.

(3)

One reason is it loses power. For example in a delta where the rivers speed is reduced due to the sea's opposite push, it no longer has enough power to carry sediment and so deposits it leading to a delta.

ResultsPlus
Examiner Comments

3 marks:

In a delta the rivers speed is reduced (1) due to the sea's opposite push (1) it no longer has the power to carry sediment and so deposits it (1).

(e) Explain **one** reason why rivers deposit sediment.

(3)

One reason is the decrease in velocity of the river. If the river has high velocity sediment is carried along the river however at parts with low velocity for example the inside corner of a meander sediment is dropped.

ResultsPlus
Examiner Comments

2 marks:

The decrease in velocity (1) on the inside bend of a meander means sediment is dropped (1).

This response needs to explain why velocity is lost on the inner bend of the meander to gain the third mark.

(e) Explain **one** reason why rivers deposit sediment.

(3)

Because carrying sediment requires a lot of energy. When the river loses energy the sediment is deposited because there isn't enough ~~to~~ energy to carry it.

ResultsPlus
Examiner Comments

1 mark:

When the river loses energy (1) sediment is deposited.

This candidate repeats the statement about a river losing energy more than once but does not explain any causes for the loss of energy and therefore, cannot be awarded more than 1 mark.

(e) Explain **one** reason why rivers deposit sediment.

(3)

When the river floods, the water brings the sediment that has eroded out of the river. Erosion like abrasion, attrition, corrosion and hydraulic action erodes the breaks the river channel and bed as depositing then as sediment into the river water.

ResultsPlus
Examiner Comments

0 marks:

This candidate has become muddled as they appear to be trying to explain that erosion breaks rock down, this is then deposited on the riverbed. However, at no point do they provide a reason why the material is dropped.

Question 1 (f)

This question requires candidates to identify a strategy used to prevent flooding and explain how this helps to prevent flooding.

Candidate responses were generally strong for this questions, they are clearly aware of the different types of river management and how these work to reduce flood risk. Where candidates did not achieve full marks was usually because they developed their responses by describing impacts or advantages of the strategy rather than explaining how it works to reduce flooding.

(f) Explain **two** ways to prevent river flooding.

(4)

1 Build flood walls or artifical levees to prevent the water from escaping the river when it ~~em~~ experiences high river discharge. This is a hard engineering solution to prevent river flooding.

2 Dredging is a hard engineering solution to prevent river flooding. It increases the depth of the river by digging out the bottom, increasing the river capacity and reducing the risk of floods.

ResultsPlus
Examiner Comments

4 marks:

Flood walls (1) prevent the water from escaping when it experiences high discharge (1).

Dredging (1) increases the depth of the river increasing the capacity (1).

(f) Explain **two** ways to prevent river flooding.

(4)

1 not building on the flood plains; when there is no construction on flood plains, it is much more efficient at absorbing the water.

2 creating dams; will bring the water else where rather them the rivers.

ResultsPlus
Examiner Comments

3 marks:

Not building on floodplains (1) (this is enough for the idea of floodplain zoning) when there is no construction it is much more efficient at absorbing water (this is enough for the idea of the surface remaining permeable) (1).

Creating dams (1). There is no credit for the development as it is too unclear exactly what they are explaining.

(f) Explain **two** ways to prevent river flooding.

(4)

1 One way to prevent river flooding is by making river bed deeper so that the water doesnt flood out. And so that water doesnt form a harm surrounding

2 Another way to prevent river flooding is by is by ensuring that the water from the river is pure water as if it has impurities it may flood

ResultsPlus
Examiner Comments

2 marks:

Making riverbed deeper (1) (this is enough for the idea of dredging) so that water doesn't flood out (1) (again, just enough to explain the idea that the water won't overtop).

There is no credit for the second point as this is not relevant to the question.

(f) Explain **two** ways to prevent river flooding.

(4)

1 Building river embankments so the water does not flow. Hard engineering

2 Building beach replesishment so that the water can be absorbed by soil or trees. Soft engineering

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Examiner Comments

1 mark:

Building river embankments (1). 'So the water does not flow' is too vague for credit.

Zero marks for the second point as the suggestion is a coastal defence.

Question 1 (g)

For these 8 mark extended writing questions candidates are required to blend their use of the resource (AO4) with their own knowledge and understanding of the issue presented (AO3). Therefore they are not case study questions, rather they require the candidates to apply their geographical understanding to the context shown in the resource.

Many candidates clearly used the resource to describe the areas of the world that experience water surplus and often were able to link this to basic reasons, most often relating to the information provided in the textboxes. Some candidates used the information from the resource and made links to the different causes of water surplus in developed, developing/emerging countries as well as the link to latitude and its impact on likelihood of water surpluses. Some candidates were able to link the data on precipitation and sunshine hours to rates of evaporation and therefore the impact on experiencing water surpluses.

To access the higher marks, candidates need to go beyond simply describing what is shown in the resources, but provide several clear developed reasons for water surpluses in different parts of the world and in countries with different levels of development. The command word 'analyse' needs to be addressed to achieve full marks and candidates found this demanding as there was often minimal judgement demonstrated in some responses.

(g) Study Figure 1c in the Resource Booklet.

Analyse the possible reasons for water surpluses.

You **must** refer to the resource in your answer.

(8)

Water surpluses can be caused by many different reasons such as evaporation and precipitation rate, the income level of the country which affects the level at which water is managed, the climate of the area and lastly, population density.

In figure 1c, we can see that both Brazil and New Guinea have relatively high population density at approximately 20 people/km² respectively. This increases the demand for water, meaning that water is more likely to demand for more water, leading to an increased risk of water insecurity. However, with their high precipitation rates, this combats that. However, this is not true for Canada, where the population density is significantly lower at 4 people/km². Hence, the reason for water surplus is most likely due to there being less demand. It is also important to note that each of the selected areas go through very hot summers, meaning that evaporation rates will be higher. This means that water transfer rates are more likely to be efficient (Higher transfer rates). This means that water will reach the store (lake, ocean) quicker after they are abstracted.

For a HIC country seen in figure 1c Canada, the water management is likely to be more efficient here despite the low precipitation and evaporation rates annually, it is unlikely to cause huge amounts of water insecurity. Not to mention, their population density is also low, meaning that there is no need to worry regarding the water distribution of the area. For an LIC country like New Guinea, it is likely to have more agricultural activities here more water will be used (70% of

global H2O gas to agriculture) however, with the high precipitation rates (3,000 mm – highest of them all), this combats that problem.

In conclusion, these areas of high water surplus can be maintained by high precipitation and evaporation rates or perhaps with a lower population density (hence a lower demand). Areas with more many LICs such as Canada in figure 1C) will likely also have better water management and distribution systems. With New Guinea's coastal areas to consider, it is also important to consider the possibleness of desalination programmes.

(It is also important to consider that only an area of Brazil has water surplus in figure 1C, meaning that the country's water managment effectiveness likely doesn't contribute to it.

(Total for Question 1 = 25 marks)

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7 marks:

This is clearly a level 3 response. There are references made to the resource throughout and use of the data provided on population density, annual precipitation and evaporation to give reasons for the surpluses with some well developed points where they demonstrate strong AO3. They also attempt to link the climate of the region to the increase in river discharge (although this is not fully accurately expressed). The response also includes detail about the influence the level of development would have on demand for Canada and Papua New Guinea. There is a conclusion at the end demonstrating evidence of analysis.

There is some repetition in the response with the same ideas repeated more than once and their detail about Brazil is limited which is why this response does not achieve full marks.

(g) Study Figure 1c in the Resource Booklet.

Analyse the possible reasons for water surpluses.

You **must** refer to the resource in your answer.

(8)

Figure 1c shows us a map of the world highlighting places with a water surplus. In particular, we are given information on three countries: Canada, Brazil, and Papua New Guinea.

~~Canada has the lowest popular~~

One of the key factors deciding water surplus is the population in the area. Canada has the lowest population density of the three (4 people/km²) and takes up a decent area of land. This shows not as many people use the water up, and hence water demand is low. Compared to Canada, places with a high population density (excluding China due to its famous Yangtze River), such as India, clearly ~~have a~~ do not have a water surplus, perhaps owing to their population density.

Average annual evaporation and precipitation is also important, if not more. Canada, Brazil, and Papua New Guinea are all at the perfect distance from the equator (tropical regions) to not face troubles with water surplus (Canada is an exception with its low 500mm average annual precipitation and 200mm annual evaporation, but it literally has $\frac{1}{6}$th the population density of Brazil). ~~Brazil and Papua New Guinea each have~~ has Papua New Guinea has an annual average precipitation of 3000mm and evaporation of 1500mm. This is very high, ~~allows people~~ numbers of precipitation.

Compared to Papua New Guinea, countries in Africa (facing desertification) are all countries with no water surplus. Note that these countries are in the equator, which may be why their evaporation rate overwhelms precipitation rates (due to the heat).

In conclusion, while multiple reasons for water surplus exists, ~~the~~ an overwhelmingly high annual precipitation seems to be the most important, since ~~in front of it,~~ **(Total for Question 1 = 25 marks)**

~~It is not like you can actively see~~ it acts as a major advantage and does not put restrictions to population growth like low population density does. In the future, especially, water ~~sources~~ from these places with naturally high precipitation rates may be sought for, perhaps changing the balance of power between countries.

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6 marks:

This response goes about comparing the countries highlighted against the countries not shaded which can be awarded credit. AO3 lacks the depth of development shown in the level 3 response. They reference the data from the resource and then provide a limited explanation for why the water surplus occurs. The second half of the response starts to link two of the factors together to show stronger AO3 in this section and the last point links to desertification and influence of latitiude to further strengthen the AO3.

There is evidence of judgement at the end which enables the response to reach the top of level 2 but the rest of the AO3 is not well developed meaning the conclusion does not push the response into the next level.

(g) Study Figure 1c in the Resource Booklet.

Analyse the possible reasons for water surpluses.

You **must** refer to the resource in your answer.

(8)

The possible reasons for water surpluses in Canada, Brazil, and Papua new guinea is their population density to precipitation ratio; There is too much freshwater available for a small population. Although Canada only has 560mm of annual precipitation it also has 4 people/km^2. This is also because a large part of Canada is uninhabitable. Papua New Guinea receives 3000 mm of annual precipitation, 6 times more than Canada, nevertheless being 10 times smaller in land area. This could mean flooding and storms for Papua New Guinea resulting in a large water surplus.

Additionally, Canada also has a water surplus because of all the ice melting. Despite it having low precipitation, there are still snow, hail, ice that could melt.

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4 marks:

This response works through some of the data shown in the resource and provides comparisons between the countries, focusing on Canada and Papua New Guinea.

There is evidence of basic development of the reasons provided for example when they make the link between having a low population density because large parts of Canada are uninhabitable. This is also demonstrated again at the end with the knowledge that Canada has regions covered in ice which melt to provide freshwater.

The use of the resource demonstrates low level 2 AO4 and the reasoning is more detailed than the level 1 AO3 descriptor and so this also reaches low level 2.

(g) Study Figure 1c in the Resource Booklet.

Analyse the possible reasons for water surpluses.

You **must** refer to the resource in your answer.

(8)

Figure 1c shows that Canada has a much lower population density than Papua New Guinea and Brazil. This would indicate that there would be less people using up the water compared to a more populated country like Brazil. Figure 1c shows that the annual precipitation is double the amount of annual evaporation in Papua New Guinea. This shows that there is a lot of leftover water in Papua New Guinea. ~~the~~ Figure 1c shows that Brazil has a population density of 25 people/km^2, however it is a much less developed country than Canada so people would not be using much water.

Even though Figure 1c shows that there is a lower population density in Canada, they have lots of lakes and rivers whereas [Brazil] and Papua New Guinea don't. This allows them to get water whenever they need it.

(Total for Question 1 = 25 marks)

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3 marks:

This response is more simplistic than the previous one. The candidate draws comparisons between the data for the three countries to gain AO4 credit and they make very basic AO3 statements, eg 'Brazil is much less developed than Canada so people would not be using much water'.

(g) Study Figure 1c in the Resource Booklet.

Analyse the possible reasons for water surpluses.

You **must** refer to the resource in your answer.

(8)

Because of the About Canada, There are less people about 4 people / km^2 but there are lots of ice mountain so there's lot of fresh water.

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1 mark:

One basic statement provided relevant to the resource to gain 1 mark.

Question 2 (b)(ii)

In this question candidates are required to state one characteristic of a constructive wave. Candidates have a clear knowledge of the characteristics of waves and the majority of responses were awarded the mark. A minority of candidates confused the strength of backwash/swash and stated either strong swash or weak backwash. A small number of candidates simply wrote swash, backwash which was too vague for credit.

(ii) State **one** characteristic of a destructive wave.

(1)

short wavelength

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1 mark:

Correct characteristic.

(ii) State **one** characteristic of a destructive wave.

(1)

High height, High energy

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Examiner Comments

1 mark:

Correct characteristic. Although they have provided two, the first one is correct and is credited. If the first had been incorrect and the second correct they would have scored zero as the question asks for one.

(ii) State **one** characteristic of a destructive wave.

(1)

a destructive wave has a strong smash

ResultsPlus
Examiner Comments

0 marks:

This is a characteristic of a constructive wave.

Question 2 (b)(iii)

In this question candidates are required to explain one type of coastal erosion. Candidates are awarded for identifying a type of coastal erosion and explaining why this happens. Most candidates were able to identify a correct type of coastal erosion, although some did explain a different type of coastal process, most often a type of longshore drift.

What candidates found slightly more challenging was to explain why the erosion occurs; many responses stated a type of erosion and then just described the type of erosion rather than explain how it leads to rock being broken down.

(iii) Explain **one** type of coastal erosion.

(2)

Hydraulic action involves the sheer force of waves ~~enter~~ hitting the coastline & forcing pockets of air into the cracks & crevices present in the coastal rocks, thereby eroding / dislodging them.

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2 marks:

Hydraulic action (1) forces air into cracks and dislodges rocks (1).

(iii) Explain **one** type of coastal erosion.

(2)

hydraulic action

Attrition is when the ~~water~~ coast is repeatedly and constantly hit by water and the coast is broken down.

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1 mark:

Hydraulic action (1).

The development just describes hydraulic action without providing an explanation for how the rock is broken/worn away.

(iii) Explain **one** type of coastal erosion.

(2)

Destructive waves, with its strong backwash makes it possible for coastal erosion.

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Examiner Comments

0 marks:

No erosion process explained.

(iii) Explain **one** type of coastal erosion.

(2)

Longshore drift, it's the movement of sediments along a coastline in a zig-zag formation due to the prevailing winds.

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0 marks:

Incorrect coastal process explained.

Question 2 (c)

This item requires candidates to explain two physical factors that affect coastal erosion. Candidates knowledge of coastal erosion processes is strong with the majority gaining 2 or more marks.

The challenge for some candidates was explaining the reason why the process occurs rather than just describing the type of erosion. Some candidate responses were focused on human causes for erosion; these responses would often explain the role of coastal management impacting rates of erosion, which is not the focus of the question.

(c) Explain **two** physical factors that can affect coastal erosion.

(4)

1 Type of rock - If it is a hard rock then it takes a lot of time and energy to erode when compared to soft rocks such as clay, mud.

2 Type of wave - if it is constructive wave then there is more deposition than erosion so it take a long time when compared to destructive waves where erosion is higher.

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4 marks:

Type of rock (1) as hard rock takes more time and energy to erode than soft rock (1).

Type of wave (1) as constructive waves cause more deposition than erosion so it takes a long time compared to destructive waves (1).

(c) Explain **two** physical factors that can affect coastal erosion.

(4)

1 Geology. Hard rock is not easily eroded, while soft rock is which creates headlands and bays.

2 Vegetation. Plants reduce rates of coastal erosion.

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3 marks:

Geology (1) hard rock is not easily eroded while soft rock is which creates headlands and bays (1).

Plants reduce rates of erosion (1).

This response needs to explain how/why plants reduce erosion to gain the second mark.

(c) Explain **two** physical factors that can affect coastal erosion.

(4)

1 One factor is the geology of the rocks. The differing resistance of rocks, affects the rate of coastal erosion and cliff retreat. The lesser the resistance, the faster the rate of erosion, and vice versa.

2 The presence or absence of coastal management strategies also affects coastal erosion. This is because their use of hard or soft engineering strategies can slow down or arrest coastal erosion and their absence can lead to faster erosion.

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2 marks:

Geology (1) the lower resistance the faster the rate of erosion (1).

The second point is not a physical factor and so does not answer the question.

(c) Explain **two** physical factors that can affect coastal erosion.

(4)

1 Hard engeenering placed along the coastline decreases the effect of Coastal erosion on the coastline.

2 The ~~rock type amount~~ type of rock ~~sediment~~ on the coastline can affect how fast or slow the coastline is eroded.

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1 mark:

No credit for the first point as not a physical factor.

Rock type (1) but the development is too vague for credit.

(c) Explain **two** physical factors that can affect coastal erosion.

(4)

1 Using coastal management techniques like a sea wall can prevent coastal erosion and help maintain the beaches or coasts environment.

2 Using soft engineering like beach management can reduce the impact of coastal erosion.

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0 marks:

Both points are not physical factors.

Question 2 (d)

For this question candidates are required to explain one characteristic of a sand dune ecosystem. It is often these 3 mark questions which candidates find most demanding as it is challenging developing one point in sufficient depth to be awarded full marks.

Historically, candidates tend to find it more challenging when asked questions about saltmarshes or sand dunes compared to when the focus of the question in on coral reefs or mangroves. Some candidates were able to gain 2 to 3 marks but a significant proportion were awarded 0 or 1 mark. The most common misconception was candidates describing characteristics of the hot desert biome.

(d) Explain **one** characteristic of a sand dune ecosystem. 0 1 0

(3)

A sand ~~dune~~ dune ecosystem has vegetation that stabilizes it, such as marram grass. The vegetation has to withstand windy conditions, less water, and being submerged in sand. The plants' roots hold the sand dune structures together and prevent them from being blown away. So more the vegetation, the more steady the sand dunes are.

ResultsPlus
Examiner Comments

3 marks:

Marram grass (1) stabilises the dune (1) as the roots hold the sand together and prevent it from being blown away (1).

(d) Explain **one** characteristic of a sand dune ecosystem.

(3)

Sand dunes have vegetation growing on them. The ~~roots~~ plants on these sand dunes are rooted in the soil below, providing the dunes with more stability, as wind can no longer blow it away. Additionally, the vegetation provides a food source for animals, ~~also~~ providing them with a habitat.

ResultsPlus
Examiner Comments

2 marks:

The plants are rooted in the soil (1) providing more stability so wind can no longer blow it away (1).

(d) Explain **one** characteristic of a sand dune ecosystem.

(3)

~~Flora and fauna~~ Flora and fauna.
Plants ~~like~~ and vegetation trap sand in sand dunes, which protects them.
fauna, like insects help pollinate vegetation.

ResultsPlus
Examiner Comments

1 mark:

Vegetation traps sand which protects them (1).

(d) Explain **one** characteristic of a sand dune ecosystem.

(3)

It used to be bottom of the sea / river which means that it has vegetation and this means it has habitat for different species.

ResultsPlus
Examiner Comments

0 marks:

No clear explanation of a sand dune characteristic.

Question 2 (e)

This question requires candidates to use a resource (Figure 2a) showing an extract of an OS map of rural stretch of coastline. The first mark is awarded for identification of a relevant piece of evidence with the second mark awarded for why soft engineering would be suitable.

A large proportion of candidates were able to achieve 4 marks as they coped with the demands of the OS map effectively. The most common responses were focused on the fact there was saltmarsh/bird sanctuaries present. The development mark was awarded for explaining why it is important to protect this feature eg to not destroy habitats. There were examples of candidates who did not clearly use the resource, for example by stating they are cheap with nothing used from the map. These responses could only be awarded the AO2 credit and no AO3.

(e) Study Figure 2a in the Resource Booklet.

Suggest **two** reasons soft engineering is suitable for this stretch of coastline.

(4)

1 This coastal landscape seems to be a recreational spot for tourists [recreational route from The Log House to the Solent Way]. There are Bird Sanctuaries nearby as well. Presence of hard-engineering methods may look unsightly.

2 Prescence of natural marshes like the Gravelly Marsh and the Great Marsh are natural soft-engineering strategies for the coastline, reducing any need for other artificial infrastructure for protection.

ResultsPlus
Examiner Comments

4 marks:

Recreational spot for tourists (1) hard engineering would be unsightly (1).

Natural marshes (Gravely marsh) (1) are natural soft engineering reducing the need for artificial infrastructure (1).

(e) Study Figure 2a in the Resource Booklet.

Suggest **two** reasons soft engineering is suitable for this stretch of coastline.

(4)

1 Soft engineering is suitable as it does not affect the natural beauty and attractiveness of that area. Thus, it is still attractive to tourists who visit the area, such as the recreational routes

2 Soft engineering is suitable as it is cheaper and is more sustainable and environmentally friendly.

ResultsPlus
Examiner Comments

3 marks:

Does not affect the natural beauty of the area (1) as (the recreational routes) attract tourists (1).

Soft engineering is suitable as it is cheaper (1). There is no evidence from the map so no AO3 credit for this point.

(e) Study Figure 2a in the Resource Booklet.

Suggest **two** reasons soft engineering is suitable for this stretch of coastline.

(4)

1 One Soft engineering strategy could be Sea wall - While it doesn't look aesthetically pleasing it can protect the coastline while moving sand it doesn't get destroyed either.

2

ResultsPlus
Examiner Comments

0 marks:

Misunderstanding about what soft engineering is.

Question 2 (f)

The majority of candidates correctly identified the coastal landform shown.

Question 2 (g)

For these 8 mark extended writing questions, candidates are required to blend their use of the resource (AO4) with their own knowledge and understanding of the issue presented (AO3). Therefore, they are not case study questions, rather they require the candidates to apply their geographical understanding to the context shown in the resource.

In this instance candidates are required to study Figure 2c, a map showing countries with small populations living in low-lying coastal areas. There are three countries highlighted with facts about the number of people living there, the percentage of these people who were living in urban areas and the predicted sea level rise per year.

Some candidates used the information from the resource and made links to the reasons why some of these countries are less at risk based on their population density and/or rate of sea level rise predicted. Some also made the link to how the level of development of a country would influence the level of risk. Much fewer candidates made the more nuanced link to whether populations are urban or rural and the influence this might have on the level of risk.

The command word 'analyse' needs to be addressed to achieve full marks. A proportion of candidates demonstrated making a simplistic judgement but fewer demonstrated the analysis required to reach level 3.

(g) Study Figure 2c in the Resource Booklet.

Analyse the possible reasons why the populations of some countries are less at risk from coastal flooding than others.

You **must** refer to the resource in your answer.

(8)

The risk of coastal flooding may be worse in some countries than others depending on their population, as the number how many people are at risk, as well as the development of a county's and its coastal defences

In Figure 2c, it can be seen that Norway has over 389,000 people living in low-lying coastal areas, thus are at risk of coastal flooding, as the predicted sea level rise is 3mm per year. Although this makes the population at higher risk, Norway is a HIC, which means they likely have plenty of defences in place near low-lying coastal areas including sea walls, a form of expensive hard-engineering, which Norway can afford to install and minimise the risk of the population facing coastal flooding damage, despite the high population living in low-lying coastal areas.

On the other hand, Figure 2c depicts Peru's risk, whilst they only have 24,000 people living

in low-lying coastal areas, Peru lacks as much development as Norway. Hence, Peru likely has not invested in many coastal defence strategies. This may be because there is 0% of the total urban population living in low-lying areas, shown in Figure 2c, so Peru does not face any financial loss if rural areas are flooded, thus they feel the risk

(Total for Question 2 = 25 marks)

of 24,000 people is worth not investing in expensive ~~sea defences~~ coastal defences.

Similarly to Norway, Figure 2c shows New Zealand also has a high population living in low-lying coastal areas, 169,000, with only 2% of the urban population living in low-lying urban areas. New Zealand will have coastal defences and ~~flood~~ flood-proof building designs and regulations as they are highly developed. This makes them less at risk of coastal flooding than Norway as they also have coastal defences and flood-proof principles since they are a HIC, but less people are at risk of coastal flooding than Norway.

ResultsPlus
Examiner Comments

7 marks:

This candidates weaves the information from the resource into their answer rather than just lifting all the data and adding a reason at the end. There is clear evidence of some well-developed AO3 where they make links to level of development and understand the relevance of whether a population is rural or urban. There is some judgement throughout as each paragraphs states whether one location is more at risk than the other being discussed in the paragraph and then there is a more final concluding sentence at the end to move this response into level 3.

(g) Study Figure 2c in the Resource Booklet.

Analyse the possible reasons why the populations of some countries are less at risk from coastal flooding than others.

You **must** refer to the resource in your answer.

(8)

Coastal flooding is a major hazard that most of the coastal areas face. Low-lying coastal areas are especially vulnerable, but this is not the only factor for analysing why some areas are less susceptible. The risk of coastal flooding also depends on the coastal defences, effects on climate change, population density, presence of coastal ecosystems and the level of development in the area. Figure 2c indicates three countries with a low population and factors which may affect their vulnerability to coastal flooding. We can see that Peru has no people living in urban areas which are low-lying, while New Zealand and Norway have 2% and 3% respectively. Peru might be less affected by coastal flooding as it has lesser developed infrastructure that may be inundated. Both Norway and Peru have a predicted sea level rise of about 3 mm per year, while New Zealand has 7.5 mm rise. While this may not seem much, even 0.5 mm has the ability to do great damage to the coastline. The increased sea level rise may be due to heavy rainfall, storm surges, melting glaciers or tsunamis. Some countries may have populations living in higher coastal areas, as well as coastal defences such as mangroves which both protect the coastline and reclaim land.

Also, some countries may have other trade opportunities, while some are dependent on the sea for trade and tourism. Such opportunities may affect the rate of coastal flooding, as they may harm coastal ecosystems and disrupt foodchains. In conclusion, some countries are less at risk of coastal flooding due to their advanced advanced prediction methods and coastal defences. Sustainable methods are undoubtedly the best way to both use the coastal resources and manage the coast. **(Total for Question 2 = 25 marks)**

ResultsPlus
Examiner Comments

6 marks:

This response uses the resource throughout the answer and discusses each factor shown in the textboxes. This candidate has been able to make the distinction between the total population and the percentage urban population which is then linked to levels of damage which is developed enough to demonstrate level 2 AO3. The AO3 in places is variable in terms of depth, eg the paragraph focused on amount of sea level rise only has a list of factors that might influence this with no development.

Although there is a clear conclusion at the end that is logical, the depth of AO3 throughout the response is varied and so this remains at the top of level 2.

(g) Study Figure 2c in the Resource Booklet.

Analyse the possible reasons why the populations of some countries are less at risk from coastal flooding than others.

You **must** refer to the resource in your answer.

(8)

Figure 2C shows the total number of people living in low-lying ~~co~~ coastaly areas, percentage of total urban population living in low-lying urban areas and predicted sea level rise in different countries with a small population such as Peru. Peru is more at risk to coastal flooding than some others due to its level of development being lower. ~~It~~ Because of this, they can't have many precautions in place and help the population as much as other developed countries due to the economic state and therefore they're at more risk to floding as figure 2C also presents that only 24,000 people live in ~~low~~ low-lying coastal areas and 0% of the population in urban areas live in low-lying areas.

Figure 2C shows that ~~Nora Norw~~ Norway and Peru have the same level of sea rise of 3mm per year but still Norway has a lot higher population living in low-lying areas. 389,000 people live in low-lying coastal areas and 3% of urban population live in low-lying areas as Norway is a more developed country

and it is safer for them to live in these areas as Norway has more safety precautions in place and can afford to do so which would also mean the emergency ~~of a~~ aid would be a lot quicker and faster therefore decreasing the risk of living in areas at risk of flooding.

ResultsPlus
Examiner Comments

5 marks:

This response uses the resource to reference data to begin to explain the level of vulnerability places are exposed to. There are two countries discussed (Peru and Canada) and the main AO3 argument is the link to level of development. The rest of the response is often just making comparisons between the data for the two countries. There is some very simple judgement within the response 'Peru is more at risk than..' This response would need more depth and breadth to reach higher in level 2.

(g) Study Figure 2c in the Resource Booklet.

Analyse the possible reasons why the populations of some countries are less at risk from coastal flooding than others.

You **must** refer to the resource in your answer.

(8)

From Figure 2c, the region such as Norway, Peru, New Zealand usually have a low percentage of total urban population living in low-lying urban areas. Low percentage in urbanisation cause ~~too~~ lower risk of flooding because the land surface are not concrete which is impermeable. Second is the predicted sea level rise, the sea level rise in these countries are all at a small rate, ~~de~~ decrease the rising speed of sea level help reduce the risk of coastal flooding. Third is the population, the ~~pop~~ population in these countries are ~~usu~~ usually in a smaller size than other, low population ~~te~~ ~~them~~ won't force them to cut down ecosystem such as mangroves to provide more space for living, the ecosystem in these region help maintain the risk of coastal ~~floo~~ flooding, too.

ResultsPlus
Examiner Comments

3 marks:

This response is much more list-like than the previous level 2 response. The candidate makes reference to the resource to gain AO4 credit and just mentions some basic reasons for AO3 credit.

(g) Study Figure 2c in the Resource Booklet.

Analyse the possible reasons why the populations of some countries are less at risk from coastal flooding than others.

You **must** refer to the resource in your answer.

(8)

as we can see in figure 2c that some countries are at lower risk of flooding than other countries.

ResultsPlus
Examiner Comments

0 marks:

Although this makes reference to looking at Figure 2c, the statement is too vague to be awarded an AO4 mark.

Question 3 (b)(ii)

In this question candidates are required to name the scale used to measure volcanic eruptions. Most candidates were able to access this question and provided the correct response. However, some gave either earthquake or tropical cyclone scales with a very few stating seismographs.

Question 3 (b)(iii)

Candidates are required to explain one reason volcanoes do not occur at conservative (transform) plate boundaries. They are awarded 1 mark for identifying how the tectonic plates move and a second mark to explain why this prevents magma reaching the surface.

The most common response to this question was to state the direction of plate movement (sliding past each other) and then explain there are no cracks made in the crust which prevents magma rising. There were a small proportion of candidates who wrote responses about the incorrect plate boundary and were awarded zero marks.

(iii) Explain **one** reason volcanoes **do not** occur at conservative (transform) plate boundaries.

(2)

Volcanoes don't occur on conservative plate boundaries because the magma is prevented from coming to the surface of the crust. This is because the plate involved, only slide past each other and the magma from the mantle doesn't rise.

ResultsPlus
Examiner Comments

2 marks:

Magma is prevented from coming to the surface (1) because the plates only slide past each other (1).

(iii) Explain **one** reason volcanoes **do not** occur at conservative (transform) plate boundaries.

(2)

Because there are no cracks in the Earths crust for the magma do rise through do the surface. This means the magma can't reach the surface and solidify, which overtime would form a volcano.

ResultsPlus
Examiner Comments

1 mark:

There are no cracks for magma to reach the surface (1).

There is no detail about how the plates are moving, required for the second mark.

(iii) Explain **one** reason volcanoes **do not** occur at conservative (transform) plate boundaries.

(2)

In conservative plate boundary, the oceanic plate and tectonic plate move ~~it~~ ~~get~~ together and collide resulting in a formation of a mountain and not a volcano

ResultsPlus
Examiner Comments

0 marks:

The incorrect plate boundary is described.

Question 3 (c)

For this question candidates are required to explain two reasons that short-term responses to earthquakes may be more effective in some countries than others. Candidates coped well with the demands of this question and gave a range of responses which were awarded credit.

There were a small number of responses purely focused on planning or preparation and if these were not linked to why they might improve the short-term response they were not awarded marks. If however, candidates had linked better education to better trained emergency services the response was awarded credit.

(c) Explain **two** reasons short-term responses to earthquakes can be more effective in some countries than others.

(4)

1 Some countries may have more accessible airports or sea ports that allow other countries to easily provide aid.

2 Some countries are highly populated and overcrowded so aid would not be able to reach everybody because a ~~thought~~ high population density makes an area more vulnerable.

ResultsPlus
Examiner Comments

4 marks:

More accessible airport (1) allows other countries to easily provide aid (1).

High population/overcrowding (1) means aid would not reach everyone as high population density increases vulnerability (1).

(c) Explain **two** reasons short-term responses to earthquakes can be more effective in some countries than others.

(4)

1 Some countries have funds allocated and resources allocated which can quickly be used to provide relief. They don't wait for aid international aid. Some even half (a) agencies like India's NDRF

2 Some countries have sophisticated GIS computer systems that calculate areas with maximum damage and allow for coordinated effective deployment of relief

ResultsPlus
Examiner Comments

4 marks:

Some countries have funds and resources allocated (1) which can quickly be used to provide relief (1).

Some countries have sophisticated GIS to identify areas with most damage (1) which allows for coordinated, effective deployment for relief (1).

(c) Explain **two** reasons short-term responses to earthquakes can be more effective in some countries than others.

(4)

1 Short term response include evacuating to open ground. This would save people's lives especially if the emergency ~~time~~ team could not arrive on time.

2 Many hazards like fire can be avoided by the help of the short term responses.

ResultsPlus
Examiner Comments

2 marks:

Evacuation to open ground would save lives (1) if emergency team could not arrive (straight away) (1).

No credit for the second point as just states an impact.

(c) Explain **two** reasons short-term responses to earthquakes can be more effective in some countries than others.

(4)

1 Some countries might not be affected much so short-term responses will help due to the prediction of earth quake using technologies.

ResultsPlus
Examiner Comments

0 marks:

This is an unclear response which is too muddled for credit.

Question 3 (d)

Candidates are required to explain one reason people live in areas at risk from earthquakes. It is often these 3 mark questions which candidates find most demanding as it can be challenging developing one point in sufficient depth to be awarded full marks.

Candidates need to ensure they read the question carefully; a significant proportion of responses were purely written about benefits of living in volcanic regions, most commonly mentioning fertile soils or attracting tourists. If the response had no, even generic, link to earthquake areas then it was awarded zero. Where candidates offered ideas linked to family connections, poverty, ability to find work these were often developed sufficiently to be awarded 3 marks.

(d) Explain **one** reason people live in areas at risk of earthquakes. required

(3)

one reason is that they may have lived in that area their whole lives. Therefore have lots of friends and family near. As a result, they have emotional attachment to the area and don't want to leave.

ResultsPlus
Examiner Comments

3 marks:

Live there their whole life (1) therefore have lots of friends and family near (1) so have emotional attachment and don't want to leave (1).

(d) Explain **one** reason people live in areas at risk of earthquakes.

(3)

One reason people live in area at risk of earthquakes is because they may not be able to live elsewhere because they may not have enough money to ~~to~~ move which forces them to live in the same area.

ResultsPlus
Examiner Comments

2 marks:

They cannot live elsewhere as they may not have enough money to move (1) which forces them to stay (1).

(d) Explain **one** reason people live in areas at risk of earthquakes.

(3)

One reason could be that it could be cheap due to the height risk not being there.

ResultsPlus
Examiner Comments

1 mark:

It is cheap due to the height of risk being there (1).

(d) Explain **one** reason people live in areas at risk of earthquakes.

(3)

Volcano produces fertile land that people could use as agriculture, having lots of nutrients.

ResultsPlus
Examiner Comments

0 marks:

This answer is focused on volcanoes and the question requires a response on earthquakes.

Question 3 (e)

Most candidates were able to identify ash (cloud) as the volcanic hazard shown in Figure 3a. Credit was not awarded for smoke or gases.

Question 3 (f)

This item requires candidates to use Figure 3b, which is a resource showing the global distribution of tropical cyclones, to suggest two reasons for the distribution of tropical cyclones.

Candidates need to be reminded that when they are provided with a resource for these 4 mark resource questions, they need to use specific evidence from the resource to gain the AO3 credit. A significant proportion of responses demonstrated purely AO2 evidence as they did not contain any specific reference to something shown on the resource; this limited responses to 2 marks. To gain the AO3 credit responses need to include located examples which can be identified on the map or correctly identify the direction the arrows were pointing towards. To gain the AO2 credit responses need to explain why tropical cyclones occur there not just describe where they are.

(f) Study Figure 3b in the Resource Booklet.

Suggest **two** reasons for the distribution of tropical cyclones.

(4)

1 The tropical cyclones are forming in between the tropic of cancer and the tropic of capricorn. This is because these regions have ~~high~~ sea temperatures of around 27°C, which is required for tropical cyclones to form, due to their requirement of low and high pressure areas.

2 The Tropical cyclones are ~~travelling~~ moving from East to West. This is because of the Corolis Force, which causes wind to deflect and tropical cyclones to spin.

ResultsPlus
Examiner Comments

4 marks:

Between the Tropic of Cancer and Capricorn (1) because the sea temperature is 27°C (1).

Move from east to west (1) because of the Coriolis force (1).

(f) Study Figure 3b in the Resource Booklet.

Suggest **two** reasons for the distribution of tropical cyclones.

(4)

1 Tropical cyclones occur where the sea is the ~~warmest~~ warmest. This would be close to the equator as temperature must be at least 27°C for a storm to form.

2 Tropical cyclones follow direction of prevailing winds & ocean currents in order to gain energy to keep momentum of the storm going.

ResultsPlus
Examiner Comments

3 marks:

Occur near the equator (1) as the sea is 27°C (1).

They follow the direction of the prevailing wind (1). There is no clear reference to the resource and so no AO3 credit awarded for the second point.

(f) Study Figure 3b in the Resource Booklet.

Suggest **two** reasons for the distribution of tropical cyclones.

(4)

1 Tropical cyclones are tend to developed when the temperature are above 27°c and low air pressure.

2 Tropical cyclones are much more in epicenter epcenter because its get the sun energy directly.

ResultsPlus
Examiner Comments

1 mark:

Develop where the temperature are above 27°C (1). This is considered specific enough even though they do not say sea temperature. There is no clear reference to the resource and so no AO3 mark awarded.

Zero marks for the second point:

The term epicenter probably means equator but this is not clear enough and too vague to credit.

Question 3 (g)

For these 8 mark extended writing questions candidates are required to blend their use of the resource (AO4) with their own knowledge and understanding of the issue presented (AO3). Therefore, they are not case study questions, rather they require the candidates to apply their geographical understanding to the context shown in the resource.

In this instance candidates are required to study Figure 3c, a pie chart showing impact on businesses in Florida and text and photographs of impacts from the tropical cyclone (hurricane). They need to explain the impacts of the tropical cyclone on people in Florida. Better responses demonstrated their AO3 knowledge by stating an impact mentioned in the resource and then building on this to give knock-on impacts. Some were able to group these into short/long term; this often supported them in analysing as they were able to make a judgement about whether the long-term or short-term impacts were more severe.

The command word 'analyse' needs to be addressed to achieve full marks and many candidates found this challenging as there was often minimal judgement demonstrated in responses as they remained descriptive of the impacts.

(g) Study Figure 3c in the Resource Booklet.

Analyse the impacts of tropical cyclones on people.

You **must** refer to the resource in your answer.

(8)

Figure 3C shows that people's livelihoods are ~~an~~ a major impact from tropical cyclones especially those who have businesses to make a living. ~~One reason that to~~ Figure 3C shows that majority of the businesses (60%) temporarily close. This is due to immediate primary impacts such as flooding which ~~destroy~~ disrupts daily business operations especially tourist markets. There are also secondary impacts such as people losing their homes ~~since they~~ and losing ~~lose~~ their jobs due to disaster. Therefore, they don't have enough disposable income to purchase goods. This means that they may be entitled to save more. As a result, businesses can't generate sales and end up defaulting on loans often leaving to even permanent closure which happens 40% of the time according to figure 3c.

Another impact is power cuts, shown in figure 3c. Therefore, people may not have access to clear, potable water. Figure 3C shows that 73% of Florida residents had power cuts. Therefore, they couldn't cook meals. Therefore, lots of time is spent on queuing up for gas

meaning people can't do their jobs. Therefore, people may no longer have income to support their families. As a result, poverty rates may increase causing the general quality of life to decline.

In conclusion, there are many impacts on people from tropical cyclones. However, a major impact is power ~~tools~~ cuts which disrupts business operations and access to gas for cooking. Therefore, people may prioritise saving money due to less security in terms of jobs. As a result, businesses end up suffering the most. This repeats as a cycle, as no business, means no income for families.

(Total for Question 3 = 25 marks)

TOTAL FOR SECTION A = 50 MARKS

ResultsPlus
Examiner Comments

8 marks:

This response uses evidence from the resource throughout and there is well-developed AO3 demonstrated. This candidate uses connectives like: 'this means that' and 'this is due to' to clearly demonstrate they are writing more detailed reasons. They also clearly show they know the difference between primary and secondary impacts and the influence these might have on the severity of an impact. The use of 'therefore' throughout this response demonstrates evidence of analysis but there is also a specific and detailed conclusion at the end where the candidate doesn't just list all the impacts and states they are all bad but specifically selects just one (power cuts) as being the most significant and then goes on to justify their point of view.

(g) Study Figure 3c in the Resource Booklet.

Analyse the impacts of tropical cyclones on people.

You **must** refer to the resource in your answer.

(8)

Figure 3C shows that 60% of businesses were temporarily closed whereas 40% of businesses were permanently closed This means that ~~att~~ ~~att b~~ ~~atmo~~ business owners were not able to gain profit and even suffered losses. This also means that businesses such as stores that provide for the public were closed, meaning that the rest of the residents were unable to access basic necessities. Figure 3C also shows that 30 rivers burst their banks and there was coastal flooding. This suggests that homes were damaged as property was flooded and some may have found themselves trapped in a specific area of their home.

Furthermore, Figure 3C states that people had to queue for gas to power their homes. Since this affected 73% of residents, most wouldn't have had ~~access~~ energy to power ~~item~~ appliances ~~like~~ such as refrigerators, leading to the damaging of food items. Figure 3C also shows that 25% of homes were destroyed while 65% of the remaining homes were damaged. Although the figure does not state the extent of the damage, it still

means that the residents of those 25% were left temporarily homeless with most of their possessions destroyed as well.

In conclusion, Hurricane Irma had very strong impacts on the population of Florida, and so do most other cyclones due to the short and long-term effects of strong winds and ~~flooding~~ rain.

(Total for Question 3 = 25 marks)

ResultsPlus
Examiner Comments

5 marks:

This response works through all the impacts shown in the resource demonstrating AO4 credit and for each they give a sentence to explain the impact to gain AO3. The AO3, although present in each paragraph, is fairly limited in places eg 'and some may have been trapped in their home' and 'no power for refrigerators would have damaged food'. This is clear evidence of low level 2 AO3 but is not developed enough to reach higher level 2.

Although there is a conclusion at the end, the AO3 is not well developed enough throughout for this conclusion to move the answer to the top of level 2.

(g) Study Figure 3c in the Resource Booklet.

Analyse the impacts of tropical cyclones on people.

You **must** refer to the resource in your answer.

(8)

Tropical cyclones can displace people and cause distruption to people. In Figure 3c, 25% of the homes in Florida Keys were destroyed. This causes a mass displacement of ^the population as people look for a place to stay and rebuild. Further more, 65% of ^the remaining homes were damaged due to the cyclone, which can cause further displacement as people move out whilst their homes are being ~~rebui~~ repaired.

Tropical cyclones also damage the economy greatly. As Figure 3c tells us, 60% of businesses had to be temporarity closed, while 40% were permenantly closed. The lack of trade and business as people try organize their life again tremendously slows down the economy, as well as increase crime rates in the country as people grow desperate.

Tropical cyclones can have a huge negative impact on people and ^therefore at the economy and country at larges if not prepared for properly.

ResultsPlus
Examiner Comments

4 marks:

This response lacks the breadth required for higher in level 2 as although there is clear evidence of both AO4 and AO3 there is little linkage between impacts and the AO3 is fairly simple. This response is weaker then the previous response as there is less range and less development and no evidence of judgement.

(g) Study Figure 3c in the Resource Booklet.

Analyse the impacts of tropical cyclones on people.

You **must** refer to the resource in your answer.

(8)

In Figure 3c it shows that tropical cyclones lead to 60% of businesses being temporarily closed and the flooding of 30 rivers imploded on banks due to 20cm of rainfall in 24hrs which affected people as they would have temporarily lost jobs. Figure 3c also shows that 25% of homes in Florida Keys were destroyed and the remaining 65% were damaged causing the majority of the population to be homeless

Figure 3c also shows that tropical cyclones affected the people by killing 73% of

the population to have power cuts resulting in them to loose communication with wifi and food in fridges. This also meant that people had to line up for gas to power their homes

ResultsPlus
Examiner Comments

3 marks:

The AO4 in this response is stronger than the AO3 but both are basic throughout. The candidate mentions three impacts and in places offers a basic AO3 statement to reach the top of level 1.

(g) Study Figure 3c in the Resource Booklet.

Analyse the impacts of tropical cyclones on people.

You **must** refer to the resource in your answer.

(8)

Many people houses are flooded and cannot live there anymore. Many people are unemployed many businesses close. No electricity. Many lives lost

ResultsPlus
Examiner Comments

1 mark:

1 AO4 mark which lists impacts shown in the resource but is not all direct lift.

Question 5 (a)(ii)

Please note that the comments made for all question 5 parts also apply to question 4 and question 6 as the questions are in parallel and the resources very similar. Section B contains short answer questions on unfamiliar fieldwork and the extended 8 mark response on familiar fieldwork this series.

Candidates demonstrated a strong understanding of the term qualitative data. The most common incorrect response provided was beach gradient.

Question 5 (b)

For this question candidates need to identify one health and safety risk and explain the impact of this risk. The focus of the question is not how the risk was managed.

Candidates need to be clear on the distinction between what is risk and what is risk mitigation. Candidates who identified a health and safety risk and developed this by providing a way to reduce the risk were not awarded the development mark.

(b) Suggest **one** possible health and safety risk of measuring beach gradients.

(2)

While measuring the beach gradients ~~tt~~ ensure that the waves mark the low-tide. Students might get drowned during high-tide waves.

ResultsPlus
Examiner Comments

2 marks:

Students might get drowned (1) by high tide waves (1).

(b) Suggest **one** possible health and safety risk of measuring beach gradients.

(2)

The coastal area may be slippery due to the ~~water~~ waves hitting the rocks. Thus, the students may have a safety risk of tripping, falling and injuring themselves while measuring the beach gradient.

ResultsPlus
Examiner Comments

2 marks:

The rocks might be slippery (1) meaning students might fall/trip (1) and injure themselves.

(b) Suggest **one** possible health and safety risk of measuring beach gradients.

(2)

One possible safety risk is that high tides ~~must~~ might pull you into the sea. To prevent this students must wear footwear with a strong grip.

ResultsPlus
Examiner Comments

1 mark:

High tides might pull you into the sea (1). Needs a link to being swept away/drown for the development, this on its own is too vague for 2 marks.

The development is a mitigation strategy and not relevant to this question.

Question 5 (c)

This item requires candidates to calculate the median of the data shown in Figure 4/5/6a. Responses need to show the working by evidencing they have correctly identified the middle two figures and added and divided these to reach the correct answer. The working out credit is only awarded if candidates identify the correct two middle numbers, as this is a vital element of the skill when calculating the median of a data set.

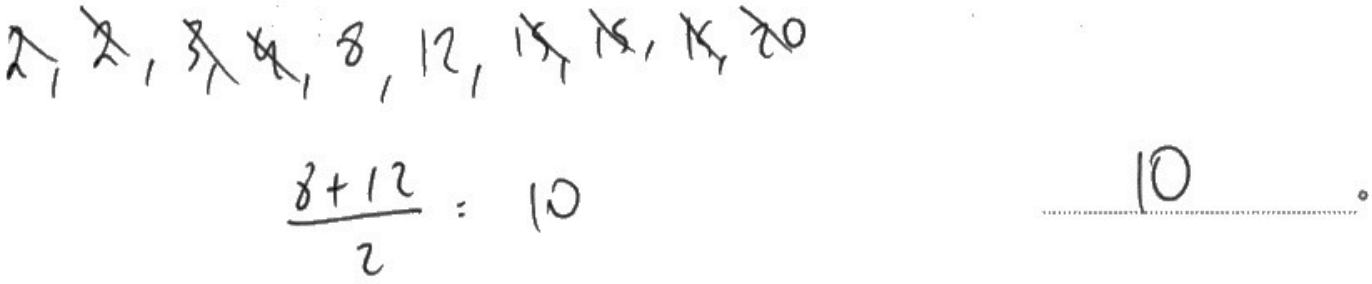
Where candidates did not gain credit was because they often calculated the mean. Candidates need to ensure they read calculate questions in full to ensure they perform the correct calculation.

(c) Study Figure 5a in the Resource Booklet.

Calculate the median of the beach gradients.

You **must** show all your working in the space below.

(2)



ResultsPlus
Examiner Comments

2 marks:

Correct middle figure, correct calculation, correct answer.

Question 5 (d)(i)

Candidates are required to plot the two missing data plots onto Figure 5/4/6b. There was less evidence of candidates missing out the graph question this series, but there was still evidence this had occurred, as on occasion, candidates incorrectly identified the anomaly from the graph for (d)(ii), suggesting the candidate had overlooked this question.

(d) (i) Study Figure 5b in the Resource Booklet.

Plot the data for sites 3 and 5, from Figure 5b (shown in the Resource Booklet), on Figure 5c (below).

(2)

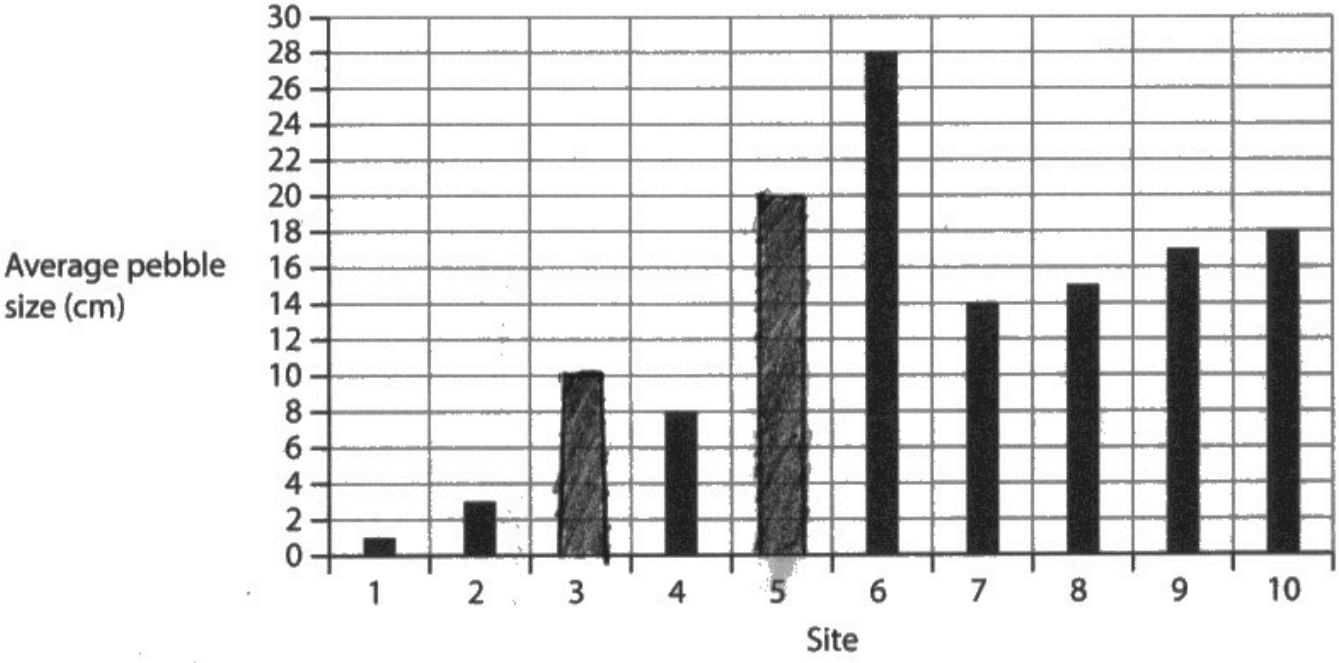


Figure 5c

Average pebble size at each site

ResultsPlus
Examiner Comments

0 marks:

Incorrect data plotted.

(d) (i) Study Figure 5b in the Resource Booklet.

Plot the data for sites 3 and 5, from Figure 5b (shown in the Resource Booklet), on Figure 5c (below).

(2)

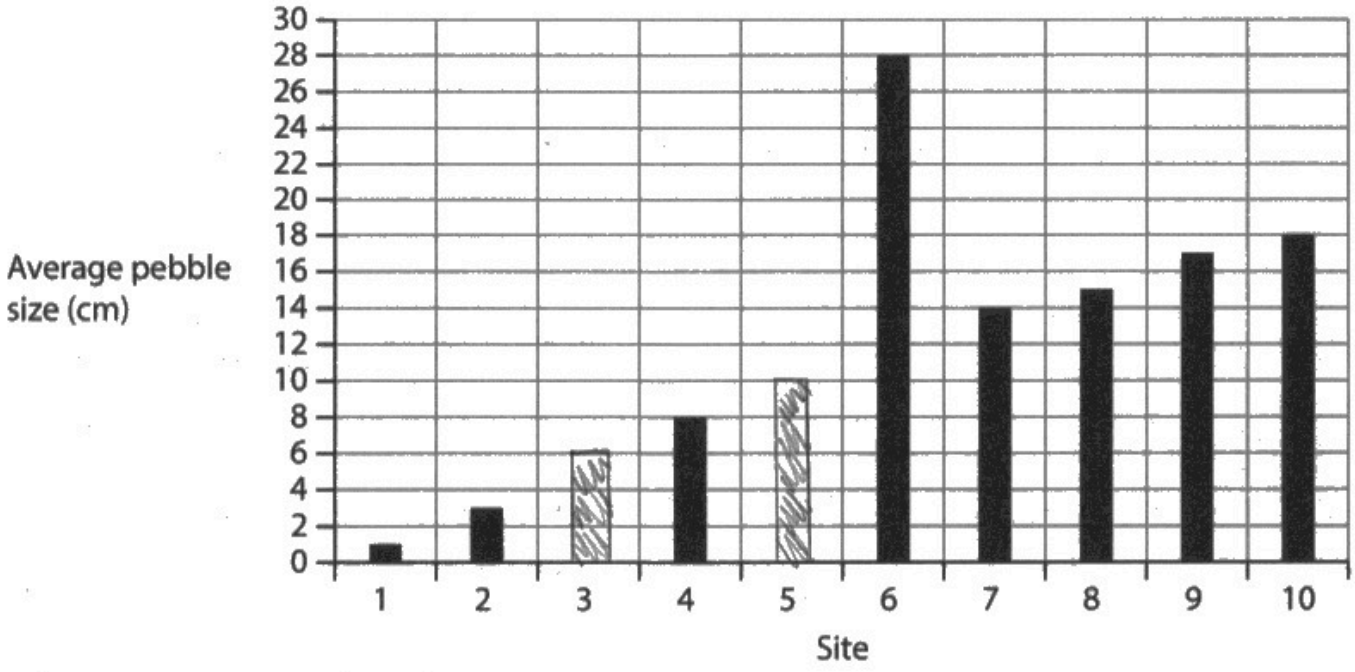


Figure 5c

Average pebble size at each site

ResultsPlus
Examiner Comments

2 marks:

Both correct data plots.

Candidates are not required to shade bars on the graph the same as the rest of the bars provided.

Question 5 (d)(ii)

For this question candidates are required to identify the anomaly shown in Figure 5/4/6c. Candidates have a clear understanding of the term anomaly as almost all candidates correctly identified the anomalous site shown.

Question 5 (d)(iii)

This question requires candidates to suggest a reason for the anomaly shown on Figure 5/4/6c. The first mark is awarded for identifying a reason for the error and two further marks for explaining why this led to an incorrect result being recorded.

Lots of candidates were able to suggest human error as their initial cause and went on to develop this to suggest how this may have happened. Most often suggesting an error using the measuring equipment leading to a bigger number being written down.

(iii) Suggest **one** possible reason for the anomaly in average pebble size on Figure 5c.

(3)

One possible reason is due to human error - the students may have used the wrong unit or not looked at the measuring tool from another angle rather than eye level which has reduced the accuracy of results.

ResultsPlus
Examiner Comments

3 marks:

Human error (1) students may have used the wrong unit (1) which reduced the accuracy of the results (1).

(iii) Suggest **one** possible reason for the anomaly in average pebble size on Figure 5c.

(3)

The anomaly in pebble size could be due to Human error. This could either be when comparing it against the Wentworth scale or when writing down results.

ResultsPlus
Examiner Comments

2 marks:

Human error (1) when comparing against Wentworth scale/writing down results (1).

Two separate developments provided, both would be awarded credit but they are not a further development so 2 marks rather than 3 marks.

(iii) Suggest **one** possible reason for the anomaly in average pebble size on Figure 5c.

(3)

The student in site 6 may ~~choose~~ chosed the largest stone pebble everytime, which ~~makes the mean anormal~~ caused the anomaly.

ResultsPlus
Examiner Comments

1 mark:

Student might have chosen the largest pebble every time (1).

Idea of bias sampling.

(iii) Suggest **one** possible reason for the anomaly in average pebble size on Figure 5c.

(3)

One reason is that because they measured the average pebble size. This means that it is unaccurate because different sites have different pebble sizes ect. This caused inaccuracy in data collection which therefore caused inaccuracy in data presentation because of the different pebble size in every ~~beach~~ site.

ResultsPlus
Examiner Comments

0 marks:

This response is about why data may be inaccurate between different sites rather than why the data at Site 6 only is anomalous, therefore, this response is not relevant to the question.

Question 5 (e)

It is important to remind candidates to write their responses under the correct enquiry context; a proportion of candidates wrote coastal enquiry responses in the river enquiry and hazardous environments enquiry questions. This limited their marks as only generic statements plausible to the enquiry context being answered could be credited. There are also a small proportion of candidates who write tectonic responses for question 6 and the specification is clear the enquiry needs to be focused on extreme weather events. This results in responses being awarded zero.

This question focuses on a familiar fieldwork context ie fieldwork that the candidates have undertaken as part of the course. This question asks candidates to evaluate the accuracy and reliability of their conclusion drawn from their own geographical enquiry.

There was a wide range of responses to this question with most candidates only evaluating their data collection methods, which whilst relevant to the question, limited them to mid-level 2 if this was all they wrote about. The requirement for this question is to go beyond evaluating data collection methods and make links to how valid the candidates conclusions were. This requires some discussion of other stages of the geographical enquiry to reach the depth required for level 3. Candidates struggled to demonstrate they knew the difference between reliability and accuracy, at times stating something was inaccurate when what they had written was about reliability and vice versa. It would support candidates with their responses if they are clear on the difference between accuracy and reliability as they would be able to provide much stronger evaluations of their conclusions.

Candidates are given space to write their geographical enquiry title. They do not receive marks for this, but it provides context for the response that follows.

To gain level 3 credit, the command word 'evaluate' needs to be met which requires a concluding statement at the end of the response for full marks.

(e) You have studied a coastal environment as part of your own geographical enquiry.

State the title of your geographical enquiry. / SS / SPR

Evaluate the accuracy and reliability of your conclusions. (based on own data)

collection method

(8)

Geographical enquiry title

To what extent is longshore drift the primary process at shaping the beach?

We concluded that longshore drift is indeed the primary process at affecting shaping the beach as the majority of our data suggested so. However, inaccuracies in our data collection methods as well as data analysis could have led to our conclusion being ~~inaccurate~~ erroneous.

In our data collection methods, we tested for a range of factors i.e wave direction, type of wave action, beach ~~profile~~ gradient, to ensure we could fully evaluate what processes were present, ~~however~~ keeping our results reliable. Additionally, technical equipment for example, ranging poles, clinometers and ~~cap~~ callipers ~~w~~ were used to ensure the accuracy of ~~the~~ our data. However, some of our data was inaccurate due to human errors i.e miscounting ~~of~~ ~~no~~ number of waves or mislabelling land use on our land use diagrams,

meaning results were inaccurate and potentially confounding to our conclusions. Despite this, ~~the~~ ~~majority~~ we excluded anomalies and calculated averages to ensure the majority of our data was accurate, making our conclusion overall quite accurate.

In terms of reliability, our conclusion was less reliable as there were

(Total for Question 5 = 20 marks)

things we could have done to improve ~~reliability~~ reliability for example, statistical testing using spearman's rank. Additionally, since ~~we~~ our conclusion was only based on our own results that were taken at the same time and date, ~~there may~~ it may have been anomalous. ~~to~~ We should have used secondary data i.e government reports to help identify areas vulnerable to erosion and to corroborate with our own data for more reliability. On the other hand, we did share our results amongst our peers, meaning we could exclude anomalies for higher reliability.

Overall, this means that our conclusion was fairly reliable and accurate as it was based on ~~fairly~~ data that was so.

ResultsPlus
Examiner Comments

8 marks:

This candidate shows correct awareness of the difference between accuracy and reliability. They make a judgement at the start and end of their response to meet the demands of the 'evaluate' command word.

They clearly demonstrate they carried out some fieldwork and are aware of the limitations of the data collection and data analysis they carried out and make specific suggestions for how these areas could have been improved.

(e) You have studied a coastal environment as part of your own geographical enquiry.

State the title of your geographical enquiry.

Evaluate the accuracy and reliability of your conclusions.

(8)

Geographical enquiry title the beach change

how does ~~beach gradient change~~ along a transect

At east Coast park we measured many things. for example beach gradient, ~~and~~ longshore drift, and sediment size.

~~One conclusion~~ One method we used ~~as~~ was using a clinometer to measure beach gradient. One issue ~~with our conclusions~~ that may have arised was human error when inserting the ranging poles. For example the length of the ranging pole may have been wrong or we may have not inserted it into the sand enough. This leads to the beach gradient being larger than it is which leads to a unreliable conclusion. if we ~~can~~ did this correctly we would have good accuracy. This leads to a more correct ~~in~~ wright up of our information.

Another method we used was using a ~~caliper~~ caliper in order to measure sediment size. Although unlikely one thing that could

have affected reliability is an anomalous result in our measuring. This could have occured when we randomly chose the sample and they were all of large size. ~~But~~ This leads to one result ~~on the~~ along the beach being unusually high. However this is unlikely meaning that ~~the~~ the reliability of our conclusions was good and had good accuracy.

(Total for Question 5 = 20 marks)

Overall I think our conclusions were very accurate as we had ~~ong~~ undergone ~~practice~~ practices with the ranging ~~p~~ poles an clinometer meaning that we ~~were~~ had a clear understanding of what we had to do. ~~We also~~ which therefore minimises mistakes. We also did not have an anomalous result ~~as~~ which increases the reliability of our conclusions.

ResultsPlus
Examiner Comments

5 marks:

This response goes through some different data collection methods and highlights some of the limitations of their methods. Although they make a link to the impact on their conclusions at the end, the answer is too focused on data collection methods and as a result does not fully meet the demands of the question.

They demonstrate level 2 A03 and A04 but do not reach the top of level 2 and above without focusing on another stage of the inquiry process.

(e) You have studied a coastal environment as part of your own geographical enquiry.

State the title of your geographical enquiry.

Evaluate the accuracy and reliability of your conclusions.

(8)

Geographical enquiry title

How does the beach profile change as you move along the beach transect in East Coast Park, Singapore?

One factor that affected the reliability of our conclusions was the investigation design. for example, in recording the beach profile, 3 readings were taken from every angle measured with the clinometer. This meant that we could take the average of the readings for every angle in the beach profile, leading to more reliable data that increases reliability of our conclusion that the beach profiles are steeper where there is more erosion.

However, the (accuracy) validity of our conclusions was not considered. For example, when measuring longshore drift, an orange peel was used to show the movement of sediment, and the accuracy of the distance was judged by eye. This means that

Our measurements of LSD may not be valid as it involves large amounts of human error, and may cause of Conclusion that LSD increases as you travel ~~West~~ East of the coastline to be inaccurate.

ResultsPlus
Examiner Comments

4 marks:

This response describes two data collection methods and some of the limitations the candidate experienced eg they mention taking three readings to gain an average but do not explain why an average is useful or why this makes their data more accurate or reliable. For their longshore drift data collection technique they make a point about having human error making it less accurate but the AO3 development is simplistic. There is clear evidence of both AO4 and AO3 at a low level 2 standard.

(e) You have studied a coastal environment as part of your own geographical enquiry.

State the title of your geographical enquiry.

Evaluate the accuracy and reliability of your conclusions.

(8)

Geographical enquiry title

Q: How Does Managed and Unmanaged beaches differ across beaches in the UAE?

T: Investigation of ~~[illegible]~~ how beaches are managed in two varying locations across the UAE.

Me and my group have done an investigation of two locations where we have covered one location as Umm-Al-Quain beach and the other location as Ras-Al-Khaimah beach (RAK beach).

We have analysed ~~[illegible]~~ data on Google Excel where I have made pie charts on the percentage of Sediments and rock types we have done in the investigation when doing the infiltration rate using systematic sampling.

Furthermore, I have a Word document aswell where I have concluded that making a bar chart and measuring the Sediment sizes and which type they are led me to a successful conclusion that the beach is managed well and has granules, sand, and mud.

The field sketch was annotated when I

looked at the beach profile and can tell the shape and structure of the coast. However, After my clinometer and two ranging poles, I have come to conclude that angles in my bar charts are inaccurate and I figured this out from comparing my results to other groups meaning accuracy was unaccurate in my investigation.

(Total for Question 5 = 20 marks)

ResultsPlus
Examiner Comments

3 marks:

This candidate has a fairly confused response but there are terms mentioned which would imply some basic awareness of what would make data more or less accurate and reliable. They used systematic sampling and that they turned their sediment data into a percentage, however, they do not say why this is helpful but it does show an awareness of the things they should try to consider. At the end they discuss the fact that their beach gradient data is inaccurate and give a basic reason for why, therefore they have shown simple AO3 and AO4 to reach the top of level 1.

(e) You have studied a coastal environment as part of your own geographical enquiry.

State the title of your geographical enquiry.

Evaluate the accuracy and reliability of your conclusions.

(8)

Geographical enquiry title

investigating coastal environments

When we studied coastal environments, we went to two beaches to compare them both. at the first beach, we drew the coast [redacted] in our booklets before we used quadrates in the sand and collected sediment that we found and put it in plastic bags, we found things like shells, cigarette buds, plastic and some rocks. while we were looking around, we found fish in the water and some small animals along the way. After that we interviewed a few people we saw at the beach to ask them about the beach. we found that a lot of them enjoyed coming to that beach but a few complaind of how [redacted] unclean and crowded it was. A the second coast, there were less people and it was [redacted] cleaner then the last [redacted] one. people there said they enjoyed how quiet it is and how clean it is. we also found a sea wall at the second coast and we drew it on our booklet and wrote on how it helps the coast from erosion. we looked around the second beach and we found more shells

and more small animals like fish, crabs and ants, we also noticed it was a lot cleaner then the first coast.

ResultsPlus
Examiner Comments

1 mark:

This response is purely a description of what they did on their fieldwork, therefore, 1 mark awarded for basic AO4 for making reference to their own data collection methods.

Paper Summary

Based on their performance on this paper, candidates are offered the following advice:

- When answering the 8 mark longer response questions be clear on the demands of the command word 'analyse'. This requires you to investigate an issue by breaking it down into different components and making logical, evidence-based connections between these components. There is an expectation that judgement is made, although, this does not need to be in the form of an evaluation statement at the end of the response.
- Recognise that the longer response 8 mark question is dominated by the AO distribution (4 marks for AO3 and 4 marks for AO4). Therefore, responses that are unbalanced or focus on one AO will be limited to a mark in level 1.
- Be aware that AO2 is not awarded on the longer response 8 mark questions; this means if using examples in your responses, you need to show how these link to the stimulus material provided in the resource.
- Lifting text directly from a resource will not gain credit.
- In questions where you are asked to develop a single reason, it is important to ensure that the appropriate number of links in the explanatory chain are developed. The number of marks should be used as a guide. These questions usually have the command word, 'suggest' or 'explain', but may differ in depth depending on the expectation of the question.
- Ensure you complete the correct fieldwork question; there were a number of candidates answering questions based on a coasts enquiry in both the river and hazard enquiry questions. This limited responses as marks can only be awarded for generic ideas plausible for the enquiry context being answered.
- Ensure you make specific reference to the resource shown for 4 mark questions in section A.
- Explain characteristics of all the named coastal ecosystems not just coral reefs and mangroves.
- Be confident in explaining different stages in the geographical enquiry process not just fieldwork methods.
- Be aware of the difference between risk and risk mitigation.
- Know how to calculate all measures of central tendency.
- Follow the instructions on the front of the exam paper; if you attempt to answer **all** questions you will run out of time. It would be useful to use the SAMs materials to ensure you are familiar with the structure of the paper to avoid rubric infringements.

Grade boundaries

Grade boundaries for this, and all other papers, can be found on the website on this link:

https://qualifications.pearson.com/en/support/support-topics/results-certification/grade-boundaries.html

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